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Revision History

| Name | Date | Reason For Changes | Version |
|-------------|-------------|---------------------------|----------------|
| | | | |
| | | | |

1. Introduction

1.1 Purpose

The purpose of this project is to provide personalized experience to the user while searching data. Users when searched data will inform about its relevance as a feedback and according a customized search will be provided to the users.

1.2 Document Conventions

The document follows the IEEE format standard (IEEE Std. 830 – 1998).

1.3 Intended Audience and Reading Suggestions

The document is intended for developers, users, testers. It can be used by all the people who use the internet for various searches etc. This has been implemented under the guidance of college professors. This SRS contains an overall description of a project, external interface requirements, system features and non-functional requirements.

Suggested sequence for the reading the document is:

Begin with the overview section and then proceed through the sections that are most pertinent to each reader type.

1.4 Product Scope

In our project we are going to implement a personalization system in which user will browse the content according to their requirement then from the searched information they will provide feedback for the relevance of that where the data will be processed through various stages as editorial planning, content reusing ,navigation and content hierarchy, Users flow and calls to

action, content structure Taxonomy and Metadata ,Content development and production
.This will result in the customized data to the user.

Objectives:

- To provide customized data to users.
- To attract more customers to the websites.
- To save a whole bunch of time working over the internet.

Benefits:

- More Relevant data Recommendations
- Improves customer satisfaction.

2. Overall Description

2.1 Product Perspective

A centralized database stores the following information:

1. Searched Information

2. Feedback of user

- A distributed content management strategy document that defines the systems and processes for how content can be syndicated, cross-published, or centrally managed.
- A review of tokens that can be used within content to allow for variable data that can be changed depending on visitor context.
-
- A review of image styles to identify how photos and other image assets are represented across touch-points.
- Responsive design guidelines to ensure content formatting is optimized across devices

2.2 Product Functions

The major functions that product must perform are:

- Collection of data
- analyzing the data
- classification to show specific results to the users

The major functions that user must perform are:

- enter the required data
- login to various websites.

2.3 User Classes and Characteristics

This project is mainly intended for two types of audiences. One is the customer or the end user and the other is the administrator of the system.

2.4 Operating Environment

Operating environment for the personalization system is as listed below.

- Centralized database
- Client/server system
- Operating system: Android/Windows.
- Database: SQL+ database
- Platform: python
- Py audio support
- ParseHub

2.5 Design and Implementation Constraints

Dataset Used:

Personalization system recognizes three types of historical datasets

Users – This dataset is intended to provide metadata about your users. This might include information such as age, gender, or loyalty membership, which can be important signals in personalization systems.

Items – This dataset is intended to provide metadata about your items. This might include information such as price, SKU type, or availability.

Interactions – This dataset is intended to provide historical interaction data between users and items.

2.6 User Documentation

There is no dedicated user manual to the system, it has UML diagrams that will guide you throughout the interface and the working of the system.

2.7 Assumptions and Dependencies

Proper working of this app is dependent on the internet connectivity of the users' computer assumptions and dependencies:

- It is assumed that users search various information required frequently through different search engines .
- It is assumed that the feedback given by users is genuine.
- Data collected from one site can be used for another and can also be used by another site to serve specified users.

More the searches and feedback more is the customization for further search

3. External Interface Requirements

3.1 User Interfaces

Registration to various sites:

1. Login Name
2. Email Id
3. Password

Searches through various channels

1. Website
2. Email
3. Campaign landing pages
4. Pop up notifications

5. Social media
6. Advertisements
7. Direct Mail
8. Text notifications
9. Chat bots

3.2 Hardware Interfaces

- Intel I3 2.8 GHz Processor and Above
- RAM 1 GB and Above
- HDD 20 GB Hard Disk Space and Above

3.3 Software Interfaces

- Any windows based operating system.
- MySql Server Database
- Python
- Pyaudio
- Parsehub

3.4 Communications Interfaces

This project supports all types of browsers. We are using simple questionnaires to understand the user experience over a particular website.

