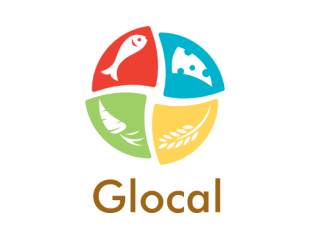
System Requirement Specification

Glocal - Business Rating and Review System



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**1. Introduction**

**1.1 Motivation**

Information providing websites are on the rise ever since the Internet took off in the late 20th century. Search engines such as Google and Yahoo catalysed this effect and brought services to a wider population of users. Nowadays, most modern businesses and social communications depend - to some extent - on the Internet. Looking at the current trends and influence of information providers, we have decided to make our own version of an online information providing service which is similar to Yelp and Zomato. Affectionately called “Glocal”, our web application implements a subset of the features provided by the online advertising and crowd sourced reviewing website Yelp. In addition to using the reviews and customer data to perform functions, we aim to include several analysis features that show the impact of certain data on others such as favorable reviews and ratings as a function of businesses and their success.

**1.2 Scope**

1. Glocal is designed as a web application which provides the user the ability to rate, review and search for different businesses among different regions and provide localized information. We will be using the Oracle database as part of the requirements to store records ranging from 85 to 700 thousand; consisting of business data, users, profile pictures, location tags and so on. We will examine the features of the Oracle database and incorporate these in our web application system.
2. The application will be implemented on a localhost environment due to the limitations of accessing the Oracle database used by the CISE department at UF. Nevertheless, we aim to make the application run as it would have if it was hosted on the cloud.
3. Users can search for different businesses in a given region using a search feature in the application. This feature will allow users to navigate through various categories of data and will allow them to find specified information. The search function can be accomplished through keywords, categories, region and other such parameters.
4. Business review data will form a core aspect of the application. We intend to allow users to gain insight on a certain business by looking at the reviews for it by other users and, in turn, also allow them to review for the business. A user will be allowed to review for the business only once as a measure to cut down on spam reviewing. Users will need to login to their account before proceeding to review a business. Reviews will also allow a user to rate on a star system to indicate whether the user had a positive or negative experience.
5. Analysis of data and its representation in the form of pie charts, trend graphs and bar graphs is also of interest. The application will help facilitate a user to better understand a business and whether or not to invest time and money in them. For example, a user can infer from a graph the average tip for a restaurant compared to the average tip in the entire region. Furthermore, a new restaurant that has consistently received bad reviews would likely indicate that it will continue to provide a lacking experience. Whereas a restaurant that shows a positive trend after a brief period of inadequacy shows the user that there have been some improvements in the business and it might be a worthwhile visit now.

**1.3 Definitions, acronyms, and abbreviations**

|  |  |
| --- | --- |
| **Term** | **Definition** |
| User | Someone who interacts with the web application |
| Customer | Customer is a subset of users who interacts with the application to provide input of the businesses through reviews, tips etc |
| Business Owner | Business Owner is a subset of users who creates and owns businesses and monitors their analytics. |
| HTML | Hyper Text Markup Language |
| CSS | Cascading Style Sheets |
| WWW | World Wide Web |
| JS | Javascript |
| JQuery | It is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. |
| MVC | Model-View-Controller Architecture |
| API | Application Programming Interface |
| SQL | Structured Query Language |
| rman | [Recovery Manage](https://web.archive.org/web/20051208092120/http://www.oracle.com/technology/deploy/availability/htdocs/rman_overview.htm) |
| PL/SQL | Procedural Language extension Structured Query language |
| DML | Data Manipulation Language |
| DDL | Data Definition Language |

*Table 1:Definitions*

**2. Architecture**

For our web application, we follow a **“Three tier architecture”**. In the three tier architecture we have three different layers which perform independent functions. The layers are as follows:

Untitled Diagram (1).png

*Figure 1: Web Architecture of Glocal*

**2.1 Front End (Browser)**

The Front end of a website is considered as the first tier of the web application with which the user interacts. Everything that is seen from dropdowns, fonts, colors, sliders is designed from a combination of HTML,CSS, Bootstrap, JQuery and Javascript.

HTML is used to describe web pages using a markup format. CSS is used for describing the presentation of a document written in a markup language(HTML). CSS enables the use of different fonts, colors and design choices for a better visual experience of the user. HTML,CSS and Javascript together form the cornerstone technologies for the World Wide Web.

Along with the use of the above technologies, we will incorporate Twitter Bootstrap to ensure that the web application can be supported on various devices of different screen sizes. Angular JS is a single page application framework which dynamically loads the content of the website. Angular JS follows the MVC framework as it isolates the application logic from the user interface layer and supports separation of concerns. The user performs certain actions on the view. The actions are sent as requests to the controller. The controller forwards these requests to the services, which in turn call the corresponding API through the mentioned route.

