

## SEACW DELIVERABLE D6.1

### “Validation report of the final system”

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0	22/01/2014	Definition of objectives and expected results
0.1	05/02/2014	Components integration test
0.2	21/02/2014	Ecosystem integration test
0.3	03/03/2014	Usability test
0.4	10/03/2014	First document revision
0.5	18/03/2014	Apps integration test and performance test
0.6	24/03/2014	Second document revision
0.7	04/04/2014	Accesibility test
0.8	16/04/2014	Funcional test
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### Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and work of others has been made through appropriate citation, quotation or both.

### Abstract:

**Validation report of the final system** shows the test of the integration and the behavior of the whole ecosystem. This document comprises the description of the different components and their integration and the test that validates the proper functioning of the mechanisms serving for the integration of these different components.

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## 1 Introduction

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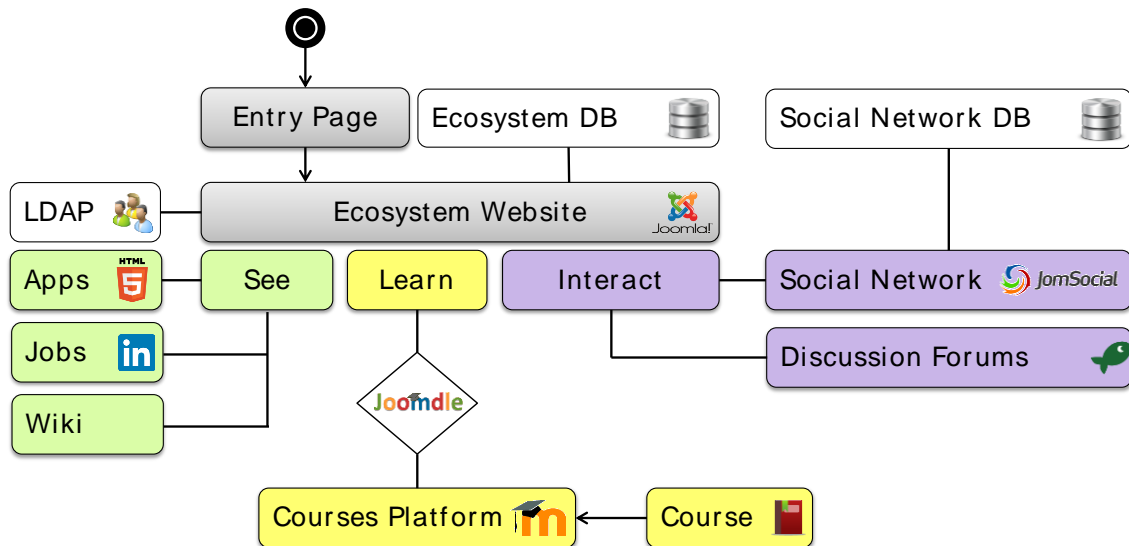
SEACW ecosystem is a dynamic environment, internationally accessible through the Internet, open and extensible, that intends to be an intergenerational meeting point, which promotes digital inclusion with active and collaborative users. This ecosystem catalyzes synergies among creators and consumers of contents and tools (training, applications and general information), in the sphere of Active and Healthy Ageing through information technologies.

SEACW ecosystem is composed of different resources, which interact with each other to leverage new synergies and provide a useful and accessible experience for users. Special care should be taken on how these different resources and components connect to each other, so that the ecosystem is presented to users in a holistic manner.

Validation report of the final system shows the different tests that we have performed in the whole ecosystem to evaluate different aspects like ecosystem integration, apps integration, accessibility integration, usability, performance and functionality with the objective of meeting with all the requirements that we explain in *Validation methodology specifications*, *Testing Specifications*, *Platform design and Requirements* and *Methodology* documents.

## 2 Components Integration

The next figure shows the different components in the ecosystem and how they are connected to each other.



➔ **Entry Page** is the start page of the ecosystem, which summarizes the main functionality that can be found inside. It has many different links to the **Ecosystem Website**.

➔ **Ecosystem Website** comprises all the contents that are shown to SEACW users. It is built over a powerful and modular Content Management System (CMS-Joomla), and it is divided in three main sections: **See**, **Learn** and **Interact**. The contents of the ecosystem will be stored in the **Ecosystem Database**. The login mechanism takes place with an authentication process centralized through the entire ecosystem with an external **LDAP** directory service (*OpenLDAP*).

- **See** section is mostly related to information that can be consumed by users, such as news, events, blog, etc; that are embedded in the ecosystem and does not need special integration requirements. In addition to this section, there are three more subsections:
  - **Apps**, where users can find applications developed for multiple platforms, plus an *HTML5* version that is shown within the ecosystem website.
  - **Jobs** subsection, that has connection to *LinkedIn*, and where users are able to look for jobs and post job offers.
  - **Wiki** subsection that allows users to link collaborative contents developed in Wikipedia and to search for different topics related to the Ecosystem.
- **Learn** section comprises different courses in which registered users can enrol. Each course is located in a **Course** package in *SCORM* format, which can be loaded into the **Courses Platform**, based on a *Moodle* distribution. A connect-

or named *Joomla* connects the **Learn** section of the **Ecosystem Website** to the **Courses Platform**.

- **Interact** section is composed of **Discussion Forums** built using *Codingfish Discussions*, and a **Social Network** which is built over *JomSocial*. This section has a dedicated connection to the **Social Network DB** to allow the framework to share information between users with different languages.

### 3 Ecosystem Integration Testing

This section shows the tests that we have performed to address the verification regarding to the integration between different components, i.e., checking that when these components work properly with each other, they behave as expected, and the ecosystem is perceived as a whole.

Id	#1	Name	Entry Page – Ecosystem Website
Description			The Entry Page will have links to the different sections of the Ecosystem Website. The purpose of the Entry Page is to show the most relevant features of the ecosystem to the user, and as such, it is not required that they both follow the same style guidelines. Still, it is recommended that both pages are similar in style, so that the user transition from one to another is easy and not confusing.
Expected Behavior			It is expected that, when the user clicks on a link in the Entry Page, it is redirected to the corresponding section of the Ecosystem Website. These links may be found either in the navigation bar (at the top), the slideshow, or the main content (profiles and main features).
Testing Plan			Each link should be visited and carefully revised, making sure that it links to the expected section in the website.
Result			Success

Id	#2	Name	Ecosystem Website – Ecosystem DB
Description			The Ecosystem Website needs to store information persistently: events, news, blog posts, courses, etc. These data will be stored in a <i>MySQL</i> server, containing two databases: one for the <i>Moodle</i> courses and other for the other contents. The <i>PHP-MySQL connector</i> will be used, while this connection is performed by the <i>Joomla CMS</i> in a way that is transparent for developers.
Expected Behavior			The Ecosystem Website must be able to connect to the database, and perform CRUD operations: i.e. Creation of new contents, Retrieval of previously stored data, Updating existing contents and removing them.
Testing Plan			Once the Ecosystem Website is properly configured for connecting to the database, the next operations will be carried out, checking that they are completed successfully: <ul style="list-style-type: none"> <li>• Creation of a new page, news or event.</li> <li>• Update of a previously added page, news or event.</li> <li>• Access to a previously added page, news or event.</li> <li>• Removal of a previously added page, news or event.</li> <li>• Creation of a new course.</li> <li>• Access to a previously added course.</li> <li>• Removal of a previously added course.</li> </ul>
Result			Success

Id	#3	Name	Ecosystem Website – LDAP
Description	The Ecosystem Website needs to provide means for users to sign up and login. To do so, an external LDAP directory is deployed. This decision is taken as it provides good scalability: future services can connect directly to LDAP directory, so users are not required to sign up again.		
Expected Behavior	The Ecosystem Website must allow users to sign up and login in the platform. All the information required to users in the registration form must be correctly stored in the LDAP system and with encryption. After registration, users will be able to login with the specified user and password.		
Testing Plan	<p>Once the Ecosystem Website is configured to securely connect to the LDAP directory (OpenLDAP), the next operations will be carried out, checking that they completed successfully:</p> <ul style="list-style-type: none"> <li>• Sign up a new user, fulfilling all the required fields.</li> <li>• Login with the specified user and password of the new user.</li> <li>• Checking that all the fields specified in the sign up process are stored in the directory.</li> </ul>		
Result	Success		

Id	#4	Name	See - Apps
Description	SEACW project involves the development of several apps (games, trivia, and health information) to provide an added value complementing the contents of the Ecosystem Website. These apps will be developed for different platforms, and an HTML5 version is required to be integrated within the Ecosystem Website. It is acceptable that each version has slightly different style to comply with each platform's standards.		
Expected Behavior	The HTML5 version of each app must be accessible from the See section of the Ecosystem Website, and the user shall be able to use it.		
Testing Plan	It will be checked that apps are accessible from the See section of the Ecosystem Website. Specific testing will be performed for each app to verify that they behave in the expected way.		
Result	Success		



Id	#5	Name	See - Jobs
<b>Description</b>	Job finding in health-related areas is a main concern of SEACW. A connection to LinkedIn will allow both candidates to publish their curriculum online, and employers to look for and contact valid candidates. The decision of using LinkedIn provides important advantages, since no specific data protection measures must be taken (with different cross-laws around Europe), and users get involved with the most used professional social network (social inclusion).		
<b>Expected Behavior</b>	Integration and links to LinkedIn will be shown in the See section of the Ecosystem Website, as well as widgets that are relevant to the users. In addition, some basic tutorials and hints to upload the curriculum or to find candidates will be posted to support users not familiarized with this platform.		
<b>Testing Plan</b>	It must be checked that links to the proper section of the LinkedIn network are shown in the See section of the Ecosystem Website.		
<b>Result</b>	Success		

Id	#6	Name	See - Wiki
<b>Description</b>	The wiki section will allow users to collaboratively access and generate new content through Wikipedia. Authorized users from the platform will be in charge of linking new contents related to the Ecosystem that can be related not only to Active and Healthy Ageing but to new technologies, guides for using the platform or any other interesting topic.		
<b>Expected Behavior</b>	All interesting wiki topics will be accesible to all users from the See section. Only authorized users will be able to add, remove or edit contents from the wiki. The wiki integration is multilingual (cross-platform contents)		
<b>Testing Plan</b>	The tests will check that only authorized users are able to add new articles, editing and removing them from the wiki. Topic search and integration will also be tested at this stage.		
<b>Result</b>	Success		

Id	#7	Name	Learn – Courses Platform
Description	One of the main features offered by the SEACW Ecosystem are courses for registered users, related to Active and Healthy Ageing. These courses will be stored in the Courses Platform, built over <i>Moodle</i> , a reliable, powerful and standard e-learning environment. The Learn section of the Ecosystem will be connected to the Courses Platform by means of <i>Joomla</i> , a Joomla-Moodle connector.		
Expected Behavior	All the courses will be accessible to registered users from the Learn section of the Ecosystem Website. The contents shown to users will be the same that those offered if they were taken directly in <i>Moodle</i> (without the need of accessing from <i>Joomla</i> ).		
Testing Plan	It must be checked that the courses are accessible from the Learn section of the Ecosystem Website. All courses' contents must be easily accessible, and the learning experience resulting from integrating the Ecosystem Website with the Courses Platform should be equivalent to that obtained by using the Courses Platform alone (i.e. transparent for the user).		
Result	Success		

Id	#8	Name	Courses Platform - Course
Description	Each course is located in a <i>SCORM</i> package, which contains web material which is packed complaint with the learning objects standard.		
Expected Behavior	Courses in <i>SCORM</i> format can be loaded in the Courses Platform correctly, so that all the contents can be accessible.		
Testing Plan	Several courses, either generated or obtained from public sources will be loaded into the Courses Platform by using the <i>Moodle SCORM module</i> . Then, it should be checked that the courses are loaded correctly and all the contents of the course can be accessed from the platform.		
Result	Success		

Id	#9	Name	Interact – Social Network
Description	SEACW also offers an easy-to-use social network where users can interact among them, and which is accessible from the Interact section of the Ecosystem Website. This social network will offer functionality for users to make friends, update their profiles, upload images and videos and create events. The social network is built over the <i>JoomSocial</i> component for <i>Joomla</i> .		
Expected Behavior	The social network is accessible from the Interact section of the ecosystem, and all its functionality is available to registered users. Also, the style of the social network must conform to the guidelines followed for the rest of the Ecosystem Website.		
Testing Plan	<p>It must be checked that the social network is accessible from the Interact section of the Ecosystem Website, and that the style guidelines correspond to those of the website. Also, the next functionality must work properly:</p> <ul style="list-style-type: none"> <li>• Publishing a new post in the user profile.</li> <li>• Adding a new friend.</li> <li>• Liking contents from friends.</li> <li>• Commenting on contents from friends.</li> <li>• Uploading a new image.</li> <li>• Setting an image as the profile picture.</li> <li>• Setting an image as the cover picture.</li> <li>• Uploading a new video.</li> <li>• Creating a new event.</li> <li>• Inviting friends to an event.</li> <li>• Joining an event.</li> </ul>		
Result	Success		

Id	#10	Name	Social Network – Social Network DB
Description	<p>The Social Network needs to store information persistently: posts, comments, likes, friendships, events, etc. This data will be stored in a secure <i>MySQL</i> server containing the database. The <i>PHP-MySQL connector</i> will be used, while this connection is performed by the <i>Joomla</i> system in a way which is transparent to developers. The decision of taking the Social Network DB outside is fundamented because it will enable different instances (e.g. different localized versions of the Ecosystem) to interact with each other.</p>		
Expected Behavior	<p>The Social Network must be able to connect to the database, and perform CRUD operations: i.e. Creation of new contents, Removal or Updating existing contents, and querying over previously stored data.</p>		
Testing Plan	<p>Once the Social Network is configured to connect to the database, the next operations will be carried out, checking that they work:</p> <ul style="list-style-type: none"> <li>• Update the user profile.</li> <li>• Upload new image or video.</li> <li>• Commenting contents from friends.</li> <li>• Adding a new friend.</li> <li>• Creating and joining new events.</li> </ul>		
Result	Success		

Id	#11	Name	Interact – Discussion Forums
Description	<p>The Interact section of the Ecosystem Website contains discussion forums built over <i>Codingfish Discussions</i>, where users can post new topics and answer on existing ones.</p>		
Expected Behavior	<p>The discussion forums are accessible from the Interact section of the ecosystem, and all its functionality is available to registered users.</p>		
Testing Plan	<p>It must be checked that the discussion forums are shown to registered users within the Interact section of the Ecosystem Website. Moreover, the next functionality will be checked:</p> <ul style="list-style-type: none"> <li>• Creating a new thread.</li> <li>• Commenting on an existing thread.</li> <li>• Deleting a comment or thread.</li> </ul>		
Result	Success		

## 4 Apps Integration Testing

This section designs the tests which are required to address the verification regarding the integration between different components, i.e., checking if all developed application tools of the platform correctly interact with the unified login system to permit the users to access applications with same SEACW ecosystem credentials.