4. System Features

1. Editorial Planning

- An editorial style-guide to document guidelines and provide examples for content creation. This may describe phrasing, voice, tone, content length, etc.
- A content inventory to list and describe all currently available content that can be targeted
- A content gap analysis to identify where new content is needed to support marketing objectives and to ensure that relevant content is available for each persona or customer segment
- An editorial calendar or production schedule to define how frequently content will be posted or updated across each channel

2. Content Reuse

- A distributed content management strategy document that defines the systems and processes for how content can be syndicated, cross-published, or centrally managed
- A review of tokens that can be used within content to allow for variable data that can be changed depending on visitor context
- A review of image styles to identify how photos and other image assets are represented across touch points
- Responsive design guidelines to ensure content formatting is optimized across devices

3. Navigation and Content Hierarchy

- A detailed site map which describes the overall structure of the content within the site as well as how it is prioritized and organized
- A review of web server error reports to address broken links and other navigation issues that may be resulting in a poor user experience

- An SEO analysis to identify the top sources of organic inbound traffic and which content those visitors are engaging with the most
- A review of URL patterns used in order to ensure consistent cross-linking and effective use of URL parameters that facilitate analytics tracking

4. User Flows and Calls to Action

- A customer journey map that describes the touchpoints across channels as well as the intended paths in the buying process.
- The configuration of funnels to ensure that user flows can be effectively measured
- An editorial headline guide that defines how content headlines and other calls to action should be written

5. Content Structure, Taxonomy, and Metadata

- A content model document that describes the taxonomy and structure of the content used within the user experience
- A review of the meta tag configuration within the CMS to ensure that content editors and producers can consistently enter descriptions and other metadata such as Open Graph tags or source attribution
- A review of HTML templates to ensure that title tags, heading tags, meta tags, and rich snippets are implemented according to best practices

6. Content Development and Production

- A content analysis report which summarizes the existing content in terms of readability and effectiveness of communicating the value of your brand
- A modern CMS platform such as Drupal 8, which enables content teams and non-technical users to easily draft, preview, and publish new content
- A publishing workflow configured in the CMS to ensure that content gets staged, reviewed, and easily pushed to production.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The Performance Requirements of Personalization System are as follows:

- Providing users with an customized experience of information
- Providing relevant search according to previous feedback.

5.2 Safety Requirements

If there is extensive damage to a wide portion of the database due to catastrophic failure the recovery method restores a past copy of the database that was backed up to archival storage and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

