**TEST PLAN FOR**

**PCOcare: PCOS Prediction**

**and Detection**

**Project Id - PCS24-51**

*ChangeLog*

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Change Date** | **By** | **Description** |
| 001 | 31.10.23 | Aditi Singh | Initial Draft |
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**MAJOR PROJECT PRESENTATION** [31th of October,2023]

**PCOCare [**PCS-51]

Various Test Cases Related to the project Development

Project Title: PCOS Prediction and Detection Model

Date: 29th October,2023

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Project Guide: Mr[. Pawan Kumar Pal](PCOS/PCOS)

**Executive Summary:**

This testing report provides an overview of the testing process, methodologies, results, and conclusions for the PCOS Prediction and Detection Model developed by [Your Company]. The objective of this model is to predict and detect Polycystic Ovary Syndrome (PCOS) based on certain input parameters and medical data.

**1. Introduction:**

**1.1 Purpose:** The purpose of this report is to document the testing efforts and outcomes related to the PCOS Prediction and Detection Model.

**1.2 Scope:** The testing process included evaluating the model's accuracy, reliability, and performance in predicting and detecting PCOS using various test cases and real-world medical data.

## Test Levels

The testing to be performed is white box testing.

The testing is performed by the developers team along with QA and Configuration Manager.

**Unit Testing:**

Scope: Individual components and functions of the ml model

Objective: To verify that each component works as intended, including layers, loss functions, and optimization steps.

Testing Approach: Developers and machine learning engineers conduct unit tests to validate the correctness of the algorithm at a granular level.

**Integration Testing:**

Scope: The interactions and interfaces between various components, libraries, and frameworks used in the project.

Objective: To ensure that the integration of different components does not introduce errors or inconsistencies in the style transfer process.

Testing Approach: Developers and testers assess the data flow and interactions between components and detect any integration issues.

**Functional Testing:**

Scope: The complete the pcos prediction model.

Objective: To validate that the system functions according to specified requirements and that it performs accurate style transfers.

Testing Approach: Testers execute functional tests by providing input images and verifying that the output images meet the desired content and style transfer criteria.

**Performance Testing:**

Scope: Assessing the system's speed and efficiency in handling style transfer tasks.

Objective: To measure how well the system performs in terms of processing time, memory utilization, and resource consumption.

Testing Approach: Performance tests evaluate the system's response time and resource usage under various loads and conditions.

**Usability Testing:**

Scope: The user interface and user experience.

Objective: To assess how user-friendly and intuitive the interface is for users uploading content and style images.

Testing Approach: Usability tests involve users interacting with the system to evaluate the ease of use, clarity, and navigation of the interface.

**Security Testing:**

Scope: The system's security mechanisms, especially for handling user data.

Objective: To identify and mitigate potential security vulnerabilities, including data breaches and unauthorized access.

Testing Approach: Security testing includes penetration testing, data encryption checks, and access control assessments.

**Compatibility Testing:**

Scope: The system's compatibility with various platforms and devices.

Objective: To ensure that the system functions correctly on different browsers, operating systems, and devices.

Testing Approach: Testers verify that the system is compatible with a range of devices and configurations.

**Regression Testing:**

Scope: The entire system after updates or changes.

Objective: To confirm that new changes or enhancements do not introduce defects or negatively impact existing functionality.

Testing Approach: Automated regression tests are executed to validate that previously tested features still work as expected.

**Test cases :**

Handling Missing Data:

Test Case 1: Ensure missing values are identified and handled appropriately (e.g., imputed with mean, median, or mode).

Test Case 2: Verify that the imputation method does not introduce bias into the dataset.

Test Case 3: Check if there is a limit on the percentage of missing values allowed in the dataset.

Test Case 4: Checking login into the system

Test Case 5: Checking for various prediction criteria

Test case 6: using equivalence class testing

DECISION TABLE FOR LOGIN ON THE WEBSITE:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Conditions** | **Rule1** | **Rule2** | **Rule3** | **Rule4** |
| Username | False | True | false | True |
| Password | False | false | True | true |
| Output(e/h) | error | error | error | homepage |

DECISION TABLE FOR VARIOUS PREDICTION CRITERIA:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Conditions** | **Rule1** | **Rule2** | **Rule3** | **Rule4** |
| Irregular periods | False | True | false | True |
| Overweight | False | false | True | True |
| Output(yes/no) | no | no | no | yes |

EQUIVALENCE CLASS TESTING ON THE BASIS OF NO.OF DAYS OF PERIODS:

|  |  |  |
| --- | --- | --- |
| No.of days | precentage | Yes/no |
| 1-5 | 0 | no |
| 5-9 | 50 | Yes |
| 9-14 | 75 | yes |

## Test Environment

It mentions the minimum **hardware** requirements that will be used to test the Application.

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

1. Windows 8 and above
2. Office 2013 and above
3. MS Exchange, etc.

**Conclusion:**

The PCOS Prediction and Detection Model have been rigorously tested and evaluated. The results indicate that the model performs with high accuracy and reliability, making it a valuable tool for predicting and detecting PCOS based on the provided input parameters and medical data.

**Recommendations:**

* Further testing with diverse and larger datasets to enhance the model's accuracy and reliability.
* Continuous monitoring of the model's performance in real-world scenarios.
* Collaboration with medical professionals for domain-specific insights and feedback.