Weapon Zeroing System and Warriors' Range Efficiency Analysis for Bangladesh Army

Software Testing Documentation
Document

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Chapter 1

Introduction

A software test plan is a documentation describing software testing scope and activities. It is the basis for formally testing any software/product in a project. A test plan also contain details of who will perform a given task. Wikipedia definition: A test plan is a document detailing the objectives, target market, internal beta team, and processes for a specific beta test for a software or hardware product.

1.1 Objectives

The purpose of test plan document is to provide details on how testing process will be conducted for a given project. It contains the testing objectives and tasks where the scope of testing is identified at high level. A test plan serves as a road map to the testing process that has all the necessary details related to the process. It serves a means of communication between the team members and stakeholders and keeps a record of what was tested in a particular release, along with any comments or conversation notes.

1.2 Testing Strategy

A test strategy is an outline that describes the testing approach of the software development cycle. It is created to inform project managers, testers, and developers about some key issues of the testing process. The following strategy will be followed:

- Methodical Testing Strategy: Here test teams follow a predefined quality standard (like ISO25000), checklists or simply a set of test conditions. Standard checklists can exists for specific types of testing (like security), application domains. For instance, in case of this project software testing, a checklist describing important functions, their attributes, etc. is defined and those will be tested sequentially.

1.3 Scope

Testing will be performed at several points in the life cycle as the product is constructed. Testing is a very 'dependent' activity. As a result, test planning is a continuing activity performed throughout the system development life cycle. Test plans must be developed for each level of product testing.

1.4 Reference Materials

1.5 Definitions and Acronyms

Chapter 2

Test Items

The following test items will be focused here in the testing process:

- Requirement Specification
- Design Specification
- Features (availability, response time)

Chapter 3

Features to be tested

The software section of the project contains two section: mobile application and the web application.

3.1 Mobile Application Features for Testing

The mobile application section contains the following elements which are to be brought under testing procedure:

- Feature#1
  - Name of Feature: Image Crop feature.
  - Input: Take image from gallery or capture using mobile camera.
  - Output: Crop the target part from image and send for processing.
  - Testing Type: Unit Testing.
  - Criteria Assessment: It is to be checked whether the app can crop the target part of the image trimming all other unnecessary items from the captured image properly.
- Feature#2
  - Name of Feature: Image processing feature.
  - Input: Image of target.
  - Output: Determine the bullet impression from target.
  - Testing Type: Unit Testing.
  - Criteria Assessment: The image process section of app is the most vital part of the project which is the first thing which is to be cross checked properly and repeatedly. It is to be checked whether the impression calculated from the image processing is approximately equal to the real time calculation done manually.
- Feature#3
  - Name of Feature: Individual firer account data handling.
  - Input: Log-in using user name and password.
  - Output: Get access to user account and display all the information relevant to the firer.
  - Testing Type: Integration Testing.
  - Criteria Assessment: Individual firer must be able to access their own account and their relevant information from the server database. Besides his firing performance will be shown based on which firer can judge himself.

3.2 Web Application Features for Testing

The web application section has the following items which are to be tested:

- Feature#1
  - Name of Feature: Machine learning feature of the web application.
  - Input: Previous data sheet of firer.
  - Output: Machine based on the previous data of firing of the firer can answer whether the weapon of the firer is to be zeroed or not.
  - Testing Type: Integration Testing.
  - Criteria Assessment: Machine learning of the data from bullet impression data sheet. The machine learning is applied here to determine whether zeroing is required for the weapon based on previously recorded impress data. However this is to be tested manually whether the confidence achieved from machine learning result matches with the real time.

Appendices

The following documents are attached hereby:

1. Project Plan
2. Base File
3. Project Proposal
4. System Architecture
5. Work Flow Diagram