KULLIYYAH OF INFORMATION & COMMUNICATION TECHNOLOGY

CSC 3503 SOFTWARE TESTING SEMESTER 2, 2019/2020 SECTION 1

PROJECT: HOSPITAL MANAGEMENT SYSTEM TESTING.

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Kulliyyah of Information and Technology CSC 3503 SOFTWARE TESTING

Hospital Management System Test Plan.

Version: 1.0.2

Project Title: < Hospital Management System>

Date: 06/01/2021

Test Plan ID: <HMS_ 1.0.2>



<International Islamic University Malaysia>

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TEST PLAN i

Project Title : <hospital management="" system=""></hospital>		الجامعة السامية العالمية مالين يا international islamic university malaysia وُضِّ مُرْسِينًا أَشْكُمُ الْمُلْسِنَيَا
Date : 06/01/2021	Test Plan ID: <hms_ 1.0.2=""></hms_>	Clarden of Knowledge and Virtue International Islamic University Malaysia>

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Version	Release Date	Section	Amendments
1.0	26 Dec 2020	All	Initial creation
1.0.2	03 Jan 2021	database test features	Original document.

Distribution List

Version	Release Date	Controll ed Copy No	Recipie nt Name	Department	Issue Date	Return Date
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1.0.2	03/01/2021	03		IIUM_clinic	03/01/2021	



TEST PLAN ii

120112(1)			
Project Title : <hospital management="" system=""></hospital>		الجامعة السامية العالمية ماليزيا international islamic university malaysia مُوْنِدُورِينَ الْمُؤْلِدُمُ الْبُارِالِيْفِينَا مِلْمُسِنْيَا	
Date: 06/01/2021	Date : 06/01/2021		

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TEST PLAN iii

Project Title : <Hospital Management System>

Date : 06/01/2021

Test Plan ID:
<HMS_ 1.0.2>

Test Plan ID:
University Malaysia>

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University Malaysia>

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TEST PLAN iv

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Project Title : <hospital management="" system=""></hospital>		الجامعة السامية العالمية ماليزيا INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA وُنْ يَارِشُ الْمِنْ الْزُالِمُ الْبُارِانِجُسُوا مِلْكُمِيْتُمَا وَلَوْسُونِي الْمُنْ الْرُالْبُارِانِجُسُوا مِلْكُمِيْتُمَا
Date : 06/01/2021	Test Plan ID: <hms_ 1.0.2=""></hms_>	Garden of Knowledge and Virtue International Islamic University Malaysia>

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TEST PLAN 0

Project Title : <hospital management="" system=""></hospital>		الجامعة السائية العالمية مالين المتحالية المالية الما
Date : 06/01/2021	Test Plan ID: <hms_ 1.0.2=""></hms_>	Carden of Knowledge and Virtue International Islamic University Malaysia>

1.0 Introduction

1.1 Purpose

This software test plan (STP) seeks to elaborate on the test strategy, objectives, schedule, estimation, deliverables, and resources required to perform testing for a Hospital Management system (HMS). Hospital Management System is an integrated software that handles different directions of clinic workflows in an efficient and quick way. HMS involves patients, hospital staff and management, and third-parties like drug suppliers and insurance companies. Our team intends to carry out this testing through a proactive approach; an approach in which the test design process is initiated as early as possible in order to find and fix the defects before the build is created.

By the end of the testing process, the aim is to fulfill the following objectives:

- To ensure the system performs and functions accurately (runs without failures);
- To define whether the system meets all the requirements;
- To describe the activities required to conduct the testing;
- To define the test tools and environment needed for the testing;
- the system does what it is expected to do;
- automates the hospital's workflows efficiently;
- optimizes the resources utilization.

1.2 Scope

Black box-functional testing is included in the scope of testing for attributes developed in the Hospital Management System from F001 to F008. This test plan does not include unit test, static test, integration test, acceptance test, regression test, confirmation test and other types of tests which are not mentioned in this Test Plan. It will mainly focus on meeting the requirements of the system and ensuring that the system is qualified for the intended purpose or goal.

