Mercamita

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Overview

The main purpose is to create a centralized system for ITAM community members to buy and sell products and services within the same university's community. The motivation for the project comes from the disorganized nature of the campus bulletin boards and the lack of use of present systems and solutions available.
The university's community will be benefited with real-time updates on product's availability, and a centralized website accessible from every personal device, inside or outside campus.

Product Perspective

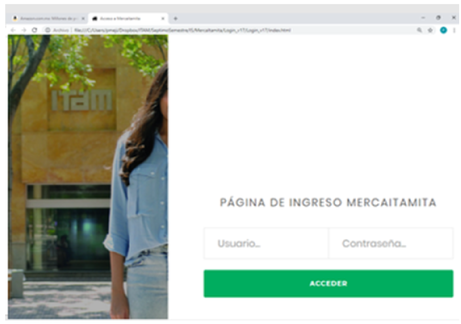


Figure 1: Mercamita's login page

There are existing alternatives to our product, including e-commerce websites and as physical bulletin boards around campus. Our goal, rather than managing transactions, is to provide a contact point for buyers and sellers.

System interfaces - Mercamita is an independent system from ITAM services or other systems, but depends on services provided by Amazon Web Services and their hosting platform.

User interfaces - The web page is designed to fit different screen sizes.

Software interfaces - The implementation of the systems is done by using of MongoDB, a non-relational database, to manage registration of users and products, as well as SailsJS, framework of NodeJS, to implement MVC design pattern. Dependencies are managed by making everything available through a Docker container.

Product functions

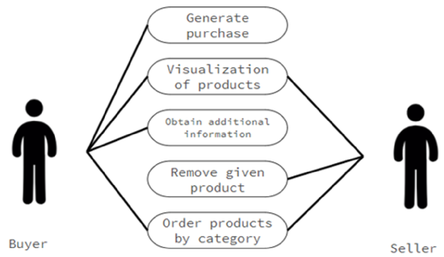


Figure 2: Case of use

Members of ITAM community will be able to:

- Create a profile providing a picture, full name, contact information, student ID and password
- Access their account using their student ID and password
- Upload new items for sale and offered services
- Visualize products by categories
- Visualize seller's contact information
- Display and modify their contact information

IT Architecture

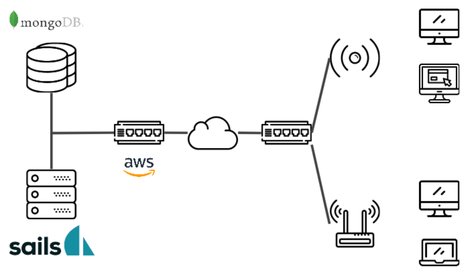


Figure 3: Diagram of TI architecture

Methodology

The system is designed, developed, implemented and tested using Scrum Methodology, based on functional prototypes, and the fulfilling of user requirements via incremental and iterative Sprints.
Each Sprint had its own brainstorming, designing, development and quality testing stage, as shown in the following figure; each successive Sprint took previous Sprints results as inputs, allowing continuous improvement and constant deliveries of finished tasks. Functionality of the system is assured by implementing quality metrics on every Sprint.

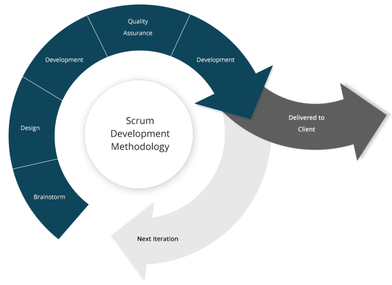


Figure 4: Scrum Methodology

Main Page

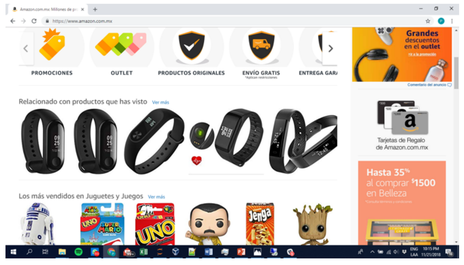
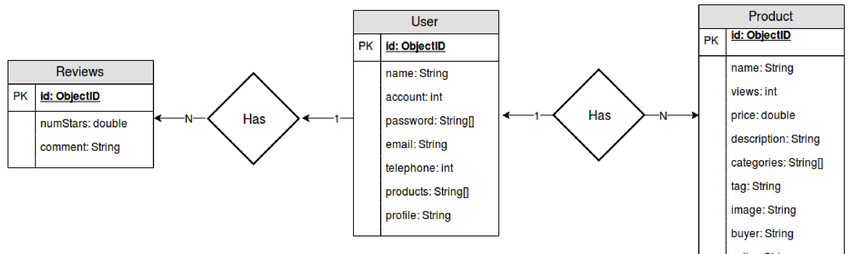


Figure 5: Mercamita's catalog

Database



Flow diagram of main functions

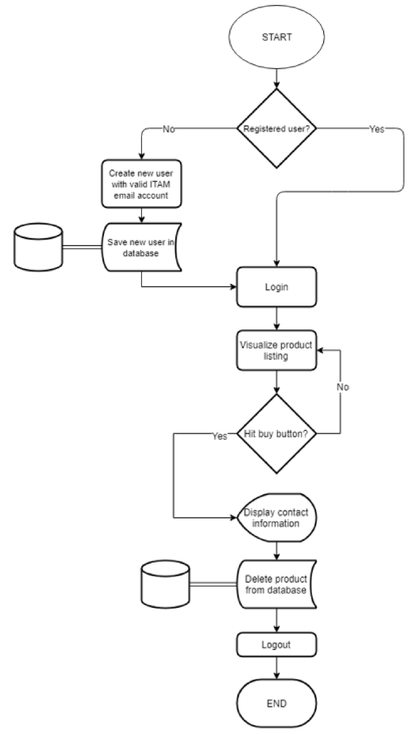


Figure 6: Flow of the standard operation of Mercamita

Results

Objective metrics may allow to verify the achieving of the system goals. For this matter, the following are proposed to measure system effectiveness:

- Increase of offers made weekly.
- Respond to 100 simultaneous requests without denying service.
- Reducing lifetime of an announcement to less than 2 weeks.
- Completing double the transactions of present-day solutions.

References

[1] Wrobel-Konior.
What is an e-payment system?
2017.

[2] IEEE 1058 Standard.
1998.