Web application with smart interface

Aplicación web con interfaz inteligente

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Abstract

In order to compete in the business world, it is necessary to implement a strategy that involves different channels: Web, social media, digital communities and, recently, mobile phones. People currently in their daily work are already implicitly using an intelligent cell phone, since they already have their agendas, email accounts, bank accounts and much more. There-fore, it is more than convenient that your brand has a presence on these devices. Technology such as FLUTTER, MYSQL, NODE JS. and ANDROID, support the creation and implementation of web applications. Using web applications saves money, optimizes time, thus not having to deal with learning to handle new programs, and you can carry out activities from anywhere, Zitácuaro, Michoacán is no excep-tion in being immersed in the use of technologies, as in the large cities, is not exclusive, giving all businesses the opportunity to enhance their daily activities, such as the sale of food through a web application.

Web application, Empower, Technology

Resumen

Para poder competir en el mundo empresarial, es necesario implementar una estrategia que involucre diferentes canales: Web, social media, comunidades digitales y en el último tiempo, móviles. Las personas actualmente en su quehacer diario están ya forma implícita el uso de celular inteligente, como agendas, cuentas de correo, cuentas de banco y mucho más. Por ello, es más que conveniente que tu marca tenga presencia en estos dispositivos. La tecnología como FLUTTER, MYSQL, NODE JS.y ANDROID, dan una soporte a la creación e implementación de aplicaciones web. Usar aplicaciones web ahorra dinero, optimiza tiempo, así no tener que ocuparse de aprender a manejar nuevos programas, y se puede desde cualquier sitio realizar actividades, Zitácuaro, Michoacán no es la excepción en estar una inmersión del uso de tecnologías, como en las grandes ciudades, no es exclusivo, dando la oportunidad a todos los negocios de potencializar sus actividades diarias, como lo es la venta de alimentos a través de una aplicación web.

Aplicación web, Potencializar, Tecnología

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Introduction

This document shows some techniques and results on the development of a web application to place orders for various food businesses in the Zitácuaro region, as well as a general description of the tools used for its development. Two sections were developed within the application where the part of a normal user is contemplated, who is the person who orders the food and the section of a vendor where he can register, modify, edit or delete the products that the client will see. This application is developed with the purpose of facilitating daily food purchases, as well as the development or technological update in mobile devices of businesses in the eastern region of Michoacán. In Zitácuaro, according to the 2020 DataMéxico population census, the population in Zitácuaro was 157,056 inhabitants (48% men and 52% women), one of the reasons for the growth in food sales is locally or by request, coupled with COVID-19 technological alternatives gave rise to its emerging application. Talk about web systems, understanding that they are those software applications that can be used by accessing a web server through the internet, or an intranet through a browser. Among the tools used in development are: FLUTTERMYSQL, NODE JS. Application is created for use on the ANDROID platform and limited to the eastern zone of Michoacán.

According to a pilot survey on a scale of Likert applied to fast food businesses (20), considering the most representative in sales and services, 35% was obtained, coinciding with the following:

Prioritized problems to solve

- Growth and updating of the forms of purchase of food businesses in the region.

- Practicality and facility to place orders in a more comfortable way for people.

- Safety of people in terms of health in these times of COVID and personal safety since currently one is in great danger by being away from home.

Hypothesis

A web application gives food businesses the opportunity to facilitate their sales in the area of Zitácuaro

General objective

Develop a mobile application in which orders can be placed to different food businesses in Zitácuaro from the same and this notifies the owners of the restaurants or businesses of the orders.

Specific goal

- Design an optimized application that loads and respond quickly.

- Place orders through the application.

- Provide practicality to owners of food businesses such as restaurants or places where home deliveries are made, also providing users who order food with the ease of having at their fingertips different all businesses in the Zitácuaro area in a single application.

- Notify business owners when users place an order and they ship it to the user. security goals.

- Some points to be discussed are shown below: Personal security since users do not need to leave their homes. Provide secure protection of user data and prevent your information from being misused.

Justification

The purpose of carrying out the project is that through the mobile application, users can be making orders to various places or food businesses since in the Zitácuaro area there is no mobile application or method that allows us to access different types of food quickly and efficiently and in a single application, so the creation of this application is considered feasible.

Said application would make it easier for users to make their purchases in a very practical and efficient way, on the other hand, it will allow sellers to have new sales methods in which can update their businesses since today technology is at the hand of all people. It is important that small, medium and large businesses generate actions to achieve their competitiveness, and that better be using technology that is embedded in our daily lives.