**2.2 Backend**

What makes the front end of a website possible? Where does the front end get all its data from? This is where the backend comes in. The backend of the web application consists of a server which has an application on it. In order for the server to communicate with the database, the server uses server side language namely Javascript. We have incorporated Sails JS in our application. Sails JS is a javascript framework which is designed to resemble the MVC Architecture of other server scripting languages. The requests sent by the services of the browser are intercepted by the controllers. The Controllers understands the request and forwards it to the respective model’s services. The services then connect to the oracle database and perform the necessary actions.

**2.3 Database**

The Database used in our application is the oracle database. It is object relational database produced and marketed by oracle. Oracle database will contain the data of our application. Few of the features that we are interested to incorporate in the given application (which are provided by the oracle database) are:

* Data Aggregation and Consolidation
* Data Pump utilities, which aid in importing and exporting data and metadata between database
* [Recovery Manager](https://web.archive.org/web/20051208092120/http://www.oracle.com/technology/deploy/availability/htdocs/rman_overview.htm) (rman) for [database backup](https://en.wikipedia.org/wiki/Database_dump), restoration and recovery
* [SQLPlus](https://en.wikipedia.org/wiki/SQL*Plus), a program that allows users to interact with Oracle database(s) via [SQL](https://en.wikipedia.org/wiki/SQL) and [PL/SQL](https://en.wikipedia.org/wiki/PL/SQL) commands on a [command-line](https://en.wikipedia.org/wiki/Command_line_interface).

SQLPlus will enable us to perform DML and DDL commands on the database. We can use CREATE, UPDATE, DELETE and SELECT commands to perform the creation, manipulation, deletion and selection of records(tuples) on the database respectively. Once the respective operations are performed, the corresponding response is sent back to the backend to process the response. Based on the response, the backend enables the front end to perform the appropriate action.

**3. Functional Requirements**

Glocal Functionality Diagram.png

*Figure 2: Functionality Diagram of Glocal*

The users in Glocal are divided into two types:

**3.1 Customers**

First, new customers can create an account on glocal by providing their personal details such as name, email, password, city and state. By checking their email id, the system will identify whether this person is an existing or new customer.

After the Registration process, the system will provide a unique customer ID and access token which can be used to access the different features of the system. Once the customers have signed up into their account, they can also login into the system using the entered email id and password into the system. The Existing customers can edit their personal information such as name, state, password and city in their profile page.

When customers sign into the application, they will be directed to the homepage of the application. In the homepage, a customer will be able to search for different businesses based on city, state, categories etc. Also they will observe the top 4 businesses based on specific categories such as restaurants, nightlife etc.

When customers search for businesses, they will be directed to search page of the Glocal Application. The Search page will consist of businesses based on the entered parameter in the search bar. The search will be based on city, state, categories, business name etc. The search page will have a list of businesses with each business consisting of its name, photo, address, ratings, number of reviews, price range, contact number, timings, categories and latest review.

Upon clicking on any of the businesses, customers will be redirected to the detailed view of the corresponding business. This page will consist of details of the business such as price range, categories, timings and the reviews received by the business. The business reviews can be sorted based on time and ratings. A customer is allowed to give only a single review per day for a given business. When a customer clicks on the user details on a given review, the customer is directed to the selected user profile. User profile consists of basic user details, ratings distribution, reviews given by the user, firsts reviews given by the user for a given business, member since details etc.

If customers wish to reset their password, then the application has a reset password feature where the users needs to enter their valid email id, their previous password and the new password.

**3.2 Business Owners**

New business owners can create an account on glocal by providing their personal details such name, email, password, city and state. By checking their email id, the system will identify whether this person is an existing or new customer or business owner.

This will redirect them to a business dashboard page. In the business dashboard page, the business owner can view all their businesses. They can also create a new business or edit an existing business through the dashboard. When the business owner clicks on their business the following analytics will show up:

1. Number of reviews received by the given business.
2. Number of unique users logging and giving reviews for a given business.
3. Total number of reviews per month for a given year.
4. Number of days since the last review for the business for a given date.
5. Rating distribution based on reviews in pie chart format.
6. Number of days between first and last review.

**4. Queries Description**

1. Create a new account for customer with basic information like name, email id, password, city, state and country.
2. Query for login for existing customers and business owners based on the email id and password.
3. Search the desired business based on the name of the business, city and state.
4. Extensive search with the help of parameters like rating, price range, distance from the current location, timings, credit card acceptability, WiFi access.
5. Retrieve and edit personal information of the user.
6. Write a review or rate a particular business.
7. Retrieve the review and rating details from each business to analyse and present the data graphically to the business owner.
8. Edit or add a new business.
9. View basic information of other users.
10. Update and view the most recent review at the top.

**5. Public Domain and/or Proprietary Software**

1. CISE Oracle Database
2. Yelp Dataset: <https://www.yelp.com/dataset_challenge/dataset>
3. HTML
4. CSS
5. AngularJS
6. SailsJS
7. Twitter Bootstrap