SOFTWARE TESTING DOCUMENT (AUTOMATIC LAUNDRY SYSTEM)

Contents

Revision History

Revision	Date	Author(s)	Description
1.1	06.08.2019		Chapter 1 - Introduction, Chapter 2 - Test Item,Chapter 3 - Features To Be Tested
1.2	27.08.2019		Chapter 2 - Test Item, Chapter 3 - Features To Be Tested, Chapter 4 - Software Testing Chapter 5 - Pass/Fail Criteria, Chapter 6 - Testing Schedule
1.3	17.09.2019		Chapter 4 - Software testing, Chapter 5 - Pass/Fail Criteria,Chapter 7 - Environmental Requirement

Chapter 1

Introduction

The Test Plan has been created to describe the approaches and methodologies that will apply to testing of the Automatic Laundry System .The Software Test Plan (STP) is designed to prescribe the scope, approach, resources, and schedule of all testing activities. The plan will identify the items to be tested, the features to be tested, the types of testing to be performed, the personnel responsible for testing, the resources and schedule required to complete testing, and the risks associated with the plan. This document has clearly identified what the test deliverable will be, and what is deemed in and out of scope.] Automatic Laundry System is a machine which uses an innovative way to do ironing, folding and packaging of various cloths by minimizing the difficulties of doing the tasks and reducing the work time. It is designed in a way where the effectiveness and efficiency had been maintained by proper testing.

The Test Plan has been created to describe the approaches and methodologies that will apply to testing of the Automatic Laundry System .The Software Test Plan (STP) is designed to prescribe the scope, approach, resources, and schedule of all testing activities. The plan will identify the items to be tested, the features to be tested, the types of testing to be performed, the personnel responsible for testing, the resources and schedule required to complete testing, and the risks associated with the plan. This document has clearly identified what the test deliverable will be, and what is deemed in and out of scope.

1.1 Objective

A primary objective of testing is to assure that the system meets the full requirements, including quality requirements (functional and non-functional requirements) and fit metrics for each quality requirement and satisfies the use case scenarios and maintain the quality of the product. At the end of the project development cycle, the user should find that the project has met or exceeded all of their expectations as detailed in the requirements. Any changes, additions, or deletions to the requirements document, Functional Specification, or Design Specification will be documented and tested at the highest level of quality allowed within the remaining time of the project and within the ability of the test team.

1.2 Testing Strategy

Testing is the process of analyzing a software item to detect the differences between existing and required conditions and to evaluate the features of the software item. The approach, that used, is Methodical therefore, in accordance to full fill the user requirement where an analysis of the requirements specification forms the basis for planning, estimating and designing tests. Test cases will be created during exploratory testing. All test types are determined in Test Strategy. Testing will use experience-based testing and error guessing utilize testers' skills and intuition, along with their experience with similar applications or technologies.

1.3 Scope

Testing is performed in a several phases of SDLC life cycle. In the system we followed development testing after the partial implementation. As different parts of the system is dependent on each other. Without successfully completing the design, development and testing of folding part, we couldn't move to the ironing part. As folding part contains the major structure of the system. After completing the iron part, the ironing section was tested. As the packaging part is dependent on the structure of the ironing part. So in every phase after completing one section, that specific section was tested.

1.4 Reference Material

"Katalon Studio" is used as a software testing tool.

Chapter 2

Test Item

- Accuracy
- Response time
- Responsiveness
- Security
- Reliability

Chapter 3

Features To Be Tested

- **Name Of The Feature :** Scanning QR Code
  - **Input :** QR Code
  - **Expected Output :** User Information
- **Testing Type :** Integration Testing
  - Clearly scanning the QR code is important to fetch user information from the database.
- **Criteria Assessment :** Accuracy
- **Name Of The Feature :** Graphical View
  - **Input :** User usage information
  - **Expected Output :** Graphical view of user usage
- **Testing Type :** Integration Testing
  - While fetching lots of information to show in a graph it takes time to perfectly showing the points.
- **Criteria Assessment :** Response Time
- **Name Of The Feature :** Graphical View
  - **Input :** Navigation Button
  - **Expected Output :** Expected page of the application
- **Testing Type :** System Testing
  - After pressing the navigation button for moving to the next page or previous page of the application it shows blank page.
- **Criteria Assessment :** Responsiveness
- **Name Of The Feature :** Login System
  - **Input :** User name and Password
  - **Expected Output :** Successful login
- **Testing Type :** Unit Testing
  - When user name and password is provided in spite of being correct it sometimes doesn't authenticate.

