




TEST PLAN

KAU Hospital System (KHS)
Independence Verification and Validation


Version : 1.0.0
Date : 06/24/2024

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

Document Control

Document Name	KHS Test Plan
Reference Number	KHS_TP
Version	1.0.0
Project Code	SAADA_KHS
Status	In-use
Date Released	6 th of April, 2024

Name	Position	Signature
Prepared By: Amylia Natasya	Test Analyst	
Prepared By: Danisha Azra	Test Lead	
Reviewed By: Shahrul Amin	Test Automation Engineer	
Approved By: Nur Aisyah	Tester	
Approved By: Adiba Alya	Test Manager	

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

Version History

Version	Release Date	Section	Amendments
1.0.0	06/04/2024	All	Original Document

Distribution List

Version	Release Date	Controlled Copy No	Recipient Name	Department	Issue Date	Return Date
1.0.0	06/04/2024	01		Testerontop Test Team	06/04/2024	



Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

Table of Content

Document Control.....	1
Version History.....	2
Distribution List.....	2
Table of Content.....	3
1.0 Introduction.....	4
1.1 Purpose.....	4
1.2 Scope.....	4
1.3 References.....	4
2.0 Details of Test Plan.....	5
2.1 Test Items.....	5
2.2 Test Traceability Matrix.....	5
2.3 Features To Be Tested.....	6
2.4 Features Not To Be Tested.....	6
2.6 Item Pass / Fail Criteria.....	7
2.7 Suspension Criteria and Resumption Requirements.....	7
2.9 Entry Criteria.....	8
2.10 Exit Criteria.....	9
3.0 Test Management.....	10
3.1 Planned Activities and Tasks.....	10
3.2 Environment & Infrastructure.....	11
3.2.1 Hardware.....	11
3.2.2 Software.....	11
3.2.3 Publications.....	11
3.3 Responsibilities and Authority.....	11
3.4 Schedules and Estimates.....	13
3.5 Risk & Contingency.....	14
4.0 General.....	16
4.1 Metrics.....	16
4.2 Glossary.....	16
4.3 Incident Classification.....	17

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

1.0 Introduction

1.1 Purpose

The purpose of this document is to specify the specific requirements elicited by the Group 3 from KAU Hospital System. It addresses the functionality, system scope, service quality attributes, and compliance requirements of the hospital management system.

This document is intended for system developers, project managers, configuration managers, and stakeholders.

1.2 Scope

KAU Hospital System should facilitate mainly the following operations:

1. Addition of rooms, doctors, nurses, medicines, and patients to the system.
2. Assignment of rooms to patients, doctors to patients, and medication to patients.
3. Generation of bills containing room charges, medical fees, and medication costs for patients.

1.3 References

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


1. IEEE 829-1998 Standard for Software and System Test Documentation
2. IEEE 829-2008 Standard for Software and System Test Documentation

The following documents provide the test basis for this test design:

1. KHS Software Requirement Specifications (KHS_SRS_1.0)
2. KHS System Design Specifications (KHS_SDS_1.0)

The following GitHub repositories provide the code basis for this test design:

1. rahmaAlghalib. (2022, Aug 8). GitHub - rahmaAlghalib/KAU-Hospital-System: Java Hospital management system. GitHub. <https://github.com/rahmaAlghalib/KAU-Hospital-System>

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

2.0 Details of Test Plan

2.1 Test Items

The following documents will be provide the basis of defining correct operation


- i. KauHospitalSystem System Requirement Specifications 1.0 (SRS)
- ii. KauHospitalSystem Software Design Specifications 1.0 (SDS)

2.2 Test Traceability Matrix

The following table contains the function in KHS and its traceability:

Function ID	Risk Level	Function Description	Source of Function
F001	High	Add Doctor	SRS
F002	High	Add Patient	SRS
F003	High	Add Medicine	SRS
F004	High	Add Nurse	SRS
F005	High	Add Room	SRS
F006	Low	Display All	SRS

Table 2.2 Test Traceability Matrix

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

2.3 Features To Be Tested

The following table contains the features to be test based on KauHospitalSystem Software Requirement Specifications (SRS). List together are the function id and its corresponding function and estimated risk level.

Function ID	Functions	Risk Level
F001	Add Doctor	High
F002	Add Patient	High
F003	Add Medicine	High
F004	Add Nurse	High
F005	Add Room	High
F006	Display All	Low

2.4 Features Not To Be Tested

Aside from the features listed in Section 2.2, other aspects of the system are not covered in this test plan. This includes:

i. Display All


The 'Display All' feature is excluded from this test plan due to its medium priority. Our testing efforts are concentrated on high priority to ensure efficient resource allocation and timely completion of testing objectives.

2.5 Approach

The test on KHS is a system level functional test that focuses only on the functional part of the system. Testing will be using a risk-based strategy.

