TEST REPORT FOR-

**COLLEGE PREDICTOR AND ANALYZER**

*ChangeLog*

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Change Date** | **By** | **Description** |
| 001 | 010/11/2023 | Anand Parashar | Added functions |
|  |  |  |  |
|  |  |  |  |

1. [INTRODUCTION 2](#_TOC_250014)
   1. [SCOPE 2](#_TOC_250013)
      1. [In Scope 2](#_TOC_250012)
      2. [Out of Scope 3](#_TOC_250011)
   2. [QUALITY OBJECTIVE 3](#_TOC_250010)
   3. [ROLES AND RESPONSIBILITIES 4](#_TOC_250009)
2. [TEST METHODOLOGY 4](#_TOC_250008)
   1. [OVERVIEW 4](#_TOC_250007)
   2. [TEST LEVELS 4](#_TOC_250006)
   3. [TEST COMPLETENESS 4](#_TOC_250005)
3. [TEST DELIVERABLES 5](#_TOC_250004)
4. [RESOURCE & ENVIRONMENT NEEDS 7](#_TOC_250003)
   1. [TESTING TOOLS 7](#_TOC_250002)
   2. [TEST ENVIRONMENT 7](#_TOC_250001)
5. [TERMS/ACRONYMS 8](#_TOC_250000)

# Introduction

With this project we are going to provide solutions to the students to be able to decide their colleges during higher educational purposes. We provide very good user experience and an efficient user interface to be able to manage all user expectations.

In this project, we will provide services to the students to be able to segregate results according to their category, state, percentile etc. We have used linear regression as the main machine learning algorithm.

## Scope

### In Scope

#### Functional Requirements:

* + - 1. User Registration and Authentication:
* Users should be able to put their details in the form.
* Users must be able to submit the form securely with their credentials.
* Users should be able to go to the next page according to their form inputs.
* The system should validate user inputs to ensure they are within the expected range and format.
* Provide appropriate error messages for invalid inputs.
  + - 1. Linear Regression Module:
* Implement a module (possibly in rvp.py) for linear regression to predict ranks based on percentiles.
* The module should read data from a CSV file for regression.
  + - 1. Final List Generation Module:
* Implement a module (possibly in algo.py) for generating the final list of colleges.
* This module should use the predicted rank and other user inputs to filter and sort the data.
  + - 1. Data storage
* This module should use the predicted rank and other user inputs to filter and sort the data.
  + - 1. HTML Templating
* Use HTML templates (possibly in a templates folder) to render pages dynamically.
* The templates should be designed to display the final list and other relevant information.

#### Non-Functional Requirements:

1. Performance:

The system should be responsive and load quickly, even during peak usage times.

1. Security:

Ensure that user data and payment information are securely stored and transmitted. Implement user authentication and authorization mechanisms.

1. Scalability:

The system should handle increased loads gracefully, supporting a growing number of users and

data without a significant decrease in performance.

1. Reliability:

The system should have high availability and minimal downtime and should have accuracy in

results.

5. Usability:

The user interface should be intuitive and user-friendly.

### 1.1.2 Out of Scope

Integration with the JOSAA database and web scrapping was out of scope of this project.

## Quality Objective

* Verify that the Application Under Test complies with both functional and non-functional requirements.
* Reduce downtime through the integration of failover mechanisms, redundancy, and effective error handling. Continuously monitor the application for performance issues and outages.
* Guarantee that the AUT aligns with the quality criteria specified by the client.
* Ensure the application's user-friendliness, intuitiveness, and ability to provide a positive user experience. Conduct user testing and collect feedback for enhancements.
* Identify and resolve bugs and issues prior to the application's launch.

## Roles and Responsibilities

Detail description of the Roles and responsibilities of different team members like

* **QA Analyst: Anand Parashar.**

The Quality Assurance (QA) Analyst is responsible for testing software, websites, and other technical products to detect and rectify bugs, defects, and potential issues.

* **Test Manager: Prof.Anmol Jain.**

The Test Manager oversees all aspects of the testing process, including test plans, resource allocation, cost management, scheduling, test deliverables, and traceability.

* **Configuration Manager: Anand Parashar.**

The Configuration Manager is responsible for managing software configuration and version control.

* **Developer: Anand Parashar**
* **Installation Team:**

Anand Parashar, Antriksh Tyagi, Devraj Gupta and Ansh Srivastava

The Installation Team is tasked with ensuring the seamless execution of the program.

# Test Methodology

## Overview

For this project, the chosen test methodology is the Waterfall model. It is a sequential development process that progresses through project phases (analysis, design, development, and testing) in a step-by-step manner, with each phase concluding before the next one commences.

## Test Levels

The testing involves:

**Unit Testing**

It is a method of testing individual units or components of a software application. It is typically done by developers and is used to ensure that the individual units of the software are working as intended.

**Integration Testing:**

Integration testing is a method of testing how different units or components of a software application interact with each other. It is used to identify and resolve any issues that may arise when different units of the software are combined. Integration testing is typically done after unit testing and before functional testing and is used to verify that the different units of the software work together as intended.

**System Testing:**

System Testing is carried out on the whole system in the context of either system requirement specifications or functional requirement specifications or in the context of both. The software is tested such that it works fine for the different operating systems. It is covered under the black box testing technique. In this, we just focus on the required input and output without focusing on internal work. In this, we have security testing, recovery testing, stress testing, and performance testing.

## Test Completeness

* 100% test coverage
* All Manual & Automated Test cases executed
* All open bugs are fixed or will be fixed in next release

# Test Deliverables

#### Test Case Description

|  |  |  |
| --- | --- | --- |
| **Test Case No.** | **Test Case Name** | **Description** |
| 1. | User Input validation | Verify user registration process |
| 2. | Linear Regression | Algorithm used to predict ranks |
| 3. | Final List Generation | Algorithm used to generate list |

Test Cases

A grid with text on it

Description automatically generated

**Automation testing using Selenium:**

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

* **Test case Output Images**

**3**

Test case 1: User Registration

**A screenshot of a computer screen

Description automatically generated**

|  |
| --- |
|  |

# Resource & Environment Needs

## Testing Tools

Selenium.

## Test Environment

Following **software’s** are required in addition to client-specific software.

* Windows 8 and above
* VS code
* Selenium
* Browser.

# Terms/Acronyms

|  |  |
| --- | --- |
| **TERM/ACRONYM** | **DEFINITION** |
| API | Application Program Interface |
| AUT | Application Under Test |

Make a mention of any terms or acronyms used in the project.