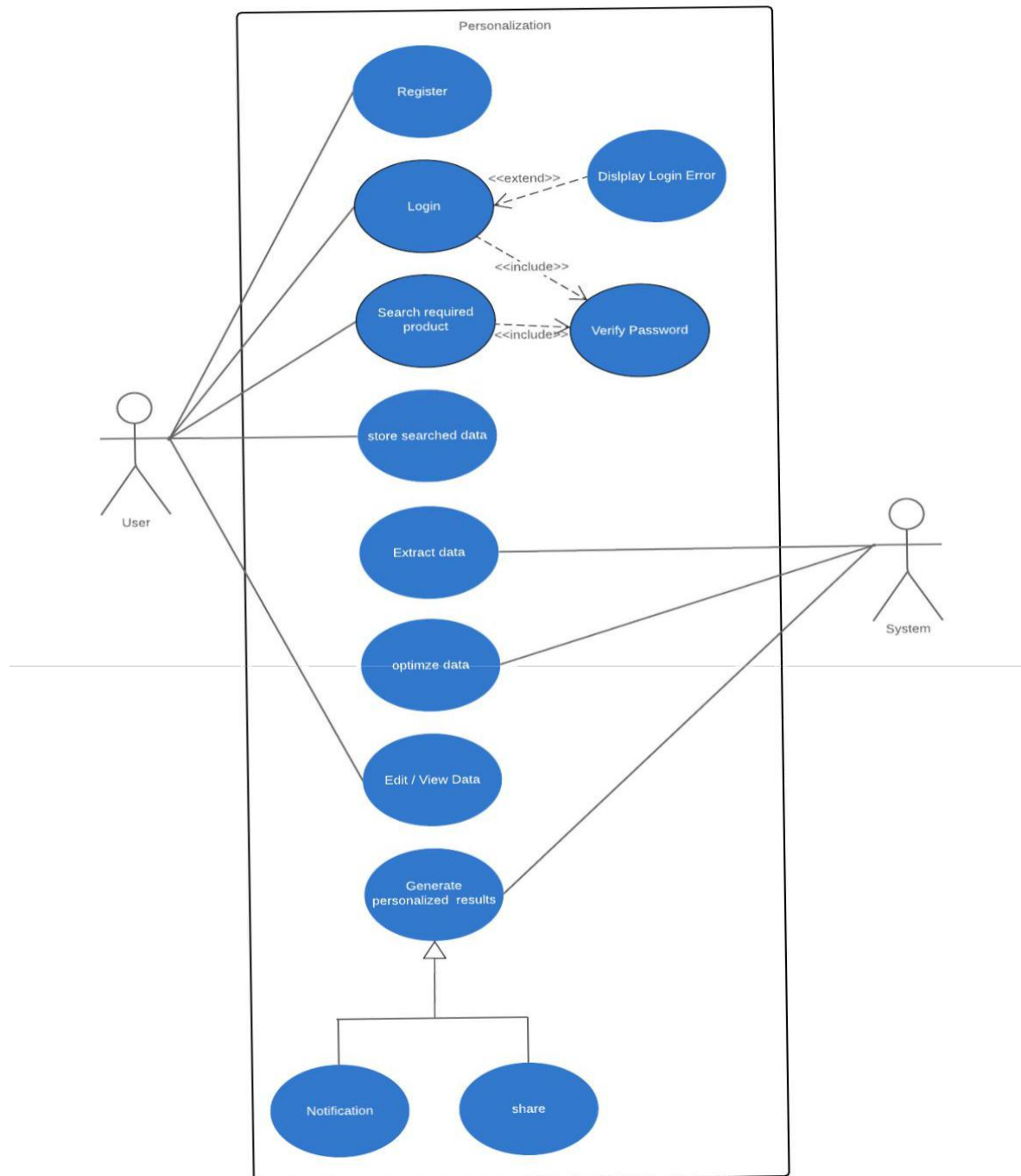
5.3 Security Requirements

- Database must be secured by the use of encryption and decryption techniques so as to prevent attacks like SQL Injection.]