Id	#1	Name	Unified Login/Token Verification Provider System
<b>Description</b>	<p>Unified login service is available for the backend of any application to check the user's token validity by verifying user credentials previously registered on the LDAP server of the ecosystem.</p> <p>User's token expires after a given time counted from the timestamp of the last access. Therefore users must renew the token and extend the token validity by following the login operations based on the verification service. Token validity is also renewed while registering a new device.</p> <p>Unified Login/Token Verification system follows three steps:</p> <ol style="list-style-type: none"> <li>1) Authenticate users according to the credentials already existing on the SEACW portal.</li> <li>2) Assign the users univocal tokens for each application.</li> <li>3) Communicate with the ecosystem LDAP server to verify if a user owns the required privileges to access the application with a specific role defined in the ecosystem.</li> </ol>		
<b>Expected Behavior</b>	<ul style="list-style-type: none"> <li>• Successfully log in with SEACW credentials on all developed Applications (mobile/web portal)</li> <li>• Successfully register of new device, providing new unique token to each user device, on application back-end server for tracking anonymous data during pilot experimentation.</li> <li>• No data loss connectivity during query LDAP ecosystem server retrieving user role information.</li> </ul>		
<b>Testing Plan</b>	<ul style="list-style-type: none"> <li>• Consume login-web service by back-end server for each developed tool platform and check successfull return status.</li> <li>• Consume registration web-service by back-end server for each developed tool of the platform and check successful return status.</li> </ul>		
<b>Result</b>	Success		

Id	#2	Name	Cross-Platform Registration
<b>Description</b>	<p>The crossplatform registration is used in SEACW environment to register the user by verifying on LDAP server the user's authorization level for a specific application of the ecosystem. As its name already suggests, it has been designed to apply the same operating principle both on mobile and on web portal applications.</p> <p>In addition the crossplatform registration is used (on Alpinatec and HRUG apps) to enter further information not meant to be stored on the SEACW ecosystem but essential to guarantee the application to work properly.</p>		
<b>Expected Behavior</b>	<p>Registration will store the device ID and will track the device during usage of the application tools available in the ecosystem. Therefore a registered device is recognized when it access the platform.</p>		
<b>Testing Plan</b>	<ul style="list-style-type: none"> <li>• Retrieve with mobile/web portal application the cross-platform registration form for each developed tool.</li> <li>• Enter user credentials data provided by SEACW ecosystem.</li> <li>• Enter additional information data needed to guarantee the application to work properly.</li> <li>• Check if the cross-platform registration form validates login information data by consume registration web service of the unified login system.</li> <li>• Check if the cross-platform registration form validates additional data needed to guarantee the application to work properly.</li> <li>• Check if the additional data are correctly stored in the specific application tool database with the correct object relation mapping.</li> <li>• Successfully register the application returning the unique token and additional information to consume web services (mobile/web portal apps) and user profile.</li> </ul>		
<b>Result</b>	<p>Success</p>		

Id	#3	Name	Web Portal
<b>Description</b>	Users accessing applications that have web portal functionalities must be able to log in using credential stored on the SEACW ecosystem by calling the unified login service. Applications without web portal are directly connected to back-end server and relative data/business layers by web-services API, the interaction is only between mobile application and back-end server over the internet network.		
<b>Expected Behavior</b>	Successfully access to web portal functionality and specific user role with SEACW ecosystem credentials		
<b>Testing Plan</b>	<ul style="list-style-type: none"> <li>• Retrieve with web portal application the login form for each developed tool.</li> <li>• Enter user credentials data provided by SEACW ecosystem</li> <li>• Check if the login form validates login information data by consuming login web service of the unified login system.</li> <li>• Successfully log in user and retrieve web portal application homepage.</li> </ul>		
<b>Result</b>	Success		

Id	#4	Name	Log in Web Services
<b>Description</b>	Native login backend server must call the unified login and verify if a user has been validated on the LDAP server.  Call to endpoints must be verified by checking the token validity with unified login service.		
<b>Expected Behavior</b>	Call to endpoints must be successful and return the device token that allow user to access the application		
<b>Testing Plan</b>	<ul style="list-style-type: none"> <li>• Consume login-web service by back-end server for each developed mobile application and check successful return unique application token</li> </ul>		
<b>Result</b>	Success		

Id	#5	Name	Opendata
<b>Description</b>	In order to keep data on applications always updated or to feed the application with new data, ad hoc designed importer tools able to retrieve and handle Open Data coming from heterogeneous sources (URL, REST services, XML files, databases) will be developed during the integration stage of the project.		
<b>Expected Behavior</b>	The importer will be able to collect, filter and adapt the information gathered from the heterogeneous sources and to store the new data into the ecosystem database.		
<b>Testing Plan</b>	<ul style="list-style-type: none"> <li>• Web service data retrieval               <ul style="list-style-type: none"> <li>○ Connect to the remote source</li> <li>○ Acquire remote data</li> <li>○ Create the object relation mapping (Hibernate Entity framework)</li> <li>○ Store data into application database</li> <li>○ Retrieve data on mobile application</li> </ul> </li> <li>• File data retrieval               <ul style="list-style-type: none"> <li>○ Acquire file from local file system</li> <li>○ Create the object relation mapping (Hibernate Entity framework)</li> <li>○ Store data into application database</li> <li>○ Retrieve data on mobile application</li> </ul> </li> <li>• Database data retrieval               <ul style="list-style-type: none"> <li>○ Connect to the remote database by the object relation mapping connector (SQL server connector, MySQL server connector, etc) and create objects</li> <li>○ Store data into application database</li> <li>○ Retrieve data on mobile application.</li> </ul> </li> </ul>		
<b>Result</b>	Success		



## 5 Accessibility Test

It has been decided to perform the accessibility tests with the TAW analyser. With the standalone version of this tool it is possible to test the whole SEACW site. In addition, TAW analyser clearly marks the accessibility violations that it discovers by providing an annotated version of the web site as well as recommendations on how to resolve them.

In the following tables is detailed for the four main checkpoints (perceivable, operable, understandable and robust). For each criterion, the result can be a success, failure or N/A (not applicable).

1-Perceivable				
Id	Type	Guidelines	Level	Result
1.1	Text Alternatives	No text-content	A	success
1.2	Time-based Media	Audio-only and Video-only (Pre-recorded)	A	na
		Captions (Pre-recorded)	A	na
		Audio Description or Media Alternative (Pre-recorded)	A	na
		Captions (Live)	AA	na
		Audio Description (Pre-recorded)	AA	na
		Sign Language (Pre-recorded)	AAA	na
		Extended Audio Description (Pre-recorded)	AAA	na
		Media Alternative (Pre-recorded)	AAA	na
		Audio-only (Live)	AAA	na
1.3	Adaptable	Info and Relationships	A	success
		Meaningful Sequence	A	success
		Sensory Characteristics	A	success
1.4	Distinguishable	Use of Colour	A	success
		Audio Control	A	success
		Contrast (Minimum)	A	success
		Resize text	AA	success
		Images of Text	AA	success
		Contrast (Enhanced)	AAA	success
		Low or No Background Audio	AAA	na
		Visual Presentation	AAA	fail
		Images of Text (No Exception)	AAA	success

2-Operable				
Id	Type	Guidelines	Level	Result
2.1	Keyboard Accessible	Keyboard	A	success
		No Keyboard Trap	A	success
		Keyboard (No Exception)	AAA	fail
2.2	Enough Time	Timing Adjustable	A	success
		Pause, Stop, Hide	A	success
		No Timing	AAA	success
		Interruptions	AAA	success
		Re-authenticating	AAA	success
2.3	Seizures	Three Flashes or Below Threshold	A	success
		Three Flashes	AAA	success
2.4	Navigable	Bypass Blocks	A	success
		Page Titled	A	success
		Focus Order	A	success
		Link Purpose (In Context)	A	success
		Multiple Ways	AA	success
		Headings and Labels	AA	success
		Focus Visible	AA	success
		Location	AAA	success
		Link Purpose (Link Only)	AAA	success
Section Headings	AAA	success		

3-Understandable				
Id	Type	Guidelines	Level	Result
3.1	Readable	Language of Page	A	success
		Language of Parts	AA	success
		Unusual Words	AAA	fail
		Abbreviations	AAA	fail
		Reading Level	AAA	success
		Pronunciation	AAA	success
3.2	Predictable	On Focus	A	success
		On Input	A	success
		Consistent Navigation	AA	success
		Consistent Identification	AA	success
		Change on Request	AAA	success
3.3	Input Assistance	Error Identification	A	success
		Labels or Instructions	A	success
		Error Suggestion	AA	success
		Error Prevention (Legal, Financial, Data)	AA	success
		Help	AAA	success
		Error Prevention (All)	AAA	success

4-Robust				
Id	Type	Guidelines	Level	Result
4.1	Compatible	Parsing	A	success
		Name, Role, Value	A	success

## 6 Usability Test

The Usability testing is focused on measuring how the user engages with the interfaces offered by the website and studies their capacity to meet the goals when users visit the website.

Usability testing consists of selecting a group of users of an application and asking them to carry out the tasks for which it was designed. The design team, developers and other stakeholders take note of the interaction, particularly from mistakes and difficulties that the users find in the platform.

### 6.1 Ecosystem

Question	Result (It meets / It does not meet)
<b>1. IDENTITY</b>	
1.1. With the information provided on the screen, it is possible to know which institution or company owns the site?	It meets
1.2. Is there any graphic element or text that has helped you to understand more clearly which institution or company owns the site?	It meets
1.3. Of the items displayed on the screen, is there anything that you think is out of place, because it belongs to the institution or company that identifies you as the owner?	It meets
1.4. Is there an image on the application representing the institution?	It meets
<b>2. CONTENT</b>	
2.1. Are there mixed terms in different languages?	It meets No other languages
2.2. Is the vocabulary used easy?	It meets
2.3. Is there enough time provided to perform the keyboard input?	It meets
2.4. Are the texts used in the content of the links sufficiently descriptive of what is offered in the pages to which are accessed through them?	It meets
2.5. Is the interface and content understood?	It meets
2.6. Is it easy to identify an object or an action?	It meets
2.7. Are the messages presented by the system appropriate?	It meets
2.8. Does the system report errors clearly presented?	It meets

<b>3. NAVIGATION</b>	
3.1. Can you jump from any page to the site home page in a simple way?	It meets
3.2. Is the system easy to operate for someone who did not train in your operation?	Not always
3.3. Is the result of an action easy to understand?	It meets
3.4. Is there a comfortable navigation within the product and an easy way out of it?	Not always
3.5. Could you see some information that indicates you where you are in the application and what you can do in it?	It meets
<b>4. WEB GRAPH</b>	
4.1. Is it appropriate, how the images are displayed on the web-site?	It meets
4.2. Are the images fast to load?	It meets
4.3. Do you think the site is graphically balanced?	It meets
4.4. Is the interface designed to facilitate the efficient completion of the tasks in the best way possible?	It meets
<b>5. UTILITY</b>	
5.1. After a first look, do you clearly know the goal of the site?	It meets
5.2. Do you think the content and services offered on this site are useful for your own case?	It meets