This test will also be a black-box test where test cases are derived using black box testing techniques such as:

- i. Equivalent partitioning
- ii. Boundary value analysis
- iii. Decision table testing
- iv. Use Case Testing

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

Testing will be executed only in 1 iteration. In the first iteration testing all features as defined in the Features To be Tested section. Dedicated testing environments 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 must satisfy the following criteria in order to pass:

- I. Add Doctor
 - Pass Criteria: Successfully adds a new doctor to the system.
 - Fail Criteria: Failure to add a doctor due to system error or incomplete information.
- II. Add Patient
 - Pass Criteria: Successfully adds a new patient to the system.
 - Fail Criteria: Failure to add a patient due to system error or incomplete/incorrect information.
- III. Add Medicine
 - Pass Criteria: Successfully adds a new medicine to the system.
 - Fail Criteria: Failure to add a medicine due to system error or incomplete information.
- IV. Add Nurse
 - Pass Criteria: Successfully adds a new nurse to the system.
 - Fail Criteria: Failure to add a nurse due to system error or incomplete information.
- V. Add Room
 - Pass Criteria: Successfully adds a new room to the system.
 - Fail Criteria: Failure to add a room due to system error or incorrect data entry.

2.7 Suspension Criteria and Resumption Requirements

Suspension Criteria:

- I. Critical System Failure:
If there is a critical system failure that prevents the test environment from functioning properly, testing should be suspended until the issue is resolved.
- II. Significant Data Corruption or Loss:
If testing reveals significant data corruption or loss within the system, further testing should be suspended until data integrity is restored.
- III. Security Breach:
In case of a security breach or vulnerability identified during testing that poses a significant risk to the system or its users, testing should be suspended to address the security concerns.

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

Resumption Requirement:

- I. Resolution of Critical Issues:
Testing can be resumed once critical system failures are resolved, and the test environment is functioning properly again.
- II. Data Integrity Assurance:
Testing may resume after ensuring that data integrity issues have been addressed, and necessary measures are taken to prevent future occurrences.
- III. Security Mitigation:
Once security vulnerabilities are mitigated, and appropriate measures are implemented to safeguard the system, testing can be resumed with confidence in the system's security posture.

2.8 Test Deliverables

The following documents will be generated by the system test group and will be delivered during the system testing.

Test documentation:

- I. Test Plan
- II. Test Transmittal Report
- III. Test Design Specifications
- IV. Test Case Specifications
- V. Test Procedure Specifications
- VI. Test Logs
- VII. Test Incident Reports
- VIII. Test Summary Reports
- IX. Test Completion Report

2.9 Entry Criteria


The following items are needed before the testing can begin:

- I. Requirements documents for KHS 1.1
- II. Software Under Test: KHS 1.1

2.10 Exit Criteria


The following items are needed before the testing can end:

- I. All Test Deliverables in Section 2.8 have been delivered to the client.
- II. Test execution has been completed

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

III. Open defect at the end of iteration shall be:

- Zero fatal defect
- Zero major defect
- <= Three minor defects

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	


3.0 Test Management

3.1 Planned Activities and Tasks

The following table shows the set of tasks necessary to prepare for and perform testing for KHS. It was identify dependencies of other tasks and significant constraint such as test item availability, testing resources availability and deadlines

No.	Task	Activities	Target Date
1	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	05/05/2024
2	Test Analysis and Design	i. Analyze product ii. Develop test design specification iii. Prepare test case specification	19/05/2024
3	Test Environment	i. Setup KHS ii. Identify and acquired test data	26/05/2024
4	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	09/06/2024
5	Documenting Test Summary Report	i. Summarize test result	16/06/2024
6	Documenting Test Closure	i. Collecting test process data from completed activities to consolidate experience, testware, facts and numbers.	23/06/2024
7	Test Complete	i. Delivery of product to client	30/06/2024

Table 3.1 Planned Activities & Tasks

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

3.2 Environment & Infrastructure

This section describes the hardware, software and operating system that require for this system testing

3.2.1 Hardware

The following table shows the hardware requirements of KH that will be used to install KHS

Hardware Name	Standard Laptop/PC
Manufacturer	Various
Keyboard	Standard QWERTY
Card Processor	Integrated Smart Card Reader

Table 3.2.1 KH Hardware Requirements

3.2.2 Software

The following table shows the software requirements of KH that will be used to install KHS

Application Name	KAUHospital System (KHS)
Version	1.1
Type of file	Executable Jar File (.jar)
Size of Application	65.7KB
Size on Disk	68.0KB
Operating system	Windows CE 5.0, Windows CE 6.0

Table 3.2.2 KH Software Requirements


3.2.3 Publications

The following documents are required to support system testing:

- i. KHS System Requirements Specifications 1.0 (SRS)

3.3 Responsibilities and Authority

This section will identify the individuals or groups responsible for managing, designing, preparing, executing, witnessing, and checking results of this testing. In addition, it will identify the persons

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

responsible for providing the test items in Section 2.0 and environmental needs identified in Section 3.2.

