

**GRAphical user interface programming(GUI)**

**Assignment 3**



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# 1.Abstract

In this application system testing is with graphical user interface such as web browser, desktop or mobile app it is more complex than testing from the command line. Specialize tools are needed to generate and run test cases, model is needed to quantify behavioural coverage and changes in the environment such as the operating system and impact the repeatability of the outcome of tests making tests appear flaky.

# 2. Introduction

This application is about covid 19 in this graphical user interface is an integral component of contemporary computer software. A stable and reliable GUI is necessary for correct functioning of software application. In which, verification of the GUI is a routine part of most software development life cycles. The input space of a GUI is typically large, and it is difficult. These methods are made a formal model of GUI like model-based methods, which target specific GUI interaction and have been developed. GUI defect are often revealed by exercising parts of the GUI which interact each other.

# 3. Task 1

## 3.1. Modal for application GUI

For application I use ER diagram to explain this application working. ER diagram an entity relationship diagram (ERD) which is a visual representation of different entities within a system and how they are related to each other. There is some point that show how to go about creating an ER diagram: -

1. **Identify all the entities: -** In this system an entity should appear only once in a diagram like to create rectangles for all entities and name them properly.
2. **Identify relationship: -** These connect them using a line and add a diamond in the middle describing the relationship.
3. **Add Attribute:** - This gives a meaningful attribute names so they can be understood easily.

These are some GUI testing tools: -

1. Manual based Testing
2. Record and replay
3. Model-based testing

## 3.2. Methods for test plan and test result

A test plan is a set of action executed to verify a feature or function of software application. A test case contains test steps like test data, test steps, precondition, postcondition developed. The test case includes specific variables or conditions.

Test scenarios are rather vague and cover a wide range of possibilities. Testing is all about being specific.

For example, for a test scenario: check login functionality there many possible test cases are:

1.Test case 1: check result on entering valid id and password

2. Test case 2: check result on entering invalid user id and password

3. Test case 3: check response when a user id is empty and login button is pressed and many more

Some are the example for best practice for writing good test case are: -

1.Test case need to be simple and transparent

2. Create test case with end user in mind

3. Avoid test case repetition

4. Do not assume

5. Peer review

## 3.3 Methods for utilised to test and record

For this there are some different type of testing: -

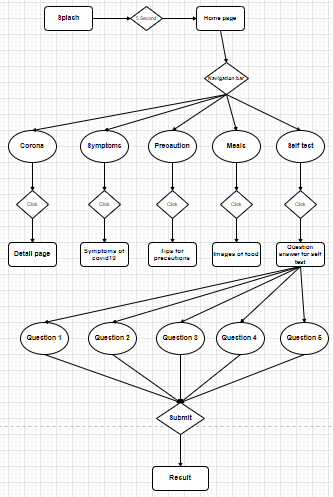
1. **Guerilla testing: -** This is the simplest form of testing in which we are going to some place such as park or coffee shop to ask people about application by randomly to get their feedback.
2. **Lab usability testing: -** lab usability testing run in special environments and supervised by a moderator. A moderator is a professional who is looking to obtain feedback from live user.
3. **Unmoderated remote usability testing: -** this testing occurs remotely without a moderator. It offers quick, robust and inexpensive user testing result to be used for further analysis.
4. **Phone interview: -** it is a remote usability test where a moderator verbally instructs participant to complete tasks on their device and feedback is collected automatically.
5. **Contextual inquiry: -** it less a usability testing method and more like an observation or interview method that help a product team obtain information about the user experience from the user.

For this application I use first method that is **Guerilla testing** and for the code I use **system usability scale (SUS) matrix** because it allows to evaluate a wide variety of product and services, including hardware, software, mobile devices and website.

# 4. Test 2

## 4.1. Model for GUI control and interactive elements

ER diagram for application



Link for my ER diagram: <https://app.diagrams.net/#G1kfAN0Lzh9fe9yaYMUpJLEMISUtOE4woT>

## 4.2. Test result and function of application

System usability scale (SUS) matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Plan #** | **Test Plan Description** | **Test Action/Data** | **Expected Result** | **Actual Result** | **Pass/ Fail** |
| 1 | Check How App start from First Stage | Start Execution on Window | Must Open from Splash Page with Logo | App open from Splash Page with Icon | Pass |
| 2 | Check Navigation using List | Click on Toggle button to verify | Side bar navigation must open. | Navigation open with all list data items. | Pass |
| 3 | Check Click Event on Navigation Data items. | Click on each Data item in Navigation | Specific page must be open for each specific Data item in Navigation | Specific page open for each page  E.g. When Click on Corona: Detailed Page Open,  When Click on Self-Test: Page for Self-Test opened. | Pass |
| 4 | Test Result of Answering the question for Yes and NO and all Yes, all No | Choose Different options to check reliability and Conditions of Code. | 1.When No Answer selected must say Please select all answers.  2. When all No must say You are in good condition.  3. Else change result according to answers | 1. When no answer it says Please Select all Answers.  2When all no answers selected it says Good Result.  3 Works as expected. | Pass |
| 5 | Test Responsiveness | Open app and resize screen size to check responsiveness of App | Must all the layouts and data adjust itself according to screen size | All the layouts and Data Adjusts according to screen size without overlapping | Pass |
| Overall Result | | | | | Pass |

## 4.3. User feedback to application

Matrix to be used for calculating score.

| **SUS Score** | **Letter Grade** | **Adjective Rating** |
| --- | --- | --- |
| Above 80 | A | Excellent |
| Between 60 and 80 | B | Good |
| 60 | C | OK |
| Between 50 and 60 | D | Poor |
| Below 50 | F | Awful |

Result of Evaluation.

|  |  |  |  |
| --- | --- | --- | --- |
| **User No** | **SUS Score** | **Letter Grade** | **Feedback** |
| **1** | **88** | **A** | **Good work** |
| **2** | **64** | **B** | **Nice design** |
| **3** | **61** | **B** | **Need little improvement** |
| **4** | **95** | **A** | **Like the self-test page** |
| **5** | **60** | **C** | **Need to add few things** |

There are many things which learned from like: -

1. I would imagine that most people would learn to use this application very quickly.
2. I found the application is very cumbersome to use.
3. I think that I would need the support of a technical person to be able to use application.
4. I found the application is easy to use.
5. I found the various function in this system were well integrated.

# 5. References

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