## 6.2 Trivia Anti-aging

Question	Result (It meets / It does not meet)
<b>1. IDENTITY</b>	
1.1. With the information provided on the screen, it is possible to know which institution or company owns the site?	It meets
1.2. Is there any graphic element or text that has helped you to understand more clearly which institution or company owns the site?	It meets
1.3. Of the items displayed on the screen, is there anything that you think is out of place, because it belongs to the institution or company that identifies you as the owner?	It meets
1.4. Is there an image on the application representing the institution?	It meets
<b>2. CONTENT</b>	
2.1. Are there mixed terms in different languages?	It meets
2.2. Is the vocabulary used easy?	It meets
2.3. Is there enough time provided to perform the keyboard input?	It meets
2.4. Are the texts used in the content of the links sufficiently descriptive of what is offered in the pages to which are accessed through them?	Not applicable
2.5. Is the interface and content understood?	It meets
2.6. Is it easy to identify an object or an action?	It meets
2.7. Are the messages presented by the system appropriate?	It meets
2.8. Does the system report errors clearly presented?	It meets
2.9. Does the application use messages or descriptions?	Messages
2.10. Does the information need only to be presented to the user?	No
<b>3. NAVIGATION</b>	
3.1. Can you jump from any page to the site home page in a simple way?	It meets
3.2. Is the system easy to operate for someone who did not train in your operation?	It meets

3.3. Is the result of an action easy to understand?	It meets
3.4. Is there a comfortable navigation within the product and an easy way out of it?	It meets
3.5. Could you see some information that indicates you where you are in the application and what you can do in it?	It meets
<b>4. WEB GRAPH</b>	
4.1. It is appropriate, how the images are displayed on the web-site?	It meets
4.2. Are the images fast to load?	It meets
4.3. Do you think the site is graphically balanced?	It meets
4.4. Is the interface designed to facilitate the efficient completion of the tasks in the best way possible?	It meets
<b>5. UTILITY</b>	
5.1. After a first look, do you clearly know the goal of the site?	It meets
5.2. Do you think the content and services offered on this site are useful for your own case?	It meets

## 6.3 Trivia English

Question	Result (It meets / It does not meet)
<b>1. IDENTITY</b>	
1.1. With the information provided on the screen, it is possible to know which institution or company owns the site?	It meets
1.2. Is there any graphic element or text that has helped you to understand more clearly which institution or company owns the site?	It meets
1.3. Of the items displayed on the screen, is there anything that you think is out of place, because it belongs to the institution or company that identifies you as the owner?	It meets
1.4. Is there an image on the application representing the institution?	It meets
<b>2. CONTENT</b>	
2.1. Are there mixed terms in different languages?	No
2.2. Is the vocabulary used easy?	It meets
2.3. Is there enough time providing to perform the keyboard input?	It meets
2.4. Are the texts used in the content of the links sufficiently descriptive of what is offered in the pages to which are accessed through them?	Not applicable
2.5. Is the interface and content understood?	It meets
2.6. Is it easy to identify an object or an action?	It meets
2.7. Are the messages presented by the system appropriate?	It meets
2.8. Does the system report errors clearly presented?	It meets
2.9. Does the application use messages or descriptions?	Messages
2.10. Does the information need only to be presented to the user?	No
<b>3. NAVIGATION</b>	
3.1. Can you jump from any page to the site home page in a simple way?	It meets
3.2. Is the system easy to operate for someone who did not train in your operation?	It meets
3.3. Is the result of an action easy to understand?	It meets



3.4. Is there a comfortable navigation within the product and an easy way out of this?	It meets
3.5. Could you see some information that indicates you where you are in the application and what you can do in it?	It meets
<b>4. WEB GRAPH</b>	
4.1. It is appropriate, how the images are displayed on the web-site?	It meets.
4.2. Are the images fast to load?	It meets
4.3. Do you think the site is graphically balanced?	It meets
4.4. Is the interface designed to facilitate the efficient completion of the tasks in the best way possible?	It meets
<b>5. UTILITY</b>	
5.1. After a first look, do you clearly know the goal of the site?	It meets
5.2. Do you think the content and services offered on this site are useful for your own case?	It meets

## 6.4 Trivial IT

Question	Result (It meets / It does not meet)
<b>1. IDENTITY</b>	
1.1. With the information provided on the screen, it is possible to know which institution or company owns the site?	It meets
1.2. Is there any graphic element or text that has helped you to understand more clearly which institution or company owns the site?	It meets
1.3. Of the items displayed on the screen, is there anything that you think is out of place, because it belongs to the institution or company that identifies you as the owner?	It meets
1.4. Is there an image on the application representing the institution?	It meets
<b>2. CONTENT</b>	
2.1. Are there mixed terms in different languages?	It meets
2.2. Is the vocabulary used easy?	It meets
2.3. Is there enough time provided to perform the keyboard input?	It meets
2.4. Are the texts used in the content of the links sufficiently descriptive of what is offered in the pages to which are accessed through them?	It meets
2.5. Is the interface and content understood?	It meets
2.6. Is it easy to identify an object or an action?	It meets
2.7. Are the messages presented by the system appropriate?	It meets
2.8. Does the system report errors clearly presented?	It meets
2.9. Does the application use messages or descriptions?	Messages
2.10. Does the information need only to be presented to the user?	No
<b>3. NAVIGATION</b>	
3.1. Can you jump from any page to the site home page in a simple way?	It meets
3.2. Is the system easy to operate for someone who did not train in your operation?	It meets
3.3. Is the result of an action easy to understand?	It meets

3.4. Is there a comfortable navigation within the product and an easy way out of this?	It meets
3.5. Could you see some information that indicates you where you are in the application and what you can do in it?	It meets
<b>4. WEB GRAPH</b>	
4.1. It is appropriate, how the images are displayed on the web-site?	It meets
4.2. Are the images fast to load?	It meets
4.3. Do you think the site is graphically balanced?	It meets
4.4. Is the interface designed to facilitate the efficient completion of the tasks in the best way possible?	It meets
<b>5. UTILITY</b>	
5.1. After a first look, do you clearly know the goal of the site?	It meets
5.2. Do you think the content and services offered on this site are useful for your own case?	It meets

## 6.5 Health Repository

Question	Result (It meets / It does not meet)
<b>1. IDENTITY</b>	
1.1. With the information provided on the screen, it is possible to know which institution or company owns the site?	It meets
1.2. Is there any graphic element or text that has helped you to understand more clearly which institution or company owns the site?	It meets
1.3. Of the items displayed on the screen, is there anything that you think is out of place, because it belongs to the institution or company that identifies you as the owner?	It does not meet
1.4. Is there an image on the application representing the institution?	It does not meet
<b>2. CONTENT</b>	
2.1. Are there mixed terms in different languages?	It meets
2.2. Is the vocabulary used easy?	It meets
2.3. Is there enough time provided to perform the keyboard input?	It meets
2.4. Are the texts used in the content of the links sufficiently descriptive of what is offered in the pages to which are accessed through them?	
2.5. Is the interface and content understood?	It meets
2.6. Is it easy to identify an object or an action?	It meets
2.7. Are the messages presented by the system appropriate?	It meets
2.8. Does the system report errors clearly presented?	It meets
2.9. Does the application use messages or descriptions?	It meets
2.10. Does the information need only to be presented to the user?	No
<b>3. NAVIGATION</b>	
3.1. Can you jump from any page to the site home page in a simple way?	It meets
3.2. Is the system easy to operate for someone who did not train in your operation?	It meets

3.3. Is the result of an action easy to understand?	It meets
3.4. Is there a comfortable navigation within the product and an easy way out of this?	It meets
3.5. Could you see some information that indicates you where you are in the application and what you can do in it?	It meets
<b>4. WEB GRAPH</b>	
4.1. It is appropriate, how the images are displayed on the web-site?	It meets
4.2. Are the images slow to load?	It meets
4.3. Do you think the site is graphically balanced?	It meets
4.4. Is the interface designed to facilitate the efficient completion of the tasks in the best way possible?	It meets
<b>5. UTILITY</b>	
5.1. After a first look, do you clearly know the goal of the site?	It meets
5.2. Do you think the content and services offered on this site are useful for your own case?	It meets

## 7 Performance Test

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In this section we show the performance tests that we have performed in both the web platform ecosystem and mobile applications with the results of some of them.

### 7.1 Performance tests for mobile applications

There are several options to check mobile applications performance. However, it is not necessary the usage of third party tools to do this task, but use the tools included in each mobile application development environment. This way, there are benchmarking tools present in the following SDKs: Xcode (iOS); Android Developer Tools Eclipse plugin or Android Studio (Android); and Samsung SMART TV SDK Eclipse plugin and its Automatic Testing Tools (Samsung Smart TV).

Among the different tests, we have some oriented to application performance analysis. Also, as SDKs are official packages, these tests can be performed for free, and better yet, all the tests done are just the ones which provide relevant conclusions about the performance of the final product.

In turn, there are other applications that can complement the results of these tests, but their use is discarded for not providing sufficient new data compared to the official SDK suggested tests.

Next, test and results for the various types of developed applications will be presented. It should be noted that the results obtained will be explained by each application type because of its similarity. Finally, some general conclusions will be given.

Note: in order to perform a comparison of the results obtained from the tests correctly, it was decided to perform three kind of tests related to three different scenarios described below.

- Test in maximum flow time of application activity (from now on “Scenario 1”)
- Test in minimum flow time of application activity (from now on “Scenario 2”).
- Test in application background (from now on “Scenario 3”).

However, in the last test was chosen to study the logs after various executions.

### 7.1.1 TEST A: CPU LOAD TEST

In this test, CPU used by applications is checked. A good performance result implies a low CPU consumption, and it avoids spikes (stability). It is very important to take into account that results obtained in this test also determine the behaviour of the application in other aspects. An example of this is that results of this test are useful to determine the battery drain on the mobile device (high CPU usage implies more battery drain).