Theoretical foundation

Mobile application. A mobile application is a program that you can download and access directly from your phone or other mobile device. Android Apple, Microsoft, Android, and BlackBerry all have app stores that operate online where apps are downloaded and installed.

Firebase. It is a platform for the development of web applications and mobile applications launched in 2011 and acquired by Google in 2014.1. It is a platform located in the cloud, integrated with Google Cloud Platform, which uses a set of tools for the creation and synchronization of projects that will be endowed with high quality, making it possible to grow the number of users and also resulting in obtaining of increased monetization.

It is a container-based cloud platform as a service (PAAS).

Developers use **Heroku** to deploy, manage and scale modern applications, it is an elegant, flexible and reliable platform. Easy to use, it offers developers the simplest path to bring their applications to market.

React Native. It is an open source framework developed by Facebook and released in 2015.It is written in different languages including JavaScript, Objective-C, Swift programming, and Python. React's native cross-platform framework supports Android, iOS, and Windows apps with the ability to provide native-like performance.

Ionic. It is a software development kit of open source used by developers around the world to develop various mobile applications.

Conceived as an asynchronous event-driven Java Script runtime environment, **Node.js** is designed to build scalable network applications.

Flutter. It is an open-source framework developed by Google to create native applications easily, quickly and simply.It is used to develop applications for Android and iOS platforms. Flutter offers mobile app developers a full range of widgets, APIs, and many other tools, it was first built to support AngularJS, but over time it supports all front-end frameworks.

Data and information.It's not always easy to know what data will be accessible through an app, or how the data will be used. Before you download an app, consider what you know about who developed it and the app's usefulness. App stores can include information about the company that developed the app, as long as the creator provides it to them. If the app creator doesn't provide your contact information – such as a website or email address – the app may be less trustworthy.

Methodology

An infallible tool, as a model in the development of software products is the Sequential Model of software engineering:

- Analysis.

- Design.

- Developing.

- Implementation.

Analysis

In the requirements gathering process, the focus is on the software. Within the analysis process, it is essential that through a collection of functional and non-functional requirements, the software developer fully understands the nature of the program that must be built to develop the application, the required function, the behavior, performance and interconnect .Identification of priority modules of the pro cease

- Customers.

- Sale and registration.

- Tracking vs delivery.

Design

Software design is really a process of many steps but it is classified within itself. Design activity refers to setting up the data structures general software architecture, interface representation and algorithms. It is the design process where requirements are translated into a software representation [9].

Defining the application modules:

- Customer module: orders and order confirmation, add dishes, edit dishes, show dishes, category, add and edit business fields.

- User module: orders, purchases, user settings.

Developing

This activity consists of translating the design of a machine-readable form. In the software application for this project, code generation refers to both the part of generating virtual environments, and the part in which behaviors are added to these environments. In short, this activity involves generating code

Implementation

There will undoubtedly be changes in the software, as well as some modifications to its functionality. It is generated that the software can adapt to changes in the external environment, once the code is generated, software or application tests are carried out.

An application release is built to be able to be fully tested (Not yet uploaded to the Google Play Store) but in an official way in its first beta version, which will be tested on different devices (Android) for later in a stable and 100% complete version to launch and put it into full operation.

The developed API was mounted on the server heroku which allows us to access the routes and make HTTP requests anywhere we are, this is a free hosting. The database was mounted in the cloud in the service of alway data which is also a free service that through the characteristics it offers us will allow us to carry out functionality tests giving real use to the application

Results

In the data obtained through the survey of people and owners of food businesses, it was obtained that 90% of approval was obtained both as users and customers, since it is provided quickly to customers since it is provided provide a quick way that they can contact you in a simple way.
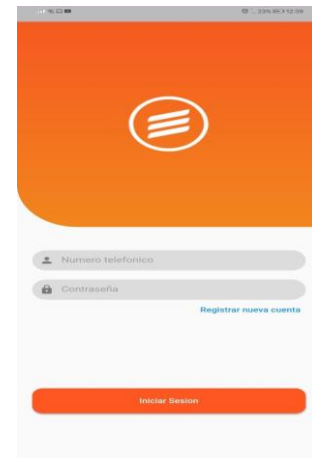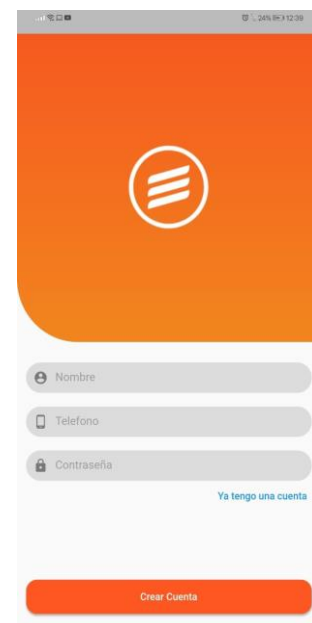

