Test Plan Template:

Hepatitis data analysis and visualisation

Prepared by:

Medha Balani - IIT2019021
Vidushi Pathak - IIT2019027
Aarushi - IIT2019032
Jyotika Bhatti - IIT2019036

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1.2 INTRODUCTION

This project revolves around the hepatitis virus which is the most common cause of hepatitis disease.There are analysis of various trends in the hepatitis dataset done by dividing the dataset into chunks and analysing and visualizing them.

With the analysis of these fluctuating trends we may be able to focus on the most important factors responsible for deaths worldwide because of this disease. This may help the experts and doctors to work more on those important attributes ignoring the rest of non-important attributes.

2.1 **OBJECTIVES AND TASKS**

2.2 **Objectives**

The main objective of the master test plan is to highlight the points in the projects that are not being given much importance throughout the development and hold some significance. Here we try to bring out the

2.1 Tasks

- Mortality Prediction
- Visualization of various attributes

3.0 SCOPE

General

This section describes what is being tested, such as all the functions of a specific product, its existing interfaces, integration of all functions.

Tactics

To check if the resulting visualization of various attributes and correlation matrix is correct we will perform standard scalar and SMOTE.
To check if the model used for predicting mortality rate is giving the correct result we will check the accuracy of the models used.

4.0 TESTING STRATEGY

a) Standard Scalar
Standardizing the scale is important in a machine learning model, especially with classifier such as K nearest neighbor. If a feature's variance is orders of magnitude more than the variance of other features, that feature might dominate other features in the dataset, which is not something we want happening in our model. So we will use the standard scalar of sci-kit to standardize the scale within the dataset.

b) SMOTE balance training data
If the dataset consists of imbalance data class, random splitting of training and test set produced an unequally

distributed class outcome. Which will give wrong mortality prediction so we will apply SMOTE technique to balance the data using imblearn library and then we will compare the model accuracy with and without SMOTE.

4.1 Unit Testing

Definition:

Specify the minimum degree of comprehensiveness desired. Identify the techniques which will be used to judge the comprehensiveness of the testing effort (for example, determining which statements have been executed at least once). Specify any additional completion criteria (for example, error frequency). The techniques to be used to trace requirements should be specified.

Participants:

List the names of individuals/departments who would be responsible for Unit Testing.

Methodology:

Describe how unit testing will be conducted. Who will write the test scripts for the unit testing, what would be the sequence of events of Unit Testing and how will the testing activity take place?

4.1 System and Integration Testing

Definition:

List what is your understanding of System and Integration Testing for your project.

Participants:

Who will be conducting System and Integration Testing on your project? List the individuals that will be responsible for this activity.

Methodology:

Describe how System & Integration testing will be conducted. Who will write the test scripts for the unit testing, what would be the sequence of events of System & Integration Testing, and how will the testing activity take place?

4.1 Performance and Stress Testing

Definition:

List what is your understanding of Stress Testing for your project.
This project has been built on a particular dataset of hepatitis patients, so the results may change according to different datasets, and according to different attributes of the dataset. The software is flexible for most of the parts only for the prediction part can be done and maintained manually.

This software gives some errors when compiled with the python 3.9 interpreter. Therefore it is advised to use only 3.8 python interpreter for testing purpose

Participants:

Who will be conducting Stress Testing on your project? List the individuals that will be responsible for this activity.

Methodology:

Describe how Performance & Stress testing will be conducted. Who will write the test scripts for the testing, what would be the sequence of events of Performance & Stress Testing, and how will the testing activity take place?

4.1 User Acceptance Testing

Definition:

The purpose of the acceptance test is to confirm that the system is ready for operational use. During acceptance tests, end-users (customers) of the system compare the system to its initial requirements.

Participants:

Who will be responsible for User Acceptance Testing? List the individuals' names and responsibility.

Methodology:

Describe how the User Acceptance testing will be conducted. Who will write the test scripts for the testing, what sequence of events of User Acceptance Testing, and how will the testing activity take place?

4.1 Batch Testing

4.2 Automated Regression Testing

Definition:

Regression testing is the selective retesting of a system or component to verify that modifications have not caused unintended effects and that the system or component still works as specified in the requirements.

Participants:

Methodology:

4.7 Beta Testing

Participants:

Methodology:

5.0 HARDWARE REQUIREMENTS

Computers
Modems

6.1 ENVIRONMENT REQUIREMENTS

6.2 Main Frame

Specify both the necessary and desired properties of the test environment. The

specification should contain the physical characteristics of the facilities, including the hardware, the communications and system software, the mode of usage (for example, stand-alone), and any other software or supplies needed to support the test. Also specify the level of security which must be provided for the test facility, system software, and proprietary components such as software, data, and hardware.

Identify special test tools needed. Identify any other testing needs (for example, publications or office space). Identify the source of all needs which are not currently available to your group.

6.1 Workstation

7.0 TEST SCHEDULE

Include test milestones identified in the Software Project Schedule as well as all item transmittal events.

Define any additional test milestones needed. Estimate the time required to do each testing task. Specify the schedule for each testing task and test milestone. For each testing resource (that is, facilities, tools, and staff), specify its periods of use.

8.0 CONTROL PROCEDURES

Problem Reporting

Document the procedures to follow when an incident is encountered during the testing process. If a standard form is going to be used, attach a blank copy as an "Appendix" to the Test Plan. In the event you are using an automated incident logging system, write those procedures in this section.

Change Requests

Document the process of modifications to the software. Identify who will sign off on the changes and what would be the criteria for including the changes to the current product. If the changes will affect existing programs, these modules need to be identified.

9.0 FEATURES TO BE TESTED

Identify all software features and combinations of software features that will be tested.

10.0 FEATURES NOT TO BE TESTED

Identify all features and significant combinations of features which will not be tested and the reasons.

11.0 RESOURCES/ROLES & RESPONSIBILITIES

Specify the staff members who are involved in the test project and what their roles are going to be (for example, Mary Brown (User) compile Test Cases for Acceptance Testing). Identify groups responsible for managing, designing, preparing, executing, and resolving the test activities as well as related issues. Also identify groups responsible for providing the test environment. These groups may include developers, testers, operations staff, testing services, etc.

12.0 SCHEDULES

Major Deliverables

Identify the deliverable documents. You can list the following documents:
- Test Plan
- Test Cases
- Test Incident Reports
- Test Summary Reports

13.0 SIGNIFICANTLY IMPACTED DEPARTMENTS (SIDs)

Department/Business Area Bus. Manager Tester(s)

14.0 DEPENDENCIES

Identify significant constraints on testing, such as test-item availability, testing-resource availability, and deadlines.

15.0 RISKS/ASSUMPTIONS

Identify the high-risk assumptions of the test plan. Specify contingency plans for each (for example, delay in delivery of test items might require increased night shift scheduling to meet the delivery date).

16.0 TOOLS

List the Automation tools you are going to use. List also the Bug tracking tool here.