Figure 1. CPU load in scenario 1 for trivia games

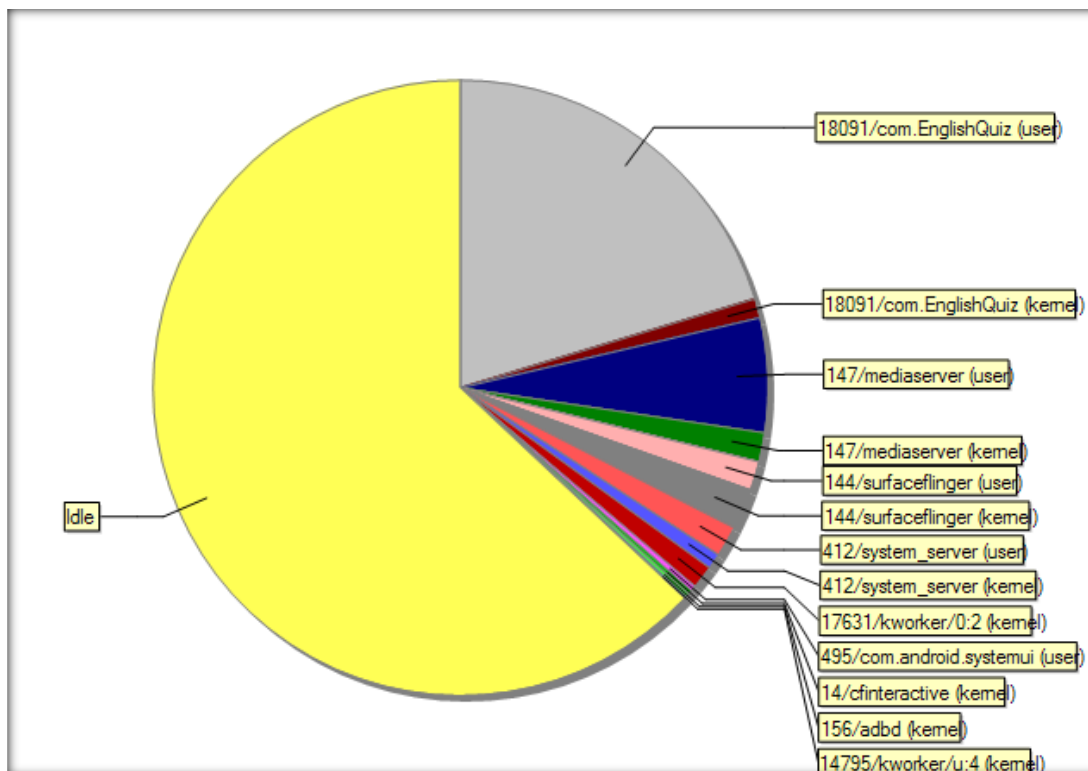


Figure 2: CPU load in scenario 2 for trivial games

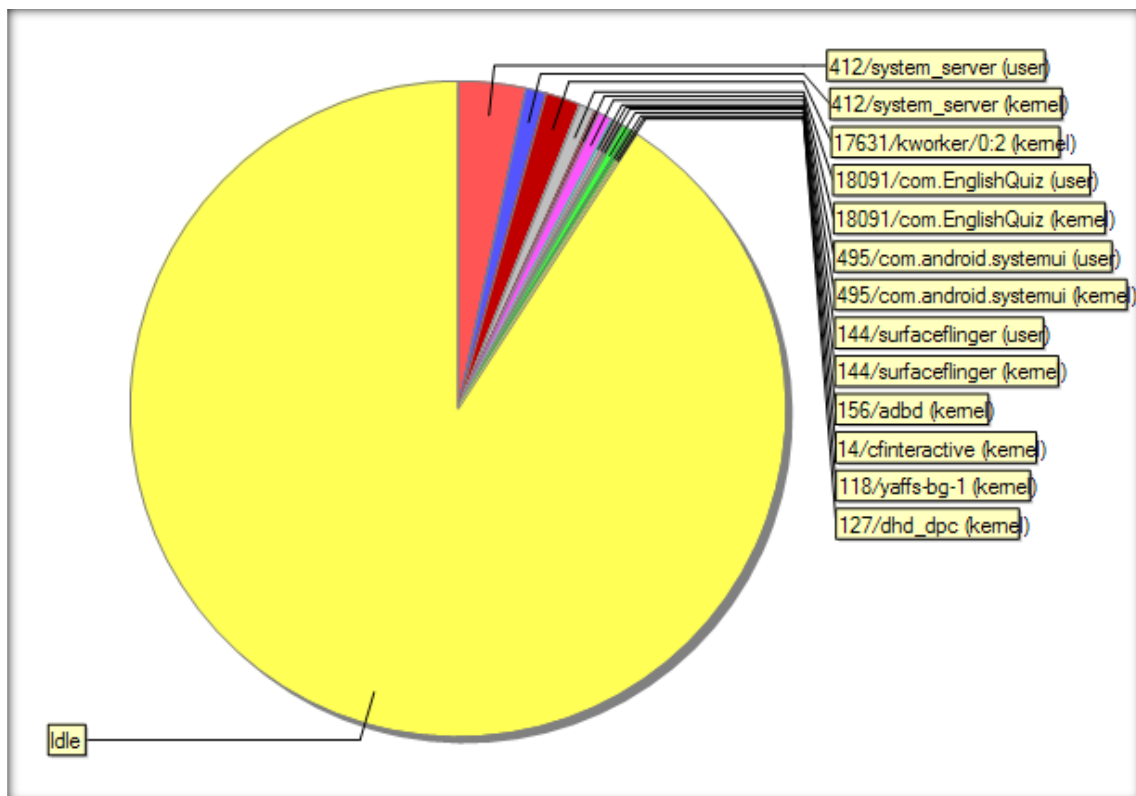
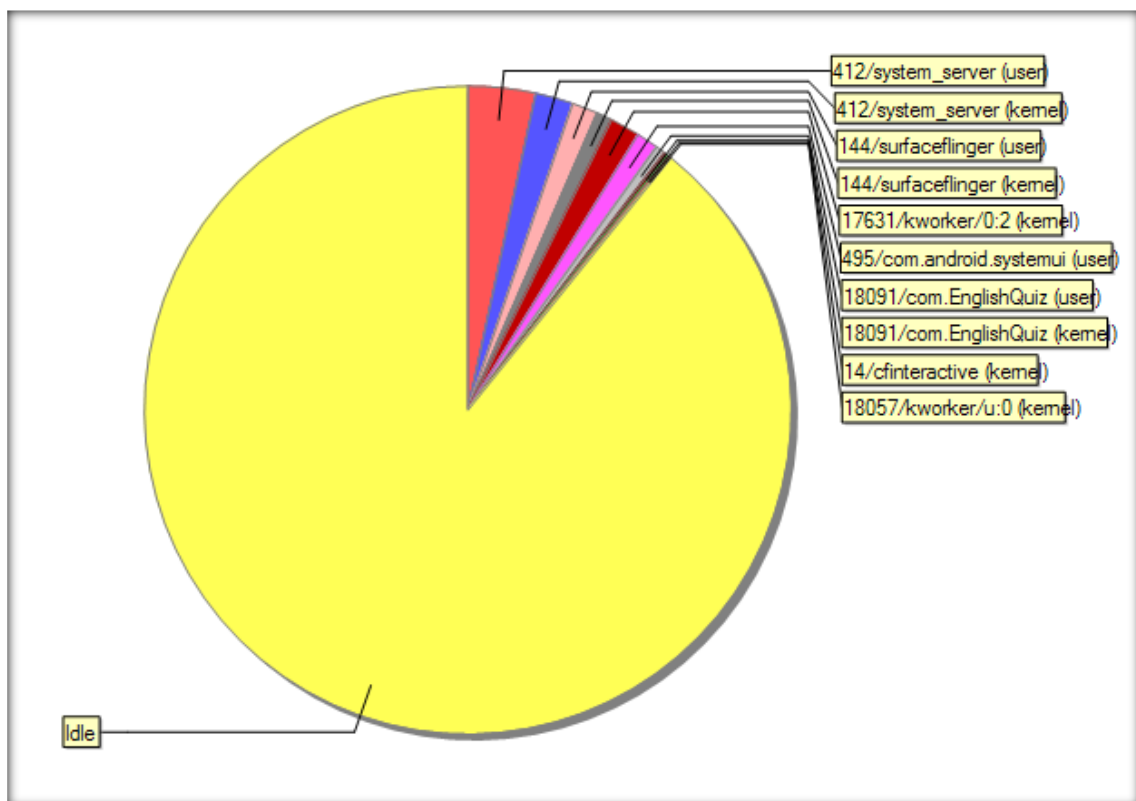


Figure 3: CPU load in scenario 3 for trivial game





As it can be seen in Figure 1, when trivial games are running demanding maximum application flow (i.e. when playing) their computational usage is bigger than all the other processes together. Anyway, this resource usage is small enough as to leave more than two-thirds of available resources free (taking into account other running activities), which is good because it allows having several other applications running in background without compromising the system stability. In Figure 2, it can be seen that trivial games behave quite good as far as resource usage is concerned when it runs in the simplest cases (i.e. menus). Finally, in figure 3, it can be seen that trivial games running in background are almost noticeable, performing a minimum of CPU usage.

### 7.1.2 TEST B: MEMORY USAGE TEST

In this test memory consumption is analysed for each one of the three previous defined scenarios. A good performance result implies low memory consumption and avoids spikes, which implies overall stability in the system.

Figure 4: Memory consumption in scenario 1 for trivial games

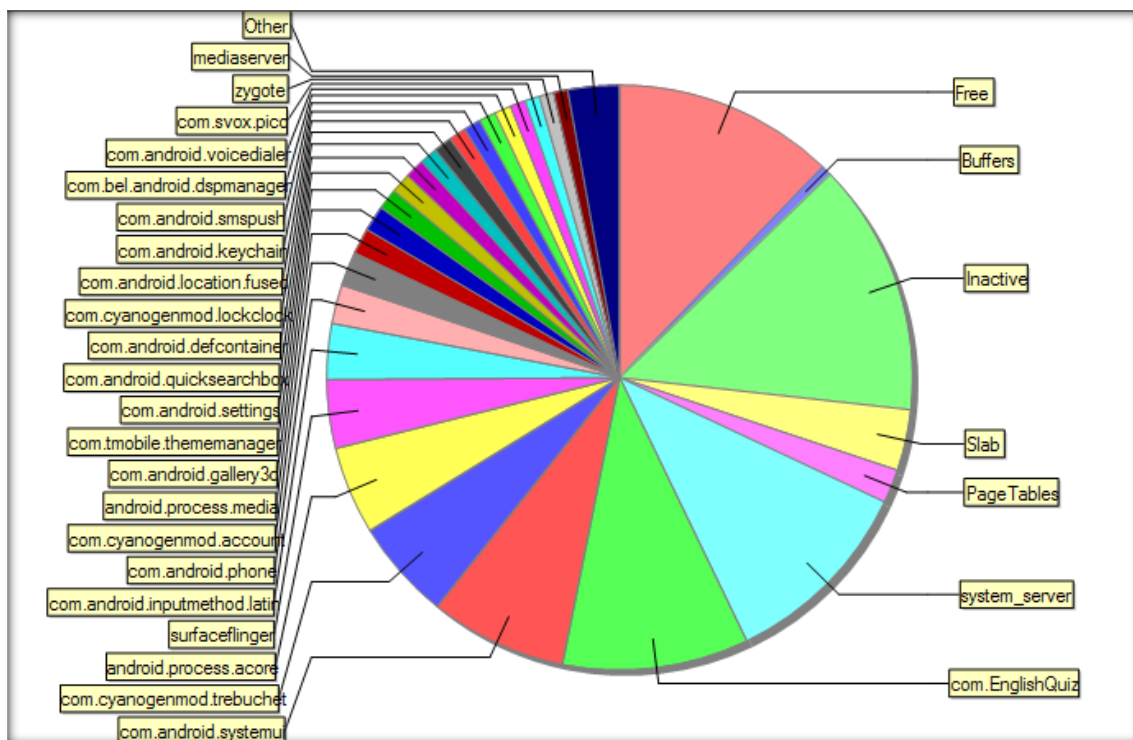


Figure 5: Memory consumption in scenario 2 for trivial games

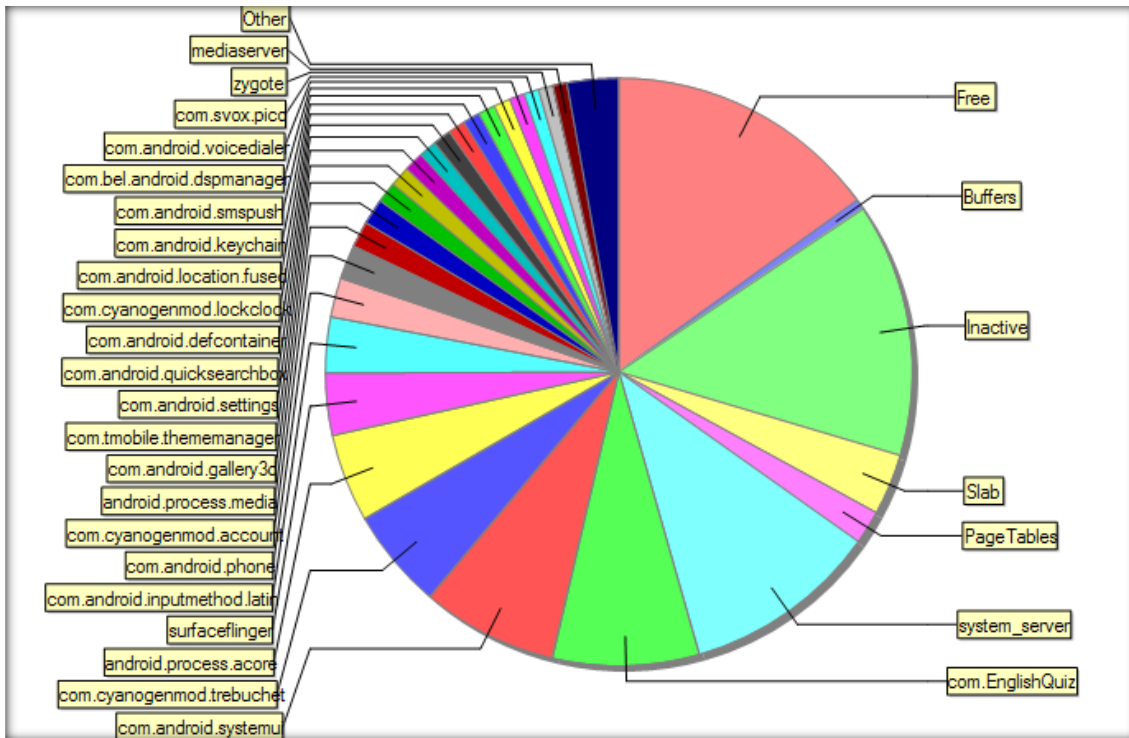
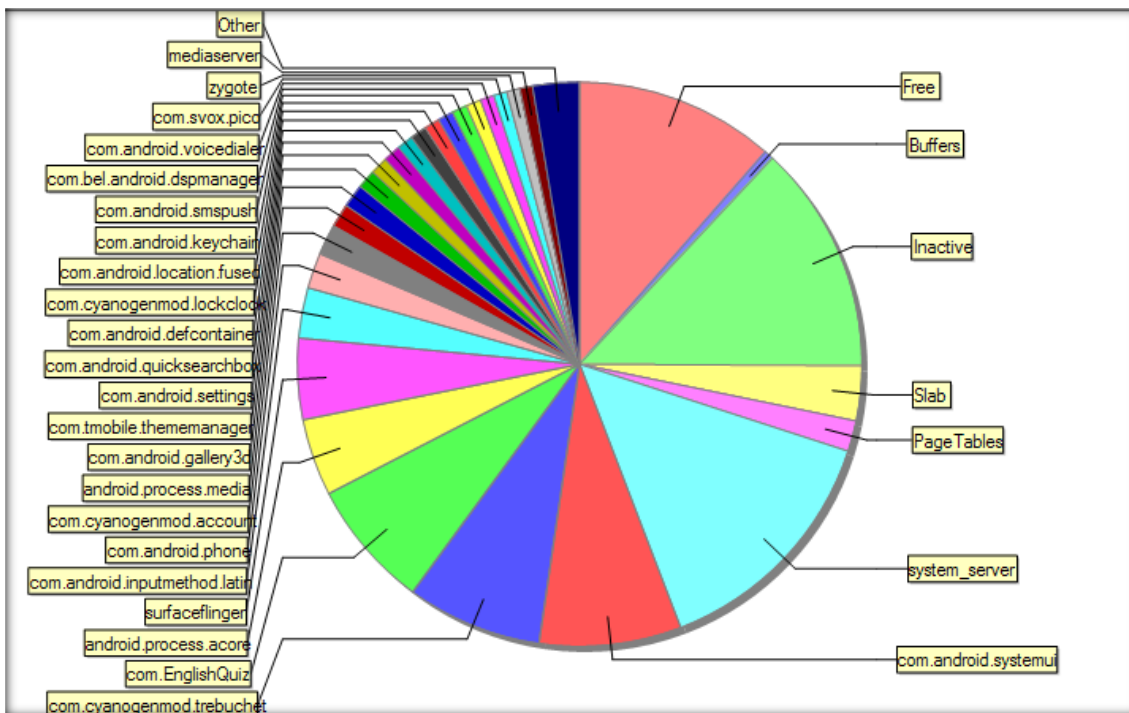


Figure 6: Memory consumption in scenario 3 for trivial games



Thus Figure 4, Figure 5 and Figure 6 show that memory requirements for the application are the same in the three scenarios. This could be related to the fact that trivial games may load all their resources in RAM and no extra space is needed during the game, keeping stable memory consumption along its execution. Moreover it is noteworthy that the memory consumption is low, possibly due to the little amount of resources used by such games.