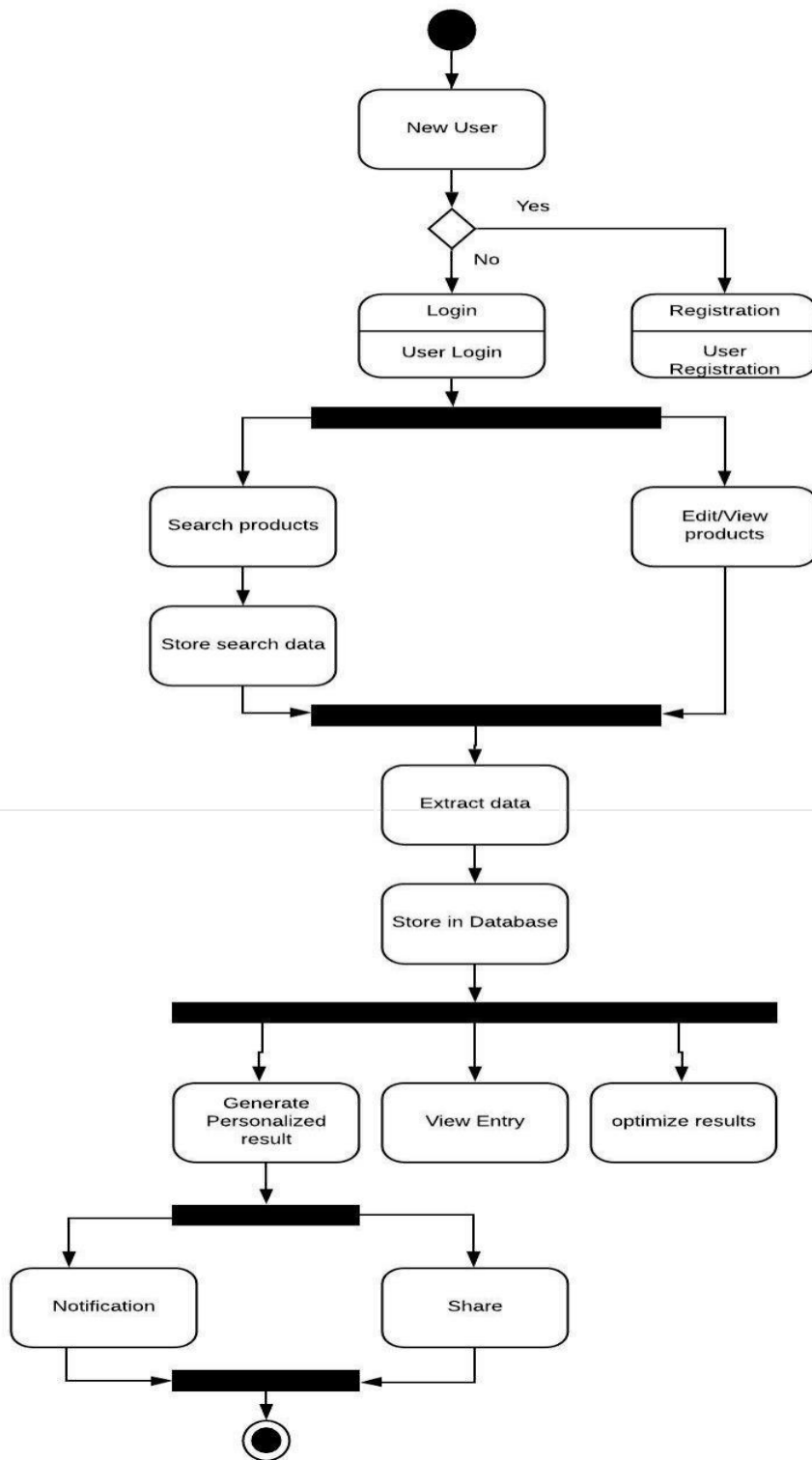
5.4 Software Quality Attributes

- **AVAILABILITY:** The data required or the analysis should be properly available in the database
- **CORRECTNESS:** The feedback given by the users should be correct which will lead to correct results.
- **MAINTAINABILITY:** The administrators should maintain correct user details and results obtained from various search engines.
- **USABILITY:** The system should satisfy a maximum number of customer's needs.

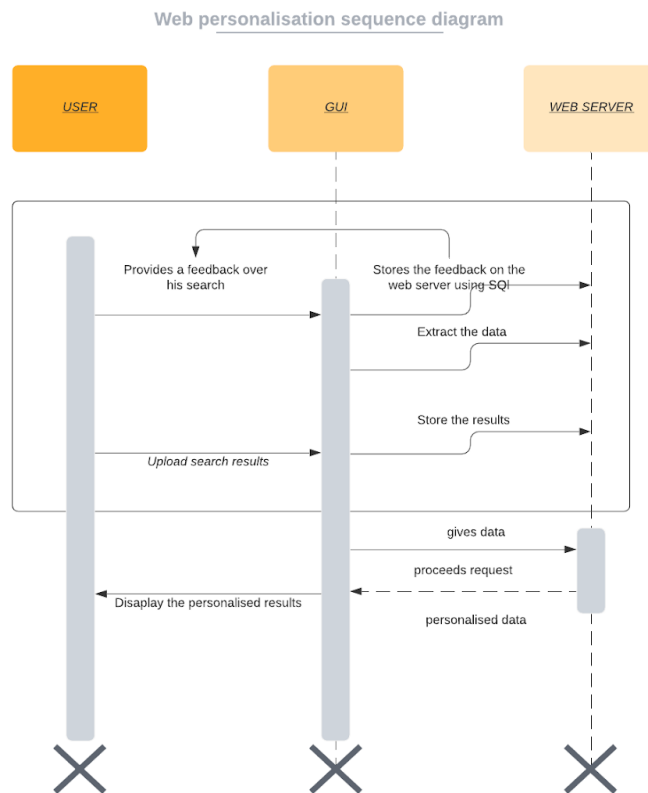
UMLDiagrams:

**personalized user interface System Use
Case Diagram**

State Transition diagram:

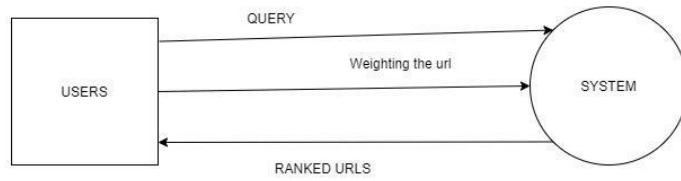


Sequence Diagram:

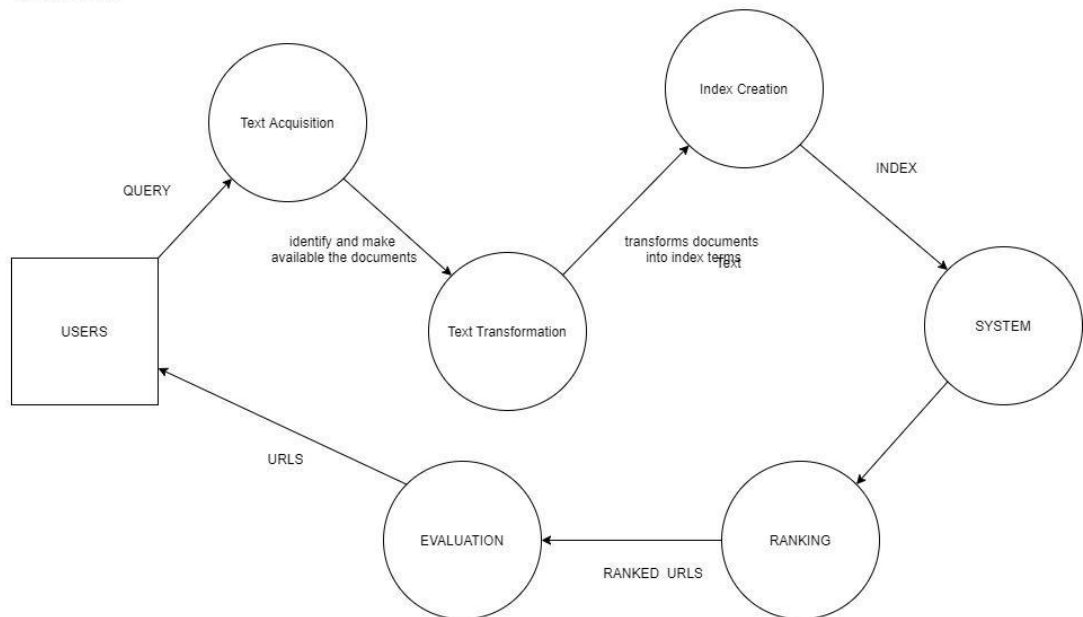


DFD Diagram:

LEVEL 0



LEVEL 1



Test Cases:

Login Module:

| Test Case ID | Test Scenario | Test Steps | Test Data | Expected Results | Actual Result | Pass/Fail |
|--------------|--|---|---|---------------------------------|---------------|-----------|
| T1 | Check customer login with valid data | 1. Visit to the site 2. Enter username 3. Enter password 4. Submit the details | Username='vrchaudhari', Password='vaibhav' | Successful login | As expected | Pass |
| T2 | Check customer login with invalid data | 1. Visit to the site 2. Enter username 3. Enter password 4. Submit the details | Username='vrchau' Password='vi' | Error message will be displayed | As expected | Fail |
| T3 | Check customer login details | 1. Visit to the site 2. Enter username 3. Enter password 4. Submit the details | Username=' ' Password=' ' | Error message will be displayed | As expected | Fail |

Search Box

This is an easy test to set up within Optimizely and target any page on your site, and it is a missed opportunity for many businesses. Most boxes simply read "Search" or have no text at all.