1.3 References

The following IEEE standards have been referenced in preparation of this document:

- I. IEEE 829-1983 IEEE Standard for Software Test Documentation
- II. IEEE 829-1998 IEEE Standard for Software Test Documentation
- III. IEEE 829-2008 Standard for Software and System Test Documentation



TEST PLAN 1

Project Title : <hospital management="" system=""></hospital>		الجامعة السلامية العالمية ماليزيا INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA وُنْ يَارِينُ أِنْ الرَّانِةُ بِيَا مِلْيُسْنِياً
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2.0 Test Plans

2.1 Test Items

The following documents will provide the basis for defining correct operation;

- "Document Hospital Management System" System Requirement Specification (SRS)
- "Document Hospital Management System" System Design Specification (SDS)

2.2 Test Traceability Matrix

ReqNo.	Risk Level	Function desc.	Source of function.
f001	High	GUI	SRS
f002	High	Bill	SRS
f003	High	Check-in and check- out patient	SRS
f004	High	Authorization	SRS
f005	High	Basic operations; add/update/delete/vi ew/search	SRS
f006	High	Advanced operations; start/stop, backup, data recovery	SRS
f007	High	Database test	SRS
f008	High	Exit System	SRS



TEST PLAN 2

Project Title : <hospital management="" system=""></hospital>		الجامعة السلامية العالمية ماليزيا ivrenational islamic university Malaysia مُنْ يُرُسِينِينَ الْمُرْكُرُ أَنْهَا رَا يُغْمِينًا مِلْكُمِينَا
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2.3 Features to be Tested

The following table contains the features to be tested based on "Document Hospital Management System" Software Requirement Specifications (SRS). Listed together are the function id and its corresponding functions and estimated risk level.

•	<u> </u>	T
Function ID	Function desc.	Risk Level
f001	GUI	High
f002	Bill	High

f003	Check-in and check-out patient	High
f004	Authorization	High
f005	Basic operations; add/update/delete/view/sear ch	High
f006	Advanced operations; start/stop, backup, data recovery	High
f007	Database test	High
f008	Exit System	High

2.4 Features Not to be Tested

Features that are not going to be tested apart from those mentioned in section 2.3 are;

- I. Network Security; Security is not tested as the test plan is designed for functional tests.
- II. Operation procedure; The test plan is precisely meant for system level test, thus operation procedure is not covered.



TEST PLAN 3

Project Title : <hospital management="" system=""></hospital>		الجامعة السامية العالمية مالين يا international islamic university malaysia يُونِيُنُ رِيشِيْنَ الشِّلْوْنَ الْبِيَارِ الْبِقْيِيا مِالْمِسْتِيَا
Date : 06/01/2021	Test Plan ID: <hms_ 1.0.2=""></hms_>	Garden of Knowledge and Virtue International Islamic University Malaysia>

lii. Nonfunctional requirements; As this test plan is designed for functional requirements test, Nonfunctional requirements are not covered.

2.5 Test Approach or Test Strategy

The test on "Document Hospital Management System" is a system level functional test which solely focuses on the functional parts of the system, thus testing will be carried out using risk-based strategy.

The test will also be a black-box test whereby the test cases will be derided using black box testing technique which include;

- Boundary value analysis.
- Equivalence Testing
- State transition table
- Decision table testing
- Graphical testing approach
- Use case testing
- Comparison testing

Testing will be executed in 2 iterations. First iteration is testing functionality of database test features and the second iteration will be testing all other features (except for database test features) as defined in the Features To Be Tested section. Dedicated testing environment will be used, as defined in section 3.2. Any defect found will be fixed in the next release version.

2.6 Item Pass/Fail Criteria

The system is said to have satisfied the passing criteria when:

- All test cases are completed
- A maximum of 10% error detection is tolerated for each test case
- No deadlock during operation
- No error in protecting patients' information and medical prescription

Other than that, all test items must fulfil its requirement as stated in the system requirements specifications.



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Date: 06/01/2021	Test Plan ID: <hms_ 1.0.2=""></hms_>	Content of Knowledge and Virtue International Islamic University Malaysia>

2.7 Suspension Criteria and Resumption Requirements

- Suspension criteria:
 - When a module that is related to other modules happens to have defects.
 - In cases where the three actors aforementioned can't communicate accurately.
- Resumption requirements:
 - When the defected module gets back working fine.
 - When the communication is reestablished .