### 7.1.3 TEST C: GARBAGE COLLECTOR TEST

In this test, Dalvik Debug Monitor Server (DDMS) logs are studied to check the application performance and its resource management.

Frequent appearances of the garbage collector are observed along the executions, especially in the application greatest intensity periods. Even so, the user is not able to detect frames that can be eliminated due to these garbage collector appearances. Therefore, results are acceptable because they do not affect the user experience, but application can be improved to avoid the usage of unnecessary resources.

## 7.2 Web Environment

### 7.2.1 Test Design

The performance tests serve two different purposes:

- Validation, i.e., the loaded resource of the ecosystem must correspond to the one which was asked for.
- Efficiency, i.e., how the infrastructure scales to an increasing number of simultaneous requests.

JMeter will be used for running the validation tests, as it enables an easy design phase and tests will support both assertions (for validation) and performance metrics. Also, the test design file (in XML format) and test results (in CSV format) can be easily shared.

The test covers the whole SEACW website, both the public part and the members part (i.e., those pages which require previous login). Moreover, the test simulates the next user behaviour:

1. A user reaches the SEACW main page.
2. The user visits the *Learn* page before login.
3. The user selects one course and sees the description before login.
4. The user logs into the website with a valid login / password.
5. The user visits a random section of the web, either *Learn*, *See* or *Interact*, each with the same chance.
6. The user visits a random subsection of the web, located in the section visited in step (5).
7. Step (6) is repeated until a leaf in the website tree is reached, i.e., no more subsections can be visited.

This simulation will run with a fixed number of 1000 iterations (which should be able to cover the whole web structure even though random choices are made) and a variable number of simultaneous requests, i.e., threads. The number of threads will move from 1 to 200, testing different intermediate values (10, 20, 50, 100) which will provide evidence of how performance scale when a different number of simultaneous requests is used. The number of threads is upper-bounded to 200 as higher numbers will freeze JMeter (or the underlying Java VM), which cannot handle correctly such a number of threads in the computer where the tool is running.

The performance tests, whose output is on ANNEX I, reveal how the loading times for most web pages are about 500ms, except for the login task and the Interact page, both taking more than one second to load, as they require more processing in the server side to manage the sessions. These times increase slightly as the number of threads is increased, while they start to grow significantly when the number of threads is setup to over 50.

## 8 Functional Test

It is verified that the functional requirements are fulfilled. Therefore, all the functionalities are also fulfilled.

### 8.1 Ecosystem

Requirement		Result (Success / Fail)
See course catalogue	All users (registered users, users) who visit the website can see the catalogue of courses.	Success
Sign up	Sign up a user from a no registered user.	Success
Sign in	All the users who have done sign up will be able to sign in the ecosystem and do all tasks that they want.	Success
View my profile	Registered users can see their profile and may modify or update personal data.	Success
Modify my profile	Registered users can modify their data.	Success
Delete my profile	Registered users can delete their profile.	Success
Report bad behavior	A registered user or a tutor can notice a bad behavior of other user on a forum.	Success
Calendar	In the calendar, user can see the highlights of the ecosystem, start of new courses, events, etc.	Success
Course registration	A registered user ecosystem can enrol in offered courses in a very simple way.	Success
Take course	The registered user can do any course if he is enrolled previously.	Success
My courses	The registered user can see the list of all the courses he is enrolled or the course he has done	Success
Forum	The forum will raise questions, thoughts, suggestions.	Success
Send information to a friend	Registered users of the ecosystem can send some information to friends; those friends can see full information only if they will sign up in the ecosystem.	Success
Send course invitation to a friend	A registered user who is registered in a course can send an invitation to one of the courses that he is enrolled to a friend.	Success
My contact	A registered user will own ecosystem contacts and can consult to contact them.	Success
Add to contacts	A registered user or tutor can add to his contact list another user. He interacts with him through comments, forums...	Success
Remove from contacts	A registered user or tutor can remove from his contact list another users situated in it.	Success

View contact profile	All registered users or tutors can see the profile of users registered in the ecosystem.	Success
View news	All kind of users can see related news to the ecosystem and advances in Active and Healthy Aging, but not all the published news.	Success
Comment news	A registered user or tutor can comment the news and recommend them.	Success
Search	User will be able to search any type of content for which he has privileged access.	Success
Download	Users can download useful material about Active and Healthy Aging.	Success
Link social network – Twitter	Visitors to the website can follow all the news via ecosystem's Twitter.	Success
Link social network – Facebook	Website visitors can follow all the news via ecosystem's Facebook.	Success
Log out	All registered user can exit of the system by using the exit option in the main menu.	Success
See private message	All registered user can see the private message sent by another registered user through the social network in chronological order by date of creation from the most recent to oldest.	Success
Send private message	All registered users can send private messages to their friends using the social network	Success
Reply private message	A registered user can reply the private message that he receives through the social network.	Success
Delete private message	A registered user can delete the private message that he receives through the social network.	Success
Block contact	A registered user can block another user of the ecosystem. To block prevents the blocked user from seeing the profile and get in touch with the user who blocked him	Success
Unblock contact	A registered user can unblock a user who has previously blocked.	Success
See news feed	A registered user can see the latest news of his friends in an easy and simple way.	Success
See notifications	A registered user may see his latest notifications, friend requests, sending comments, private messages...	Success
Invite contacts via e-mail	A registered user may invite his friends to join the social network via email.	Success
Comment	A registered user can comment on a post from another user whereas the two users are friends.	Success
Publish	A registered user can write a post in another user profile and share all the information with his friends.	Success
See FAQs and help	A user will have the support of a section of FAQs.	Success

## 8.2 Trivia Anti-aging

Requirement	Result (Success / Fail)
User can install the game	Success
User can open the game	Success
User can read the instructions (How to Play)	Success
User can choose a level	Success
User can play the chosen level	Success
User can choose an answer in each question before time is over (40 seconds)	Success
User will get 10 points when a question is answered correctly	Success
User can replay a level	Success
User can pause a level	Success
User can quit the game	Success
User can finish a level	Success

## 8.3 Trivia English

Requirement	Result (Success / Fail)
User can install the game	Success
User can open the game	Success
User can read the instructions (How to Play)	Success
User can choose a level	Success
User can play the chosen level	Success
User can choose an answer in each question before time is over (40 seconds)	Success
User will get 10 points when a question is answered correctly	Success
User can replay a level	Success
User can pause a level	Success
User can quit the game	Success
User can finish a level	Success

## 8.4 Trivial IT

Requirement	Result (Success / Fail)
User can install the game	Success
User can open the game	Success
User can read the instructions (How to Play)	Success
User can choose a level	Success
User can play the chosen level	Success
User can choose an answer in each question before time is over (40 seconds)	Success
User will get 10 points when a question is answered correctly	Success
User can replay a level	Success
User can pause a level	Success
User can quit the game	Success
User can finish a level	Success



## 8.5 Health Repository

Test	Description	Result (Success / Fail)
Welcome page	When the application starts, it will show the user a welcome message.	Success
Show symptom list	The application will show the user a list of all the possible symptoms that are registered in the database. This list allows the user to easily find the searched symptom.	Success
Symptom questions	When the user select a symptom, one or more questions are asked to him in order to determine a possible sickness.	Success
Question navigation	The user can answer yes or no to each of the questions displayed by the application.	Success
Final result	The flow of questions always finish showing a result. That result will be a text with a medical recommendation and optionally, more information about the sickness related to that symptom.	Success
Sickness information	If the final result relates the symptom to a sickness, some information will be provided: a short description, the frequent symptoms and the treatment.	Success
Next search	If the final result is displayed to the user without related sickness, or if the sickness information has already been provided, the user can perform a new search in the symptom list.	Success
Back to the symptom list	The user can return to the list of symptoms at any point in the application.	Success
About information.	Some information related to the SEACW project will be accessible at any point in the application.	Success

## 8.6 Elderly Adventures

Requirement	Result (Success / Fail)
User can install the game	Success
User can open the game	Success
User can read the instructions (How to Play)	Success
User can modify settings (music)	Success
User can choose level	Success
User can play the chosen level	Success
User can pause a level	Success
User can quit the game	Success
User can control the main character	Success
User can jump	Success
User can dodge the enemies	Success
User can reach the goal (the finish line)	Success
User will win a level if his main character do not die	Success
User will lose a level if he takes more than five minutes to finish the game	Success
User will lose a level if his main character die	Success
User can win the game by finishing all levels	Success
User has a maximum of five minutes to finish a level successfully	Success

## 8.7 Healthy Food

Requirement	Result (Success / Fail)
User can install the game	Success
User can open the game	Success
User can read the instructions (How to Play)	Success
User can modify settings (music)	Success
User can choose level	Success
User can play the chosen level	Success
User can pause a level	Success
User can quit the game	Success
User can control the main character	Success
User can destroy enemies by throwing a ball	Success
User can throw a ball	Success
User can jump	Success
User can move right	Success
User can move left	Success
User can collect items	Success
User will get 10 points when he destroys an enemy	Success
User will get 10 points when he collect an item	Success
User can dodge some enemies	Success
User can reach the goal (the finish line)	Success
User will win a level if his main character do not die	Success
User will lose a level if he takes more than five minutes to finish the game	Success
User will lose a level if his main character die	Success
User can win the game by finishing all levels	Success
User has a maximum of five minutes to finish a level successfully	Success