Common Default:

Show text suggestive of the range of products your site offers or the ways search can be used

Test showing a search CTA (Call to Action) and the value of an icon CTA vs. a word CTA

What to Measure:

Increase in product page views and conversion by driving users to products faster

Increase in average order value by highlighting products not previously considered

If your search results page is not strong but is scheduled

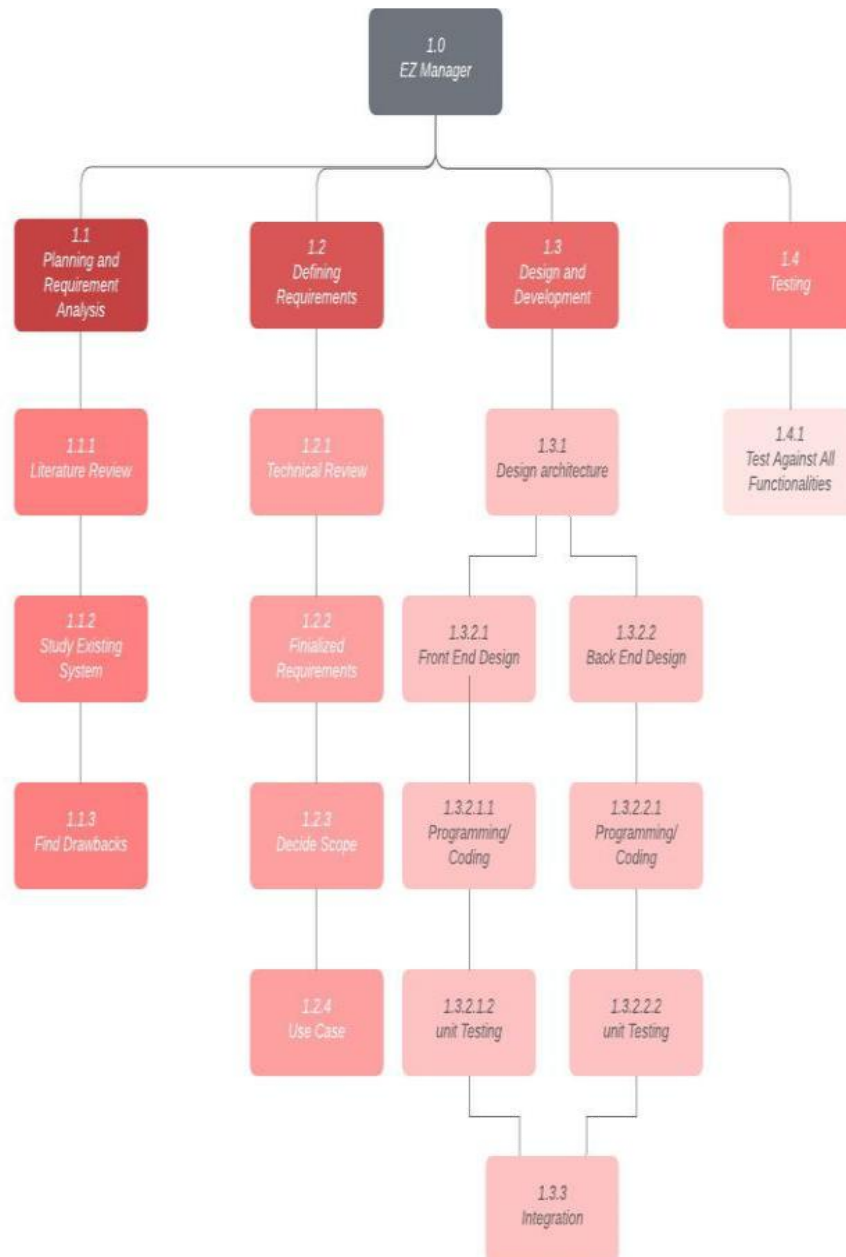
for a revamp, this is a great test to see if you can drive more users in that direction.