2.8 Test Deliverables

Test documentation:

- Test Plan document
- Test Strategy
- Test Scenarios document
- Test Design standards
- Test Case document
- Traceability matrix
- Test execution reports
- Bug reports
- Test summary reports
- Test Data
- Flow document
- Test Metrics
- Test Closure report

2.9 Entry Criteria

Items required before the testing begins:

- Requirements document for Hospital Management System (attached PDF)
- Quality assurance team (QA team)
- Software under test: Hospital Management System

TEST PLAN 4

Project Title : <hospital management="" system=""></hospital>		الجامعة السالمية العالمية ماليريا ivrenarional. islamic university malaysia وُنِتُ رُسِنِينَ النِّهِ الْمُرَادِينَ النِّهِ الْمُرَادِينَ النِّهِ الْمُرْادِينَ النِّهِ الْمُرْادِينَ الْمُرادِينَ النِّهِ الْمُرادِينَ المُرادِينَ الْمُرادِينَ الْمُرادِينَ الْمُرادِينَ المُرادِينَ المُرْدِينَ ا
Date : 06/01/2021	Test Plan ID: <hms_ 1.0.2=""></hms_>	Company No. 100087-19 Garden of Knowledge and Virtue International Islamic University Malaysia>

2.10 Exit Criteria

Requirements to be met for the testing to end:

- All tests deliverables have been delivered.
- Test plan execution has been executed.
- Open defects at the final iteration shall be: zero fatal defects, zero major defects, at most 3 minor defects.

3.0 Test Management

3.1 Planned Tasked and Activities

The table below shows the set of tasks necessary to prepare for and perform testing for the Hospital Management System. It identified dependencies of other tasks and significant constraints such as test item availability, testing resources availability and deadlines.

No	Task	Activity	Target Date
01	Test planning and control	i. Define test project scope and objectives ii. Requirement view iii. Identified risks, staffing and scheduling iv. Documenting test plan v. Technical review vi. Submission and approval of test plan	06/01/2021
02	Test analysis and design	i. Analyze product ii. Develop test design specification iii. Prepare test case specification	15/01/2021
03	Test environment	i. Setup Hospital Management System ii. Identify and acquired test data	13/01/2021
04	Test implementation and execution.	i. Prepare test procedure specification ii. Perform smoke test iii. Perform functional test iv. Record test result v. Analyze test result	
05	Documenting test summary report	i. Summarize test result	05/01/2021
06	Documenting test closer	i. Collecting test process data from completed activities to consolidate experience, testware, facts and numbers.	06/01/2021
07	Test complete	i. Delivery of product to client	06/01/2021

3.2 Environment & Infrastructure

To be used efficiently, all computer software needs certain hardware components or the other software resources to be present on a computer. These prerequisites are known as(computer)system requirements and are often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements: minimum and recommended. With increasing demand for higher processing power and resources in newer versions of software, system requirements tend to increase over time. Industry analysts suggest that this trend plays a bigger part in driving upgrades to existing computer systems than technological advancements.

3.2.1 Hardware:

The following table shows the hardware requirements of Hospital Management System that will be used to install HMS.

Hardware Name	HP
Processor	Intel dual Core ,i3
Ram	2 GB
Hard Disk	80 GB

3.2.2 Software:

Software Requirements deal with defining software resource requirements and prerequisites that need to be installed on a computer to provide optimal functioning of an application. These Requirements or pre-requisites are generally not included in the software installation package and need to be installed separately before the software is installed.

Operating System	Windows 10/Linux Distro
Front End	HTML, CSS, JavaScript
Server Side Script	Php
Database	MySql

3.3 Responsibility and Authority

In this section, all the individuals or groups with their responsibilities managing, designing, preparing, executing, witnessing, and checking results of this testing will be identified. In addition, it will identify the persons responsible for providing the test items in Section 2.0 and environmental needs identified in Section 3.2.

Name	Roles	Responsibilities
Ahmed Ayub Mohamed	Test Manager	 Assure the proper planning and management of the test ressources. Assure the effectiveness of the test effort. Promote the proper level of quality by resolving important defects .
Cisse Mamadou Thiana	Test Lead	 Implementing and managing the testing framework is in compliance with testmandate Carry out the planning, managing and deployment of the testing. Managing and growing Testing assets required for meeting the

		testing mandate
Huda MD Najmul	Test Analyst	 Identifying the target test case to be evaluated. Defining the appropriate tests required and any associated Test Data. Assemble and manage the test date Evaluating the outcome of each test cycle
Thant Sin Oo	Tester	 Test Case Development Test Data preparation. Test Execution and Results logging. Defect Analysis & Reporting. Re-tests for Fixes



TEST PLAN 5

Project Title : <hospital i<="" th=""><th>الجامعة السلمية العالمية عاليزيا المستخدمة السلمية العالمية عاليزيا والمستخدمة المستخدمة المستخ</th></hospital>	الجامعة السلمية العالمية عاليزيا المستخدمة السلمية العالمية عاليزيا والمستخدمة المستخدمة المستخ			
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3.4 Resources and Allocation

In this section list down all relevant additional required resources which are not included in the document. This includes the internal or external resources.