## 9 ANNEX I:

### 9.1 1thread-1000iters

sampler_label	aggregate_report_count	average	aggregate_report_min	aggregate_report_max	aggregate_report_stddev	aggregate_report_error%	aggregate_report_rate	aggregate_report_bandwidth	average_bytes
Principal	1000	354	263	1099	11.636.520.270.252.600	0.0	0.16209738454249067	0.8512662872919217	5.377.611
Aprender	1338	817	620	1774	17.308.029.517.694.900	0.0	0.21666531993031085	12.328.477.652.968.000	5.826.664.424.514.200
Aprender / Protocolo de Enfermería	211	333	220	924	9.190.137.592.093.690	0.0	0.034168059568368346	0.19732187237160986	591.363.981.042.654
Iniciar Sesión	1000	941	251	984	10.265.483.406.055.400	0.0	0.1620591626143773	31.048.340.478.217.900	19.618.453
Iniciar Sesión - Envío	1000	1963	1515	3034	30.918.810.026.260.600	0.0	0.16200541972931162	32.732.653.983.518.800	20.689.578
Aprender / Motivación	222	325	225	990	9.813.513.844.331.790	0.0	0.03650543051166637	0.1989707190065195	5.581.252.252.252.250
Interactuar	317	855	690	1516	12.103.323.812.599.600	0.0	0.051469152036790214	0.7736835868831758	15.392.753.943.217.600
Interactuar / Fotos	49	444	355	929	9.104.432.741.446.520	0.0	0.007966412305083026	0.05811181507597308	7.469.673.469.387.750
Aprender / Gestión para la Seguridad del Paciente	231	336	224	993	10.486.354.198.188.100	0.0	0.03800080245850386	0.2095565677004859	5.646.878.787.878.780
Aprender / Prevención de Infecciones	233	342	226	1062	1.175.330.678.160.210	0.0	0.03793602618334758	0.22007019635271974	594.031.330.472.103
Interactuar / Vídeos	62	432	328	1039	1.393.385.565.831.520	0.0	0.010181561881151942	0.06999936052196269	7.040.112.903.225.800
Aprender / Atención al Paciente	227	336	224	969	10.587.209.996.303.600	0.0	0.03699325956736138	0.21646407348466565	59.918.810.572.687.200
Interactuar / Perfil	53	707	594	907	733.716.988.652.658	0.0	0.00864830148174776	0.13156152140593316	15.577.509.433.962.200
Ver	345	518	372	1262	15.365.373.407.014.400	0.0	0.05682162555306382	0.44294843987168525	7.982.510.144.927.530
Ver / Vídeos	71	412	315	924	8.386.011.770.442.800	0.0	0.01182951042987941	0.07562188314268105	6.546.070.422.535.210
Ver / Vídeos / ¿Trabajo Jubilado?	9	453	294	943	20.975.723.769.498.900	0.0	0.001596509250263291	0.011689025409154277	7.497.333.333.333.330
Interactuar / Amigos	55	1841	1482	2790	3.341.810.643.972.110	0.0	0.009024044649004042	0.06970513693126368	7.909.763.636.363.630
Aprender / Antienviejamiento	214	336	221	972	10.736.004.972.872.100	0.0	0.03511140323215233	0.19801026238636783	556.485.046.728.972
Ver / Juegos	66	350	271	767	5.82.268.626.926.322	0.0	0.010890603889853666	0.06510497237540572	6.121.560.806.060.600
Ver / Juegos / Trivial ICT	24	309	248	372	3.180.144.017.528.500	0.0	0.0039775144479069074	0.019870092927995884	5115.5
Ver / Buscar Trabajo	69	395	291	1051	14.347.975.112.679.400	0.0	0.012321802626151152	0.06809393376673935	5.658.927.536.231.880
Ver / Buscar Trabajo / Demanda Trabajos	13	337	288	376	2.775.121.938.789.020	0.0	0.0026409977933447666	0.014382843826931759	5.576.692.307.692.300
Ver / Buscar Trabajo / Demanda Trabajos / Auxiliar Enfermería	13	374	316	431	31.799.482.709.498.700	0.0	0.002640730092805412	0.021271155571808457	8.422.846.153.846.150
Ver / Eventos	70	343	252	980	114.467.979.659.584	0.0	0.011720689276992538	0.057002970566837646	4.980.171.428.571.420
Interactuar / Grupos	43	450	332	1097	15.104.535.330.848.200	0.0	0.007382302492076472	0.05127675687640017	7.112.604.651.162.790
Ver / Vídeos / Mantenerme Activo	20	347	276	474	47.877.212.742.598.000	0.0	0.00336824460270012	0.024642948498958876	7491.85
Ver / Noticias	69	386	301	952	10.175.274.280.296.700	0.0	0.01211753801131181	0.07652454378786512	6.466.753.623.188.400
Ver / Noticias / Cat 1 Noticias	21	353	289	393	25.592.569.074.571.500	0.0	0.003717952576629658	0.021887924311337806	6.028.380.952.380.950
Ver / Noticias / Cat 1 Noticias / Descubren un inhibidor del apetito que transforma la grasa "mala" en	11	358	288	470	51.663.405.211.198.900	1.0	0.0019473438230253935	0.014076578131072851	7.402.090.909.909.900
Interactuar / Eventos	55	436	353	787	740.005.450.058.108	0.0	0.009572125969177754	0.079228207913102491	8.475.618.181.818.180
Ver / Juegos / Antienviejamiento	18	372	255	778	15.264.128.246.025.400	0.0	0.0031442184896466998	0.015700281106233886	5.113.222.222.222.220
Ver / Vídeos / Mantenerse Joven	9	361	302	397	2.662.125.763.416.690	0.0	0.0017485278852312925	0.01279388984896022	7.492.555.555.555.550
Ver / Vídeos / ¿Cómo Envejecer?	15	377	314	413	2.100.370.337.715.630	0.0	0.0031802940499878617	0.02467129673309594	7.943.733.333.333.330
Ver / Vídeos / Consejos de Salud	8	354	306	389	25.440.801.382.818.100	0.0	0.00435644901484351	0.03524618259348123	8284.75
Ver / Noticias / Más Visitadas	25	395	315	949	12.096.408.723.253.300	0.0	0.004558868394040136	0.028838048046643423	6477.52
Ver / Noticias / Más Visitadas / Las canas indican buena salud, según científicos	9	375	353	407	17.732.581.437.692.800	0.0	0.0021960421464408742	0.015562447111984973	7.256.666.666.666.660
Ver / Buscar Trabajo / Ofertas de Trabajos	19	384	289	971	1.401.192.408.702.310	0.0	0.003998542846806774	0.02261778556330314	5.792.263.157.894.730
Ver / Buscar Trabajo / Ofertas de Trabajos / Cuidador	12	364	317	410	27.442.237.315.658.200	0.0	0.0028886254355505537	0.025198132247892205	8.932.583.333.333.330
Ver / Juegos / Trivial Inglés	24	308	247	425	3.514.049.183.871.320	0.0	0.004200792269422013	0.020955929827427954	5.108.291.666.666.660
Ver / Buscar Trabajo / Enviar Anuncio	24	393	295	935	16.355.375.751.483.700	0.0	0.0045669112437925685	0.03997924202070219	8.964.208.333.333.330
Ver / Buscar Trabajo / Enviar Currículum	13	405	314	793	1.150.555.307.142.120	0.0	0.002545357786259258	0.02324454537423318	9.351.307.692.307.690
Ver / Noticias / Cat 2 Noticias	23	378	290	808	9.566.936.604.391.130	0.0	0.004431810145877848	0.025681052703760664	5.933.782.608.695.650
Ver / Noticias / Cat 2 Noticias / La huella del deporte en la vejez	23	440	308	1226	20.867.982.729.857.000	0.0	0.004431417361869349	0.0340919218416469855	7.877.869.565.217.390
Ver / Vídeos / Recetas con Salud	10	351	289	398	3.864.052.277.079.050	0.0	0.002235000964402916	0.016353921119216963	7492.8
Ver / Noticias / Más Visitadas / La huella del deporte en la vejez	8	446	317	889	17.275.700.962.623.700	0.0	0.0016930958935652198	0.013028281963216645	7.879.625
Ver / Buscar Trabajo / Ofertas de Trabajos / Auxiliar Enfermería	7	402	374	469	30.449.020.636.990.100	0.0	0.0017357632696622302	0.01393768506026074	822.242.857.142.857
Ver / Noticias / Más Visitadas / Descubren un inhibidor del apetito que transforma la grasa "mala" en	8	341	307	378	28.634.550.808.420.200	0.0	0.0023067398902799174	0.01667374217078064	7401.75
Ver / Noticias / Cat 1 Noticias / Las canas indican buena salud, según científicos	10	382	298	754	12.672.209.752.051.900	0.0	0.004940850606958793	0.03501104110269155	7256.1
Total	7376	698	220	3034	5.737.310.324.469.390	0.0014913232104121475	11.941.957.831.981.300	1.207.226.834.066.360	10.351.756.100.867.600

## 9.2 10thread-1000iters

sampler_label	aggregate_report_count	average	aggregate_report_min	aggregate_report_max	aggregate_report_stddev	aggregate_report_error	aggregate_report_rate	aggregate_report_bandwidth	average_bytes	
Principal	1122	366	263	3335	1,53134E+16	0.0	1,29612E+16	6,80688E+15	5,37776E+15	
Aprender	1517	787	646	4802	2,47388E+16	0.0013183915622940012	1,75052E+15	9,96163E+15	5,82723E+15	
Aprender / Atención al Paciente	246	329	225	964	9,04374E+15	0.0040650406504065045	0.3099036904994363	1,82239E+15	6,02164E+15	
Iniciar Sesión	1120	322	253	782	5,71072E+15	0.0	1,32591E+16	2,5403E+15	1,96187E+16	
Aprender / Gestión para la Seguridad del Paciente	238	325	221	962	6,96483E+15	0.0	0.31756240167907784	1,75442E+14	5,65725E+15	
Aprender / Motivación	270	328	226	692	6,34553E+15	0.0	0.32248085717800584	1,76516E+15	5,60505E+15	
Aprender / Antienviejimiento	236	326	223	965	8,8454E+15	0.0	0.2946291355755942	1,60183E+16	5,56723E+15	
Aprender / Prevención de Infecciones	263	334	223	884	8,10484E+15	0.0	0.3660113254759191	2,10258E+16	5,88244E+16	
Iniciar Sesión - Envío	1120	1972	1599	6214	3,05402E+15	0.0	1,31329E+15	2,65347E+14	2,06897E+16	
Interactuar	357	1170	672	2176	2,72857E+16	0.0056022408963585435	0.4392051494035668	6,60176E+15	1,53919E+16	
Aprender / Protocolo de Enfermería	262	325	225	806	7,82642E+15	0.0	0.3050278367006699	1,73997E+15	5,84122E+15	
Interactuar / Eventos	58	453	381	920	8,09543E+14	0.0	0.09355049952740868	0.7743165647087192	8,47564E+15	
Interactuar / Videos	53	421	364	539	4,15587E+15	0.0	0.06967202878374985	0.47895411768262947	7,0394E+15	
Ver	365	493	380	1357	1,14913E+16	0.0027397260273972603	0.42810679446534156	3,33742E+14	7,98286E+15	
Interactuar / Perfil	67	755	643	1114	8,92956E+15	0.0	0.10404227532691791	1,58278E+15	1,55779E+16	
Ver / Buscar Trabajo	81	371	287	856	8,02335E+15	0.012345679012345678	0.10971016200533923	0.6062893805303742	5,65891E+15	
Ver / Eventos	62	325	264	633	5,89761E+15	0.0	0.08757247681801168	0.4258564800101697	4,97961E+15	
Ver / Buscar Trabajo / Demanda Trabajos	25	357	282	673	7,54447E+15	0.0	0.03842967139556583	0.2092825862477115	5576.56	
Ver / Buscar Trabajo / Demanda Trabajos / Auxiliar Enfermería	25	387	325	566	5,22389E+16	0.0	0.03824436928151068	0.31455396165772515	8422.24	
Ver / Buscar Trabajo / Enviar Curriculum	13	377	324	462	4,06618E+16	0.0	0.02135863948752409	0.1951125836478256	9,35431E+15	
Ver / Juegos	74	356	288	763	6,61084E+15	0.0	0.10192542639951187	0.609368134668281	6,12205E+15	
Ver / Juegos / Trivial Ingles	36	342	257	850	1,13853E+16	0.0	0.05477659517813806	0.2732455203966738	5,10808E+15	
Ver / Juegos / Trivial ICT	17	330	265	481	5,74185E+15	0.0	0.02336670189998777	0.11671270279204599	5,11471E+15	
Ver / Noticias	81	366	298	698	5,75831E+15	0.0	0.11687451572827974	0.7381691494384973	6,46749E+15	
Ver / Noticias / Más Visitadas	30	366	299	509	3,92822E+16	0.0	0.05078152771147967	0.32122952975458985	6,47753E+15	
Interactuar / Grupos	61	447	370	875	7,34031E+15	0.0	0.07568839213039248	0.5256431846015068	7,11151E+15	
Ver / Noticias / Más Visitadas / Descubren un inhibidor del apetito que transforma la grasa "mala" en "buena"	14	348	308	449	3,58697E+15	0.0	0.02590860554333121	8	7402.0	
Ver / Buscar Trabajo / Enviar Anuncio	23	360	306	567	5,00659E+15	0.0	0.03141278309063543	0.27500856595864986	8,96478E+15	
Interactuar / Fotos	64	456	380	778	6,23164E+14	0.0	0.09093854259618171	0.6633479353043314	746953125	
Ver / Videos	67	408	327	906	8,64848E+15	0.0	0.07988429891989274	0.5105897741539717	6,54501E+15	
Ver / Videos / ¿Cómo Envejecer?	11	362	314	465	4,07924E+15	0.0	0.01633108756135292	0.12673266117131363	7,94645E+15	
Ver / Videos / Mantenerme Activo	14	351	316	391	2,37298E+15	0.0	0.02343735613230052	0.17147394916939684	7,49186E+15	
Ver / Juegos / Antienviejimiento	21	300	255	371	3,69343E+16	0.0	0.04179162694803708	0.2086918841406746	5,11348E+15	
Ver / Videos / Recetas con Salud	12	355	314	442	3,21066E+16	0.0	0.01979221473233503	0.14481754773634792	7492.5	
Ver / Videos / Consejos de Salud	15	370	307	566	6,71177E+15	0.0	0.03000972315030069	0.24278569381479598	8284.4	
Ver / Buscar Trabajo / Ofertas de Trabajos	20	331	291	405	2,81593E+16	0.0	0.03234168341696353	0.18299739336138435	5794.05	
Ver / Buscar Trabajo / Ofertas de Trabajos / Auxiliar Enfermería	10	359	317	422	3,28846E+15	0.0	0.01608454034404832	0.1291459787643856	8221.9	
Interactuar / Amigos	53	1819	1592	2410	1,57612E+15	0.0	0.08598759182825844	0.6642110516769202	7,90989E+14	
Ver / Noticias / Cat 1 Noticias	29	363	288	491	4,13194E+15	0.0	0.05013692567287212	0.2951656171769107	6,02848E+15	
Ver / Noticias / Cat 1 Noticias / Las canas indican buena salud, según científicos	16	359	319	411	2,42692E+16	0.0	0.02764621825652580	4	0.19592637293711695	7257.0
Ver / Noticias / Cat 1 Noticias / Descubren un inhibidor del apetito que transforma la grasa "mala" en "buena"	13	350	319	429	3,15921E+16	1.0	0.0273970293190363	0.1980336803009368	7,40177E+16	
Ver / Noticias / Más Visitadas / La huella del deporte en la vejez	7	370	330	405	2,91099E+16	0.0	0.01337396471183882	0.10278436690994545	7,86986E+15	
Ver / Noticias / Más Visitadas / Las canas indican buena salud, según científicos	9	338	294	387	3,20547E+15	0.0	0.01670332117702736	5	0.11837318931358629	7,25689E+15
Ver / Videos / Mantenerse Joven	9	349	308	385	2,34321E+16	0.0	0.01145100813403277	0.08378395502234855	7,49233E+15	
Ver / Buscar Trabajo / Ofertas de Trabajos / Cuidador	10	364	310	512	5,21895E+15	0.0	0.02130874020597028	0.18587713966387592	8932.4	
Ver / Videos / ¿Trabajo Jubilado?	6	364	314	402	3,48349E+15	0.0	0.01544910549679173	0.1131174251104611	7,49767E+15	
Ver / Noticias / Cat 2 Noticias	21	372	283	990	1,42755E+16	0.0	0.03875432525951557	0.22457288062283737	5,93386E+15	
Ver / Noticias / Cat 2 Noticias / La huella del deporte en la vejez	20	357	307	457	3,89164E+15	0.0	0.04337359849059877	0.33374798041682024	7879.4	
Total	8263	703	221	6214	5,8857E+15	0.0024204284158296017	9,52002E+15	9,62345E+15	1,03512E+16	