Figure 1 Login Screen

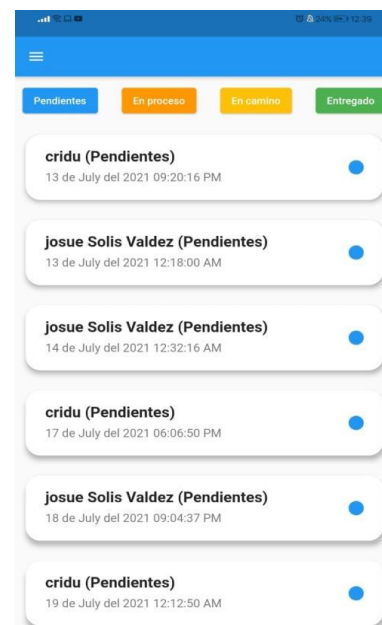**Figure 2** Link that sends us to the login screen

Figure 3 Link that sends us to the login screen

Below these was placed a list of elements which contains 4 sections in each element in this case is the username date Location and a point with the color of the process in which it is located. The colors were selected in this way since they make a very good reference to the period in which they find each other
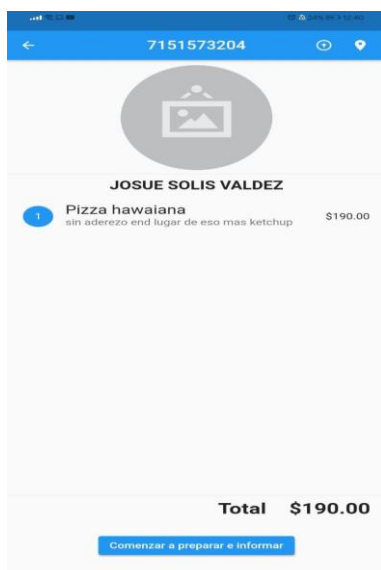

Figure 4 Current order process

In this section we can see 2 markers, one of them is the position in which we cannot find and the other the destination to which we must arrive, we can see that in the lower left part they show us 2 buttons which have the function of making a zoom or return us to the position where we are and the other zooms and positions the camera at the destination point.
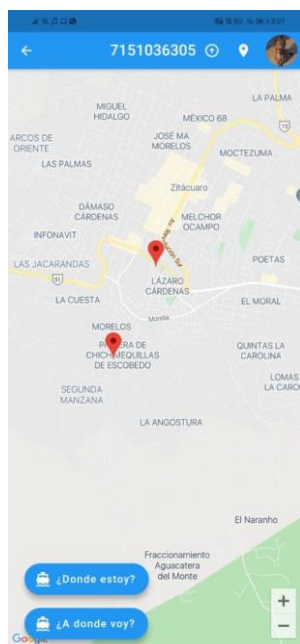

Figure 5 Location on map

In this section we have at the top the default image that the product will have, in this case we have 2 options:

1.-Place a gallery image.

2.-Place a camera image.

Any option the user wants will be accepted.

Next, we have a form with the data required for the creation of the dish, the fields are the following:

- Product name.

- Description of the product (ingredients, types of preparation, etc.).

- Product category (with option to enter a new category).

- Type of sale or unit of measure this contemplates many possibilities in this case leaves the field free to the user since it could be in kilos, grams, pieces, among others.

- Product price.