Targeted Content

With Optimizely, you can dedicate a section of the homepage to serve targeted content based on predefined criteria. This may be based on buckets of search terms, geo-location or previous on-site behavior. This moves your site in the direction of personalization and can take your user experience to the next level, but many sites miss an opportunity to display personalized content based on user targeting information

Common Default:



Work Breakdown Structure:

RISK PLAN AND MITIGATION

| Risk Summary | Risk Category | Probability | Impact | RMMM |
|---|----------------|-------------|--------------|--|
| In case the user gives the wrong feedback or mistakenly provides the wrong user input | people risk | less | Critical | 1.We would be asking user to confirm his selection by the use of pop up box |
| Sometimes poor quality voice recognition may lead to inappropriate results | technical risk | moderate | Critical | 1.Good quality mic to be used. 2. Re-check whether the query heard by system is same as that provided by the user |
| Phishing attacks may occur resulting in data leak privacy due to SQL Injection. | Security risk | Low | Catastrophic | 1. Encryption and decryption methods. 2. More secure servers to be built as we would be using SQL Language . |
| If the browser doesn't support popup notifications or if popup is disabled | Technical risk | Low | Less | 1. Ask users to enable popup notifications. 2.Popup a screen prompting the user to switch to another browser or update an existing browser. |
| Website may be risking insufficient traffic and decline in sales conversion | Market risk | Low | Catastrophic | 1. Search for available systems and modify our system in a more efficient way. |

Test Plan :

| Sr.No. | Testing Technique | Justification |
|--------|---------------------|--|
| 1 | Performance Testing | Performance testing is needed for testing the performance of our project. As we need high performance, we have to check the speed of application, the performance of our application under workload, the behavior of the application under low network. |
| 2 | Regression Testing | Regression Testing checks that a recent program or code change has not affected existing features. When we made any changes in our application then we check that changes against test cases that we have already performed on existing system. |
| 3 | Unit Testing | Unit Tests allows you to make big changes to code quickly. And Unit Tests give us instant visual feedback so your tests give you confidence that you've done enough for now and your project is going in right direction. |
| 4 | Integration Testing | In Integration Testing individual units are combined and tested as a group. It may happen that your code is working better in units/modules. but after integrating it maybe not work properly. so integration testing is must important to check the working of our project after combining it. |
| 5 | Load Testing | Load testing checks the behavior of the application under a specific expected load. Load testing is performed to determine |

| | | |
|---|------------------|---|
| | | a system's behavior under both normal and at peak conditions. Load testing checks the behavior of the application under a specific expected load. we have to check the behavior of our system under normal conditions (when the size of the file is low) or in peak conditions (when the size of the file is high). |
| 6 | Stress Testing | we have to check the breakpoint of our system so we can understand how much stress our system can handle under extreme conditions. Or we can check our performance is satisfactory or not or whether we have to increase the performance |
| 7 | Security Testing | Because of low security unauthorized persons can access the application so Security Testing is needed to check our application free from any vulnerabilities, threats, risks it may cause a big loss. . |

Cost Estimation model :

For any new software project, it is necessary to know how much it will cost to develop and how much development time will it take. These estimates are needed before development is initiated.

A project size of 200 KLOC is to be developed. Software development team has average experience on similar types of projects. The project schedule is not very tight.

The semi-detached mode is the most appropriate mode, keeping in view the size, schedule and experience of development time.

$$\text{Hence } E = 3.0(200)^{1.12} = 1133.12 \text{ PM}$$

$$D = 2.5(1133.12)^{0.35} = 29.3 \text{ PM}$$

$$P = 176 \text{ LOC/PM}$$