### 9.3 20thread-1000iters

sampler_label	aggregate_report_count	average	aggregate_report_min	aggregate_report_max	aggregate_report_stddev	aggregate_report_error	aggregate_report_rate	aggregate_report_bandwidth	average_bytes	
Principal	1124	542	296	3698	2,55204E+15	0.0	1,60205E+16	8,41377E+14	5,37794E+15	
Aprender	1496	1189	650	4634	2,88905E+15	0.002005347593582888	2,11394E+15	1,20276E+16	5,82619E+15	
Aprender / Motivación	261	494	235	1521	1,24161E+16	0.00388314176245210726	0.38439446825431894	2,09653E+16	5,585E+16	
Aprender / Prevención de Infecciones	236	489	251	835	9,25394E+15	0.0	0.3352306059861391	1,94748E+16	5,9488E+15	
Iniciar Sesión	1123	498	275	2400	1,22282E+16	0.0	1,5814E+15	3,02974E+16	1,96185E+15	
Aprender / Antienvjecimiento	245	484	248	1058	9,3858E+15	0.0	0.3629737177397849	1,98743E+15	5,60683E+15	
Aprender / Protocolo de Enfermería	258	480	278	899	9,01435E+15	0.007751937984496124	0.3723421911327717	2,13223E+15	5,86397E+15	
Aprender / Atención al Paciente	248	491	258	941	1,01303E+16	0.0	0.39712468914584564	2,33426E+15	6,01896E+16	
Aprender / Gestión para la Seguridad del Paciente	248	492	258	1288	1,19462E+16	0.004032258064516129	0.35116088407584506	1,93085E+15	5,63044E+15	
Iniciar Sesión - Envío	1122	2938	1733	4546	3,25433E+15	0.0	1,56884E+15	3,16986E+16	2,069E+16	
Interactuar	355	1893	936	3304	4,63957E+16	0.008450704225352112	0.4994028267606763	7,50652E+15	1,53917E+15	
Ver	379	729	381	1238	1,26831E+16	0.002638522427440633	0.5749227494959945	4,48197E+15	7,98288E+15	
Interactuar / Fotos	58	691	471	998	1,13512E+16	0.017241379310344827	0.0816209354885013	0.5954155992032109	7,46997E+16	
Ver / Eventos	73	483	273	688	8,76886E+15	0.0	0.12452705307581821	0.6057300249224692	4,98099E+15	
Ver / Vídeos	82	574	379	826	1,035E+16	0.012195121951219513	0.13443967347554428	0.8593616789957684	6,54559E+15	
Ver / Juegos	77	521	327	945	1,11697E+16	0.0	0.11646074289854152	0.6962682792320263	6,12205E+15	
Interactuar / Vídeos	68	641	414	884	1,12723E+15	0.0	0.13550729547365778	0.9316457392172065	7040.25	
Ver / Juegos / Trivial ICT	32	453	273	658	1,02021E+16	0.0	0.05271125269939266	0.263308536052026	51151875	
Ver / Noticias	75	545	354	808	1,14841E+16	0.0	0.14071109760284575	0.888645546634472	6466.96	
Ver / Vídeos / Consejos de Salud	23	584	432	829	9,12105E+15	0.0	0.04596819001251134	0.3718813299946437	8,28413E+15	
Interactuar / Amigos	48	2693	2285	3620	2,51187E+16	0.0	0.09710387687228413	0.7500776641358969	7909875	
Ver / Vídeos / ¿Cómo Envejecer?	12	561	359	744	1,20606E+16	0.0	0.02347849565452176	0.18218762350666984	7946.0	
Ver / Noticias / Más Visitadas	24	563	334	804	9,48257E+15	0.0	0.04878118184608317	0.30857630659887436	6,47754E+15	
Interactuar / Perfil	62	1126	679	1539	1,82308E+16	0.0	0.09419056878949927	1,43287E+16	1,55776E+16	
Ver / Noticias / Más Visitadas / La huella del deporte en la vejez	8	599	485	659	5,56898E+15	0.0	0.01654331556994823	0.1273039636491659	7879875	
Ver / Noticias / Cat 2 Noticias	22	527	395	726	1,05611E+16	0.0	0.04200958582367431	0.24344786216559414	5,93414E+15	
Ver / Buscar Trabajo	72	543	344	841	9,32644E+15	0.0	0.12250606575172786	0.6769586694097249	5,65854E+15	
Ver / Noticias / Cat 2 Noticias / La huella del deporte en la vejez	22	510	381	629	7,80093E+15	0.0	0.041961669921875	0.322902575135231	7,87986E+15	
Ver / Buscar Trabajo / Enviar Anuncio	17	530	395	668	9,17051E+15	0.0	0.04170100867380980	0.36500120580306333	8,96288E+15	
Interactuar / Grupos	49	657	380	936	1,25652E+16	0.0	0.07290050271591567	0.5063066024981068	7,11186E+15	
Ver / Juegos / Antienvjecimiento	27	424	292	585	6,04606E+16	0.0	0.05657590076167925	0.28251526370655966	5,11341E+15	
Ver / Vídeos / Mantenerse Joven	8	566	429	633	6,23538E+16	0.0	0.02046281778116551	0.14971928371185284	7492.25	
Ver / Noticias / Más Visitadas / Las canas indican buena salud, según científicos	9	570	480	645	5,85088E+16	0.0	0.01862351529197533	3	0.1319832524158838	7257.0
Interactuar / Eventos	69	673	429	950	1,04985E+16	0.0	0.13003656100410838	1,07633E+16	8,47577E+15	
Ver / Vídeos / Recetas con Salud	12	523	334	620	7,61469E+15	0.0	0.02157031924072476	0.15782950628684927	7,49258E+15	
Ver / Buscar Trabajo / Enviar Curriculum	14	549	384	715	1,04145E+16	0.0	0.02400643372423809	0.21924290888529555	9,35186E+15	
Ver / Buscar Trabajo / Ofertas de Trabajos	25	551	331	732	8,29116E+15	0.0	0.05369473469431588	0.30384717740203393	5794.6	
Ver / Vídeos / Mantenerme Activo	13	475	366	595	6,60357E+14	0.0	0.02435647385707246	0.17820368721884666	7,49208E+15	
Ver / Buscar Trabajo / Ofertas de Trabajos / Cuidador	15	583	342	812	1,11295E+16	0.0	0.03218994643592913	0.2807797417668847	8,93193E+15	
Ver / Noticias / Cat 1 Noticias	29	508	358	729	9,07083E+15	0.0	0.05631231977630416	0.33152133678650836	6,02848E+15	
Ver / Noticias / Cat 1 Noticias / Descubren un inhibidor del	14	534	413	719	8,66691E+15	1.0	0.02967120070871782	0.21448908642902859	7,40236E+15	
Ver / Buscar Trabajo / Demanda Trabajos	16	531	371	708	8,35587E+15	0.0	0.03453463500128426	0.18807717357755077	5576.75	
Ver / Buscar Trabajo / Ofertas de Trabajos / Auxiliar Enfermería	10	583	376	708	9,53764E+15	0.0	0.02492839319056011	0.20016238837053066	8222.2	
Ver / Buscar Trabajo / Demanda Trabajos / Auxiliar Enfermería	16	576	470	738	8,01104E+15	0.0	0.03450462146273717	0.28381651709272687	8422875	
Ver / Noticias / Cat 1 Noticias / Las canas indican buena salud, según científicos	15	518	415	641	7,44811E+15	0.0	0.02994555897378565	7	0.21222940132339407	7,25727E+15
Ver / Vídeos / ¿Trabajo Jubilado?	14	512	310	702	9,12803E+15	0.0	0.02672337111508992	0.1956718935512688	7,49786E+15	
Ver / Noticias / Más Visitadas / Descubren un inhibidor del	7	509	367	609	8,44543E+15	0.0	0.01852518366396375	0.13392508614210405	7,40286E+15	
Ver / Juegos / Trivial Ingles	18	478	314	682	9,35272E+15	0.0	0.03793514775740051	0.18923530250119072	5,10811E+15	
Total	8250	1055	235	4634	8,70756E+15	0.00327272727272726	1,14475E+16	1,15877E+15	1,03655E+16	