3.4.1 External Resources

There are no external resources required in system testing.

3.4.2 Internal Resources

There are no internal resources required in system testing.

3.5 Training

All personnel that are involved in this testing require training on Hospital Management System according to their responsibility.

- i. Training on the correct use of Hospital Management System.
- ii. Training on the important features in Hospital Management System.



TEST PLAN 6

Project Title : <Hospital Management System>

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Test Plan ID:
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3.6 Schedules, Estimates and Costs

Task	Milestone	Days	Duration
Test Planning and control	Submission of Test Plan for sign- off.	9	18/11/20 - 27/11/20
Test Analysis and Design	Submission of Test Design Specification, Test Case Specification, and Test Procedure Specification	10	27/11/20 - 07/12/20
Test Environment	Setup of test Environment and	5	07/12/20 - 12/12/20
Test Implementation and Execution	Execution of system test of hospital management system	21	13/12/20 - 04/01/21

Documenting Test Summary Report	Submission of Test Summary Report	1	04/01/21 - 05/01/21
Documenting Test Closure	Submission of Test Closure	1	05/01/21 - 06/01/21
Test Complete	Submission of the result	1	06/01/21



3.7 Risk and Contingency

This section identifies the risk issues that may impact successful completion of the system testing activities of Scanner app. The potential likelihood, impact and mitigation plans are described in the following tables

Rating	for Likelihood for Each Risk
1	Rated as Low
2	Rated as Medium
3	Rated as High
4	Rated as Extreme

Table 3.7.1 Likelihood Rating Table

Rating	for Impact for Each Risk
1	Rated as Low
2	Rated as Medium
3	Rated as High
4	Rated as Extreme

Table 3.7.2 Priority Rating Table



Function ID	Risk Description	Likelihood	Impact	Risk Exposure	Risk Treatment Plan	People Responsible	Cost
F001	System unable to start	2	4	8	Perform functional test and use at least 2 test techniques	Test Team	-
F002	System unable to print bill	2	3	6	Perform functional test and use at least 2 test techniques	Test Team	-

F003	Can't add and remove patient	4	4	16	Perform functional test and use at least 4 test techniques	Test Team	-
F004	Can't access the detail of patient from other department	4	4	16	Perform functional test and use at least 4 test techniques	Test Team	-
F005	Can't edit patient detail	4	4	16	Perform functional test and use at least 4 test techniques	Test Team	-
F006	Can't backup the system or restore	4	4	16	Perform functional test and use at least 4 test techniques	Test Team	-
F007	Unable to find the server	3	3	9	Perform functional test and use at least 3 test techniques	Test Team	-
F008	Unable to exit	3	3	9	Perform functional test and use at least 3 test techniques	Test Team	-

4.0 General

4.1 Metrics

The following metrics will be collected and used to monitor the progress.

Metric List	Metric Description	Goals

Actual duration vs. plan (variance)	Metric to monitor the project progress compared to the plan	Allow 10% delay
Percentage of test cases run during test execution	Metric to monitor total number of test cases executed	100%
Percentage of test cases passed against total of test cases executed	Metric to monitor total number of test cases executed with Passed criteria	All high-risk test cases passed
Percentage of baseline requirement covered against total test cases	Metric to monitor total number of baseline requirement coverage	100%

4.2 Glossary

Term	Definition
SDS	Software Design Specification
SRS	Software Requirement Specification
TP	Test Plan
HMS	Hospital Management System
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets

4.3 Incident Classification

Impact

Mission Critical: Application will not function or system fails

Major : Severe problems but possible to work around

Minor: Does not impact the functionality or usability of the process is not according to

requirements/design specifications

Priority

Immediate: Must be fixed as soon as possible

Delayed: System is unstable but incident must be fixed prior to next level of test or shipment

Deferred: Defect can be left in if necessary due to time or costs



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