Name	Role	Responsibilities
Nur Adiba Alya (216106)	Test Manager	<ul style="list-style-type: none"> Negotiating the ongoing purpose and deliverables of the test effort Ensuring the appropriate planning and management of the test resources Assessing the progress and effectiveness of the test effort Advocating the appropriate level of quality by the resolution of important defects Advocating an appropriate level of testability focus in the software development process
Danisha Azara (217531)	Test Lead	<ul style="list-style-type: none"> Deploying and managing the appropriate testing framework to meet the testing mandate Implementing and evolving appropriate measurements and metrics <ul style="list-style-type: none"> To be applied against the Product under test To be applied against the Testing Team Planning, deploying, and managing the testing effort for any given engagement/release Managing and growing Testing assets required for meeting the testing mandate Retaining skilled testing personnel
Amylia Natasya (214887)	Test Analyst	<ul style="list-style-type: none"> Identifying the Target Test Items to be evaluated by the test effort Defining the appropriate tests required and any associated Test Data Gathering and managing the Test Data Evaluating the outcome of each test cycle
Nur Aisyah (214531)	Tester	<ul style="list-style-type: none"> Test Requirements Analysis Test Case Development/Updating Test Data preparation Test Execution and Results logging Defect Analysis & Reporting Re-tests for fixes
Shahrul Amin (216876)	Test Automation Engineer	<ul style="list-style-type: none"> Designing and Developing Automated Test Scripts Integration of Automation in the Testing Process Continuous Improvement of Automated Testing Collaborating with Other Teams Maintenance and Troubleshooting of Automated Tests



Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

Table 3.3 Roles & Responsibilities

3.4 Schedules and Estimates

This section will describe the project schedule and task milestones. The schedule will include estimated time that is required for each testing task.

Task	Milestone	Days	Duration
Test Planning and Control	Defining the scope, approach, resources, and schedule for testing; monitoring and controlling the test activities.	3	17/03/2024 - 20/03/2024
Test Analysis and Design	Identifying test conditions, designing test cases, and establishing the test environment.	16	21/03/2024 - 06/04/2024
Test Environment	Setting up and verifying the environment in which the tests will be executed.	7	07/04/2024 - 14/04/2024
Test Implementation and Execution	Developing and prioritizing test cases and data, and executing the tests.	7	15/04/2024 - 22/05/2024
Documenting Test and Summary Report	Recording the test results and analyzing the test coverage and outcomes.	18	22/05/2024 - 09/06/2024
Documenting Test Closure	Finalizing all test activities, documenting the test artifacts, and ensuring all test items meet exit criteria.	4	10/06/2024 - 14/06/2024
Test Complete	All planned test activities are finished, and the test objectives have been met.	1	15/06/2024


Project Title: KHS Independent Verification and Validation		
Date: 6/04/2024	Test Log ID: KHS_TP_1_1.0.0	

3.5 Risk & Contingency


This section identifies the risk issues that may impact successful completion of the system testing activities of KHS. The potential likelihood, impact and mitigation plan was 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

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

Project Title: KHS Independent Verification and Validation		
Date: 6/04/2024	Test Log ID: KHS_TP_1_1.0.0	

Function ID	Risk Description	Likelihood	Impact	Risk Exposure	Risk Treatment Plan	People Responsible	Cost
F001	Incorrect information	4	4	16	Perform functional test and use at least 3 test techniques	Test Team	-
F002	Incorrect information	4	4	16	Perform functional test and use at least 3 test techniques	Test Team	-
F003	Incorrect information	4	4	16	Perform functional test and use at least 3 test techniques	Test Team	-
F004	Incorrect information	4	4	16	Perform functional test and use at least 3 test techniques	Test Team	-
F005	Incorrect information	4	4	16	Perform functional test and use at least 3 test techniques	Test Team	-

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

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 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 Passes 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
KHS	KAU Hospital System
IEEE	Institute of Electrical and Electronics Engineers
JAR	Java Archive

Project Title: KHS Independence Verification and Validation		
Date: 6/04/2024	Test Plan ID: KHS_TP_1_1.0.0	

4.3 Incident Classification

Impact
<p>Mission Critical : Application will not function or system fails.</p> <p>Major : Severe problems but possible to work around</p> <p>Minor : Does not impact the functionality or usability of the process is not according to requirements/design specifications</p>
Priority
<p>Immediate : Must be fixed as soon as possible</p> <p>Delayed : System is unstable but incident must be fixed prior to next level of test or shipment</p> <p>Deferred : Defect can be left in if necessary due to time or costs</p>