## 9.4 50thread-1000iters

sampler_label	aggregate_report_count	average	aggregate_report_min	aggregate_report_max	aggregate_report_stddev	aggregate_report_error	aggregate_report_rate	aggregate_report_bandwidth	average_bytes	
Principal	1146	1451	320	6752	7,01444E+14	0.0017452006980802793	1,71712E+15	9,01837E+15	5,37808E+15	
Aprender	1534	3687	740	10321	9,54214E+15	0.00651890482398957	2,29624E+15	1,30673E+16	5,82733E+15	
Aprender / Prevención de Infecciones	269	1463	388	7649	5,00915E+15	0.0	0.4046299290769474	2,3313E+16	5,89985E+15	
Aprender / Gestión para la Seguridad del Paciente	242	1405	310	6929	4,87596E+15	0.0	0.3911401898161318	2,16529E+16	5,66869E+15	
Iniciar Sesión	1136	1526	289	11070	4,65763E+15	0.0	1,73389E+15	3,32187E+15	1,96189E+16	
Aprender / Motivación	264	1384	279	2221	3,57826E+14	0.003787878787878788	0.4127128050400988	2,25873E+15	5,60422E+15	
Aprender / Antienvejecimiento	257	1432	273	4231	3,5727E+14	0.0	0.39978719498725973	2,18026E+15	5,58443E+15	
Aprender / Atención al Paciente	238	1442	283	3024	3,57808E+16	0.0	0.373771892353695	2,19384E+16	6,01032E+15	
Aprender / Protocolo de Enfermería	263	1399	288	2362	3,52996E+15	0.0038022813688212928	0.4036726537102582	2,29461E+16	5,82075E+15	
Iniciar Sesión - Envío	1129	8203	1872	15450	1,59955E+16	0.0	1,72171E+16	3,47874E+15	2,06901E+16	
Ver	363	2177	459	7214	6,09409E+15	0.005509641873278237	0.5605658162950151	4,3701E+16	7,98297E+15	
Ver / Noticias	83	1729	424	3511	4,86839E+16	0.0	0.13927997288235708	0.8795915719674722	6,46684E+15	
Ver / Noticias / Cat 2 Noticias	30	1802	807	6055	8,7564E+15	0.06666666666666667	0.05244993653557679	0.29774217228405486	5,81293E+15	
Ver / Eventos	55	1362	389	2122	3,91268E+15	0.01818181818181818	0.0902744721641802	0.4391247632268771	4,98091E+15	
Interactuar	346	7502	1819	20307	2,8797E+16	0.017341040462427744	0.5754017418375272	8,64905E+15	1,53921E+16	
Ver / Noticias / Cat 2 Noticias / La huella del deporte en la vejez	30	1676	405	2172	3,80255E+16	0.0	0.05236589095326868	0.4029599628944024	7,87977E+15	
Ver / Buscar Trabajo	77	1742	360	8496	9,1725E+15	0.0	0.11990445016802195	0.6626314569325016	5,65896E+15	
Ver / Juegos	82	1609	384	4029	4,76204E+16	0.012195121951219513	0.13758712452977802	0.8225815208956251	6,12211E+15	
Ver / Vídeos	65	1828	438	2687	4,7964E+15	0.03076923076923077	0.11204230717518934	0.7162442519064429	6,54605E+15	
Interactuar / Vídeos	62	1996	469	2627	4,58013E+15	0.0	0.10761385372153007	0.7398571095222639	7,04011E+15	
Ver / Buscar Trabajo / Demanda Trabajos	28	1610	445	2371	4,25354E+16	0.0	0.04425848854100311	0.24103062954143462	5,57668E+15	
Ver / Juegos / Antienvejecimiento	26	1481	830	2095	2,73437E+16	0.0	0.04951730153560770	0.24727776849328376	5,11362E+15	
Ver / Vídeos / Mantenerse Joven	10	1597	564	1982	3,81597E+15	0.0	0.01774969381778164	0.129879571100836	7492.9	
Interactuar / Eventos	61	2209	623	2862	3,82942E+15	0.01639344262295082	0.11000564455192537	0.9105369233495095	8,47584E+14	
Ver / Noticias / Cat 1 Noticias	31	1706	404	2222	4,2284E+14	0.0	0.05512296867415035	0.3244534741028737	6,02726E+15	
Ver / Juegos / Trivial ICT	21	1472	474	2024	3,30501E+16	0.0	0.03625352608700156	0.18110409843954464	5,11538E+15	
Ver / Buscar Trabajo / Enviar Curriculum	12	1570	368	2189	5,44454E+15	0.0	0.02021382861705406	0.18463707171616183	9,35342E+15	
Interactuar / Fotos	63	2198	1033	2961	3,46893E+15	0.015873015873015872	0.11799785730874982	0.8607577142269829	7,46976E+15	
Ver / Buscar Trabajo / Demanda Trabajos / Auxiliar Enfermería	28	1822	484	2570	4,56043E+16	0.0	0.04434596823878403	0.36473909277255745	8422.25	
Interactuar / Grupos	51	2115	579	2746	4,59471E+16	0.0	0.09183067144426238	0.6378700798566721	7,11286E+15	
Ver / Noticias / Cat 1 Noticias / Descubren un inhibidor del apetito que transforma la grasa "mala" en "buena"	18	1699	324	2339	5,23915E+14	1.0	6	0.2319432548609279	7,40244E+15	
Interactuar / Perfil	54	3674	924	5088	8,76378E+15	0.0	0.09305018506647919	1,41545E+15	1,55768E+15	
Ver / Noticias / Cat 1 Noticias / Las canas indican buena salud, según científicos	13	1670	869	2365	4,58607E+15	0.0	0.02579446966570367	3	0.18281094055069208	7,25731E+15
Ver / Noticias / Más Visitadas	22	1635	467	2384	5,14422E+15	0.0	0.03743750489240121	0.23680285409923663	6,47709E+15	
Ver / Noticias / Más Visitadas / Descubren un inhibidor del apetito que transforma la grasa "mala" en "buena"	9	1599	362	2168	5,93773E+15	0.0	0.01529675708749745	1	0.1105180740745462	7,39833E+15
Interactuar / Amigos	51	8133	2911	12280	1,31248E+15	0.0196078431372549	0.0848670416347722	0.6555614953239923	7,90996E+16	
Ver / Juegos / Trivial Ingles	35	1358	363	2256	4,57275E+16	0.0	0.06072625126440730	0.30291962056503174	5108.0	
Ver / Vídeos / Mantenerme Activo	9	1424	887	1872	3,33149E+14	0.0	0.01852995676343422	0.1355706808472308	7,49189E+15	
Ver / Vídeos / ¿Cómo Envejecer?	12	1550	573	2247	5,18426E+15	0.0	0.02216275217056454	0.17198858410487416	7946.5	
Ver / Vídeos / Consejos de Salud	10	1717	1171	2078	2,58664E+15	0.0	0.02104545397148761	0.17027498647829584	8285.0	
Ver / Noticias / Más Visitadas / La huella del deporte en la vejez	6	1687	384	2142	5,98111E+15	0.0	0.01204463742630187	0.09268332816417645	7,87967E+15	
Ver / Buscar Trabajo / Ofertas de Trabajos	18	1707	454	2173	4,59027E+15	0.0	0.03773165665030929	0.213501565863751	5,79422E+15	
Ver / Buscar Trabajo / Ofertas de Trabajos / Cuidador	10	1802	617	2170	4,17697E+15	0.0	0.02116635058249797	0.18465367154162998	8933.3	
Ver / Buscar Trabajo / Enviar Anuncio	19	1580	467	2706	6,32492E+14	0.10526315789473684	0.0327079234083722	0.2862716614678283	8,96242E+15	
Ver / Vídeos / Recetas con Salud	14	1663	383	2383	5,59212E+15	0.0	0.02733835708190376	0.20002424753613057	7,49221E+15	
Ver / Vídeos / ¿Trabajo Jubilado?	10	1755	690	2248	3,93693E+16	0.0	0.02214662839729279	0.1620661717275185	7493.5	
Ver / Noticias / Más Visitadas / Las canas indican buena salud, según científicos	6	1795	1244	2221	2,89913E+14	0.0	0.01456399053340615	3	0.1032066379938103	7256.5
Ver / Buscar Trabajo / Ofertas de Trabajos / Auxiliar Enfermería	8	1605	441	2191	5,05408E+15	0.0	0.01940730102664622	0.1558175052642304	8221.5	
Total	8326	3160	273	20307	2,66532E+15	0.006125390343502282	1,24177E+16	1,25244E+16	1,0328E+15	

## 9.5 100thread-1000iters

sampler_label	aggregate_report_4	average	aggregate_report_3	aggregate_report_4	aggregate_report_5	aggregate_report_6	aggregate_report_7	aggregate_report_band	average_bytes
Principal	1163	2357	272	48115	2,80716E+16	0.00257953568357695	1,6738E+16	8,79115E+15	5,37828E+15
Aprender	1521	7245	643	51325	3,92476E+15	0.00197238658777120	2,19635E+16	1,24956E+16	5,82581E+14
Aprender / Atención al Paciente	238	2686	289	19032	1,43543E+16	0.0	0.3578290900015335	2,1268E+16	6,08628E+14
Aprender / Prevención de Infecciones	268	2635	260	4019	8,73968E+15	0.0	0.3948626539893622	2,2851E+16	5,32536E+15
Aprender / Gestión para la Seguridad del Paciente	242	2627	303	3812	8,61862E+15	0.0	0.3732304327776518	2,05292E+15	5,63241E+15
Aprender / Motivación	249	2824	271	48890	3,06708E+15	0.0	0.37563133217878236	2,05748E+15	5,60886E+15
Iniciar Sesión	1141	2302	264	3491	9,8504E+15	0.0	1,68499E+15	3,22831E+15	1,3619E+15
Aprender / Protocolo de Enfermería	263	2696	227	10810	1,01929E+16	0.0	0.3863397321769583	2,21836E+16	5,8798E+15
Aprender / Antienvejecimiento	258	2389	286	47815	3,23098E+15	0.00387596893224806	0.38544972122124815	2,03897E+16	5,5762E+15
Iniciar Sesión - Envío	1111	15407	1686	61324	5,7843E+15	900090009	1,63965E+15	3,31038E+15	2,06741E+16
Ver	359	4320	441	48440	2,73215E+16	0.0	0.5496128979309276	4,28515E+15	7,98379E+15
Ver / Noticias	72	3363	364	46352	5,16355E+15	0.0	0.11493427196322104	0.7258951678718801	6,46732E+15
Interactuar	352	14710	1562	61032	6,3209E+15	0.01136363636363636	0.5409899809270293	8,13186E+15	1,5392E+16
Ver / Buscar Trabajo	82	3491	368	19366	2,12414E+15	0.0	0.13331447421259107	0.736744735907282	5659.0
Ver / Noticias / Más Visitadas	22	3260	776	4378	1,12457E+16	0.0	0.0402495471925940	0.2546023270412324	6,47741E+15
Ver / Eventos	64	2628	303	4090	1,03827E+15	0.0	0.1002980733366974	0.4877440700723087	497965625
Ver / Juegos	69	3298	289	7441	1,15301E+16	0.0	0.11660526582620745	0.6971561095244533	6,12226E+15
Ver / Videos	66	3791	878	5146	1,05685E+16	0.0	0.12127894156560087	0.7752922868430724	6,54606E+15
Ver / Buscar Trabajo / Enviar Anuncio	25	3814	517	4903	1,0327E+16	0.0	0.04163772844539711	0.36452530074931255	8964.8
Ver / Noticias / Más Visitadas / Descubren un inhibidor del apetito que transforma la grasa "mala" en "buena"	11	3592	2501	4186	4,43555E+15	0.0	85	0.17122821588993134	7,40245E+15
Interactuar / Fotos	50	4231	619	5428	1,30945E+16	0.04	0.07931950212734905	0.5786171775107002	7469.84
Ver / Juegos / Trivial ICT	27	2379	274	3671	1,10054E+15	0.0	0.0459338348627599	0.2294581790503389	5,1153E+16
Ver / Noticias / Cat 1 Noticias	32	3026	367	4159	1,18608E+16	0.0	0.0519384399640326	0.30576125370061386	602828125
Ver / Buscar Trabajo / Ofertas de Trabajos	13	3433	319	4159	1,04666E+16	0.0	0.02211930130231640	0.1251588223639183	5,79415E+15
Ver / Buscar Trabajo / Demanda Trabajos	20	3088	571	4213	1,09338E+16	0.0	0.0346075247140985	0.18847751386896552	5576.85
Ver / Videos / Mantenerse Joven	13	3579	1705	5177	9,83099E+15	0.0	0.0256296010062575	0.18752619948997093	7,49238E+15
Ver / Buscar Trabajo / Enviar Curriculum	22	3263	378	4906	1,55116E+16	0.0	0.0362004054445409	0.3306741847298463	9,35377E+15
Ver / Noticias / Cat 2 Noticias	18	3097	459	4120	1,0991E+16	0.0	0.0306096420372417	0.17738712694498768	5,93422E+15
Ver / Videos / Recetas con Salud	15	3461	1504	4477	7,35964E+15	0.0	0.0290641348575857	0.21266015543312148	7,49253E+15
Ver / Videos / ¿Trabajo Jubilado?	8	3255	968	3969	9,1683E+15	0.0	0.01492732253810049	0.10927813275521057	7496375
Ver / Juegos / Trivial Ingles	20	2824	467	3871	9,41863E+15	0.0	0.03571084216873087	0.17814269918614992	5108.2
Ver / Buscar Trabajo / Ofertas de Trabajos / Cuidador	8	3292	443	4576	1,2464E+16	0.0	0.01369832520851419	0.11949581494761247	8932.75
Ver / Buscar Trabajo / Demanda Trabajos / Auxiliar	20	3426	507	4506	1,21161E+16	0.05	0.03480409644215124	0.2862891845182678	8423.15
Ver / Noticias / Cat 1 Noticias / Las canas indican buena salud, según científicos	17	3395	868	4169	8,19587E+15	0.0	0.03168266641320533	0.22452687412290265	7,25682E+15
Ver / Videos / Consejos de Salud	9	2912	1709	3736	6,90286E+15	0.0	0.01827181146738887	0.14782997812365676	8,28478E+15
Interactuar / Videos	51	4020	460	5417	1,14803E+15	0.0	0.08045268041513584	0.5531229615696476	7,04014E+15
Ver / Juegos / Antienvejecimiento	22	3065	889	3760	5,84748E+15	0.0	0.04151327198174925	0.20731021889287876	5,11368E+15
Ver / Buscar Trabajo / Ofertas de Trabajos / Auxiliar Enfermería	5	4219	3704	4420	2,67045E+14	0.0	0.0140439970339078	27	8222.4
Ver / Noticias / Cat 2 Noticias / La huella del deporte en la vejez	18	3147	487	4308	1,12507E+16	0.0	0.0307895992733654	56	0.2369355881583201
Interactuar / Eventos	56	4145	555	5868	1,34327E+15	0.0	0.0948877528716253	0.78544667827206	8,4763E+14
Interactuar / Perfil	75	8221	1059	46102	4,76687E+15	0.0	0.1331981224392661	2,02624E+15	15577.32
Interactuar / Grupos	58	3767	381	5127	1,33616E+15	0.0	0.09507994091929188	0.6604415474547264	7,11288E+15
Ver / Noticias / Más Visitadas / Las canas indican buena salud, según científicos	6	3065	829	4224	1,20459E+16	0.0	0.01129320356187640	5	0.08003212504681974
Interactuar / Amigos	57	15282	2626	18681	3,99708E+16	0.0	0.0998229456175099	0.7710778694499756	7,90984E+16
Ver / Videos / Mantenerme Activo	10	3023	1028	4738	1,03048E+16	0.0	0.02023054731722712	0.1480346532265457	7493.0
Ver / Noticias / Cat 1 Noticias / Descubren un inhibidor del apetito que transforma la grasa "mala" en "buena"	15	2642	386	4181	1,39075E+16	1.0	0.02673396496781231	0.19326950989067593	7,40287E+15
Ver / Videos / ¿Cómo Envejecer?	11	3714	1497	4952	1,02404E+16	0.0	0.02928398006559611	0.22727321886846702	7,94727E+15
Ver / Noticias / Más Visitadas / La huella del deporte en la vejez	5	2652	1054	3965	1,27288E+15	0.0	0.01463109165501056	2	0.11259339540671508
<b>Total</b>	<b>8257</b>	<b>6128</b>	<b>227</b>	<b>61324</b>	<b>5,79704E+15</b>	<b>6332808526099067</b>	<b>1,18835E+16</b>	<b>1,20333E+16</b>	<b>1,03691E+16</b>