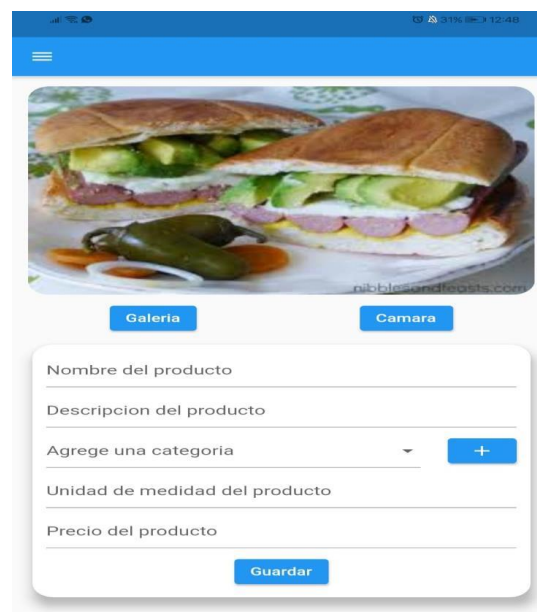- At the end we have the save button to complete the action.

As seen in figure 6.

Figure 6 Add product or dish

List where all the existing dishes are shown or in case of selecting a category it shows the elements of said category, each element has general data of the dish which are:

- Plate image.

- Plate price.
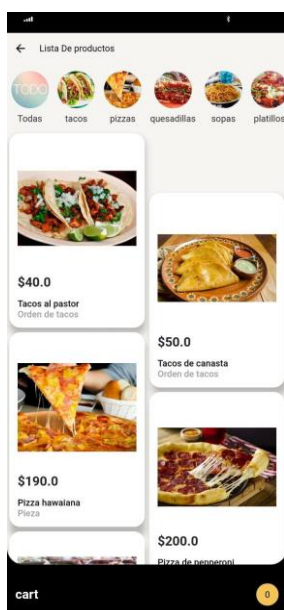
- Name of the dish.

- Type of sale of the dish.

Figure 7 List of all existing dishes

In the same way, a list is obtained where we can appreciate, moving the finger from the cart list (marked in red in the previous image) upwards, which will show the list of cart elements with the following data:

Quantity of products on the plate.

Name of the dish.

Total cost of quantity

Next to the list of elements, we mark the total to pay for the order, as seen in figure 8.
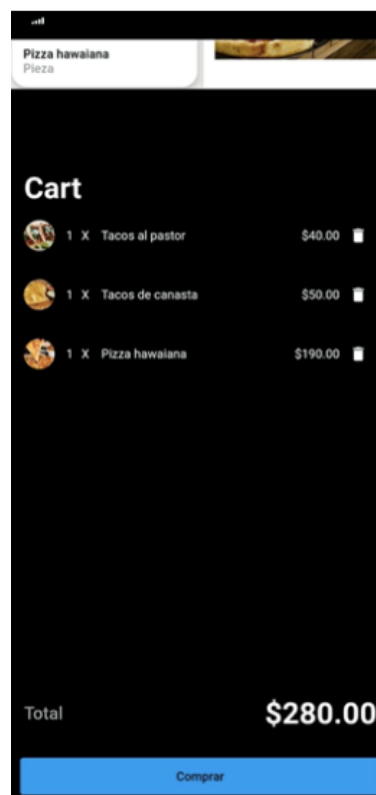

Figure 8 Cart list

To finalize the order, you must press the confirm shipment button, which will redirect us to the order screen showing the current order at the top.

In the section to select address we have 2, the first (with the GPS or location icon) button located in the lower left part is in charge of selecting a marker on the map in the exact place where the user is providing thus the search for the current location.
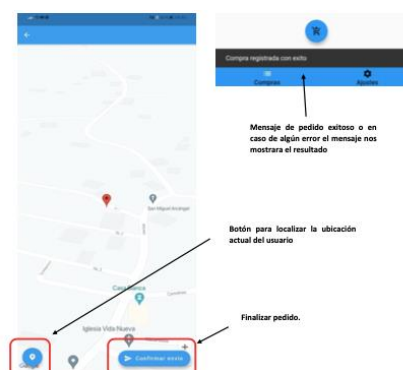

Figure 9 Customer Location

The application is in testing, before uploading to google play during 2022.

The validity and reliability of the survey in the satisfaction of the application of part of the administrative management, was carried out with Cronbach's alpha obtaining 0.86, then it can be determined that the instrument used has an acceptable degree of reliability.

Conclusions

Obtaining a real-time application and likewise a strengthened structure, using current technology, but also with new business approaches, it can be said that the hypothesis is fulfilled with a good level of significance, supported by Cronbach's alpha model. Technology in the last two years has been an emergency tool to a support tool, web applications are that tool that no organization should stop using.

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