# Software Testing

**PROJECT NAME: SMART VENDING MACHINE**

**COURSE NAME: INTEGRATED DESIGN PROJECT-02**
**COURSE CODE: CSE-460**

**GROUP NO: JULIETT (08)**

**SECTION: A**

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# Required Platforms:

| Name | Description |
|---|---|
| MIT App Inventor   | MIT App Inventor is a free and open-source web application integrated development environment to create apps for Android and iOS. For this project the version for Android has been used to make the Smart Vending Machine (SVM) app. |
| Firebase  | Firebase is an online database platform developed by Google for creating mobile and web applications. Up to 1GB data can be stored in this platform. This platform has been used to connect with the backend database for our app. |
| MIT AI2 Companion  | A testing mobile app used for unit testing and system testing for our Smart Vending Machine. |
| Arduino IDE   | The Arduino Integrated Development Environment (IDE) is a cross-platform application written in functions from C and C++. It is used to write and burn the codes to interact among different hardware parts and the app of our project. |

For testing different functionalities of our Smart Vending Machine (SVM) App and the related hardware parts we have used the app MIT AI2 Companion.

## Software Testing:

### Test Case 1: User cannot login using wrong password

Information stored in Database after signing up:
Username: ebc
Mobile No: 1234
Password: 123

| Given Input (Username) | Given Input (Mobile No) | Given Input (Password) | Result | Time Required | Warning Message |
|---|---|---|---|---|---|
| ebc | 1234 | 1234 | Login not successful | 0.5s | Incorrect Info |
| ebc | 1234 | 123 | Login successful | 0.5s | |

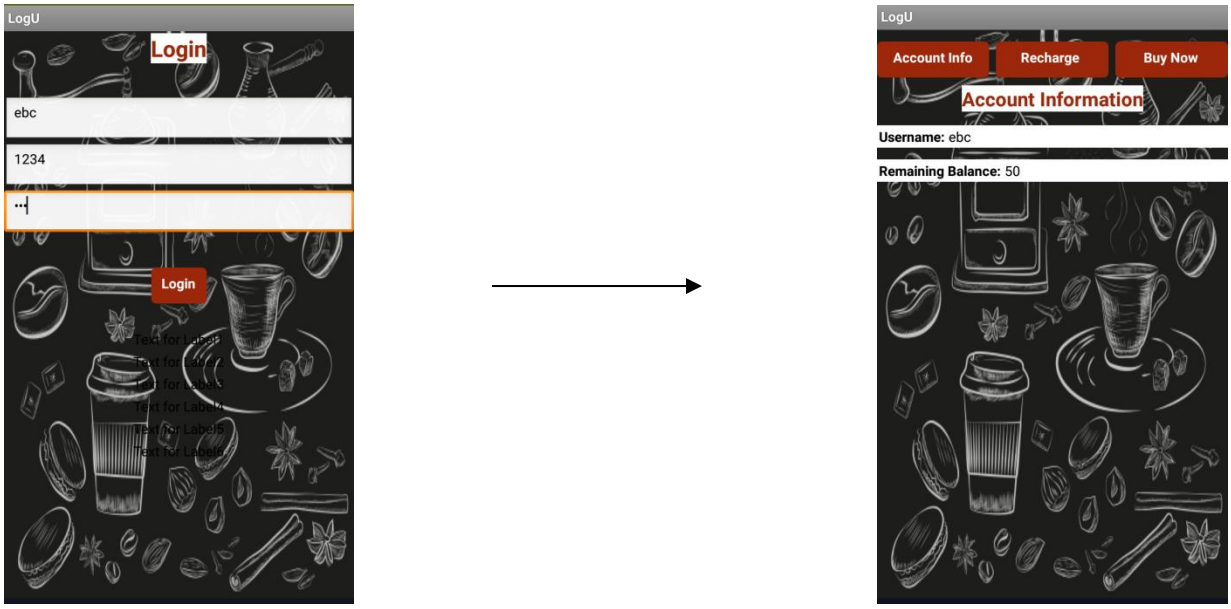


Fig:1.1 Output when giving user input Correctly

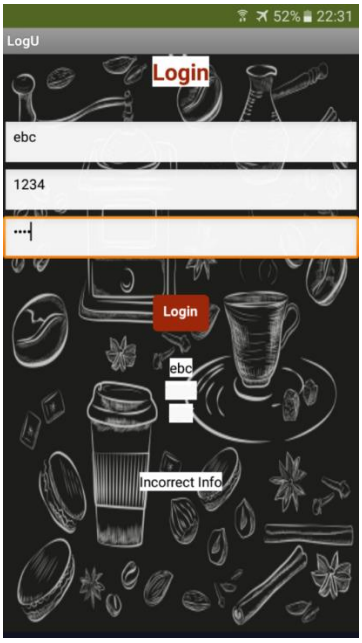

Fig:1.2 Output after giving wrong password

**Test Case 2:** Checking if the given amount is perfectly deducted from the credit card limit in database while recharging

**This test was done while logging in with the information from Test Case 1.

Information stored in Database:
Username: ebc
Mobile No: 1234
Password: 123
Credit Card Number: 12345678
CVV Number: 123
Name on Card: EBC
Card Amount Limit: 380tk
Already Recharged Amount: 380tk

| Given Input (Card Number) | Given Input (CVV) | Given Input (Name on Card) | Given Input (Recharge Amount) | Result (Card Amount Limit) | Result (Already Recharged Amount) | Time Required | Confirmation Prompt |
|---|---|---|---|---|---|---|---|
| 12345678 | 123 | EBC | 5 | 375 | 385 | 0.5s | Recharge Successful |
| 12345678 | 123 | EBC | 577 | 375 | 385 | 0.5s | Recharge Not Possible |

**Testing after integration of Bluetooth Vending Machine with the SVM app:**

**Test Case 3:** If the app can get connected with our Vending Machine using Bluetooth

Paired Smart Vending Machine name: HC-05

| Device Status | Connection with SVM app | Time Required | Warning Message |
|---|---|---|---|
| HC-05 OFF | Not Successful | 2.5s | Cannot Connect. Is the Bluetooth Device ON? |
| HC-05 ON | Successful | 1s | Connected with Vending Machine 1 |

## **Test Case 4:** If the app can detect whether a product dropped or not

**This test was done while logging in with the information from Test Case 1 and the app connected with Smart Vending Machine name HC-05 from Test Case 3

| Selected Product Status | Sonar Sensor Status | Time Required | Warning Message |
|---|---|---|---|
| Product not dropped | Nothing was detected | 2s | Nothing |
| Product dropped | Detected | 1s | Detected |

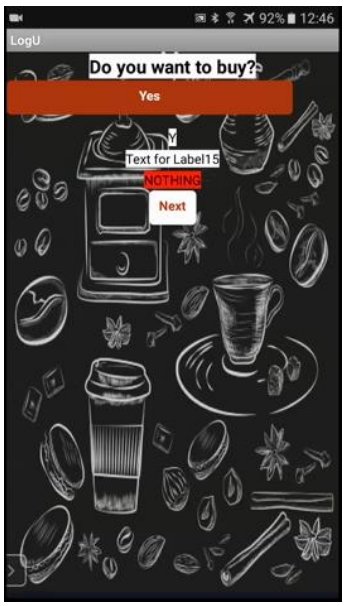


Fig:1.3 Warning when no product is dropped

Fig:1.4 Detection Successful when product is dropped

The following tests are done continuously while developing the SVM app:

- If the correct information is getting stored in the Database
- If correct information is fetched from the Database
- If the warning messages are shown correctly
- If the pages are loaded without malfunction