- **Criteria Assessment :** Security

- **Name Of The Feature :** Billing System
  - **Input :** Usage information
  - **Expected Output :** Updated balance
- **Testing Type :** System Testing
  - After using the system the user bill has to be updated with the new balance sometimes it takes time to update with the new bill.
- **Criteria Assessment :** Reliability

Chapter 4

Software Testing

4.1 Development Testing

- **Unit Testing**
  - Security - Login System (When user name and password is provided in spite of being correct it sometimes doesn't authenticate.)
- **Integration Testing**
  - Accuracy - Scanning QR Code (Clearly scanning the QR code is important to fetch user information from the database.)
  - Response Time - Graphical View (While fetching lots of information to show in a graph it takes time to perfectly showing the points.)
- **System Testing**
  - Responsiveness - Navigation (After pressing the navigation button for moving to the next page or previous page of the application it shows blank page.)
  - Reliability - Billing System(After using the system the user bill has to be updated with the new balance sometimes it takes time to update with the new bill.)

Chapter 5

Pass/Fail Criteria

Feature	**Criteria**	**Pass**	**Fail**
Scanning QR Code	Accuracy	When clearly scanned the QR code and user information is showed properly.	When system failed to scan the QR code
Graphical View	Response time	While showing the graph in real time	While it takes time to show the graph
Navigation	Responsiveness	While properly navigated to destination page of the application	When it failed to go to the destination page of the application
Login System	Security	After authenticated properly if it login to the system	If correct username and password is given but it failed to login.
Billing System	Reliability	If billing information is updated after use and after recharging the account	If billing information doesn't change after the worked done.

Chapter 6

Testing Schedule

Test Name	**Duration**	**Start**	**Finish**
Testing Plan	3 days	Sun 3/31/19	Wed 6/8/19
Folding Machine	4 days	Wed 4/24/19	Sun 4/28/19
Ironing Machine	7 days	Sun 5/12/19	Thu 5/16/19
Vending Mechanism	5 days	Mon 7/8/19	Thu 7/11/19
Integrate VM and Folding Machine	4 days	Wed 7/24/19	Mon 7/29/19
Integrate VM and Ironing Machine	3 days	Mon 7/22/19	Tue 7/23/19
Integrate VM,Folding and Ironing	3 days	Tue 7/30/19	Thu 8/1/19
Software Development	4 days	Sun 8/18/19	Wed 8/21/19
Software and VM intigration	4 days	Wed 9/18/19	Sun 9/22/19
Overall Intigration	4 days	Wed 8/28/19	Sun 9/1/19
Packaging Machine	2 days	Mon 9/9/19	Tue 9/10/19
Intigration with Packaging	1 day	Wed 9/11/19	Wed 9/11/19
Final testing	5 days	Sun 3/31/19	Sun 4/7/19
Testing Complete	0 days	Sun 3/31/19	Sun 9/11/19

Chapter 7

Environmental Requirement

7.1 Hardware

- LED Screen
- Pneumatic Cylinder
- Camera Module
- Solenoid Valve
- Solenoid Valve Base
- Air Compressor
- Air Compressor Oil
- Pipe
- Filter
- Nipple
- Bearing
- Rod Frame
- Nut
- Wooden Frame
- Bucket
- Heater
- PVC Board
- Raspberry Pi
- Arduino Mega
- Gear Motor
- Metal Gear Motor
- Gear Motor Driver
- Conveyor Belt
- Relay

7.2 Software

- Android Studio

7.3 Tools

- Katalon Studio

7.4 Risks Assumptions

- **Risks :** As the proposed system can process only shirts and pants. When using the same folding plate for shirt and pant, the shirt and pant have to place in their respective place.
- **Assumptions :** The proposed system uses air compressor to lift up the pneumatic cylinder. Sometimes after several round of usage pressure can differentiate which will create problem to lift up the pneumatic cylinder. By using less powerful air compressor we assume that the pressure will be same for every round of usage.