Black Box Testing for Hospital Management System

This section documents the black box testing of the Hospital Management System (HMS) project, focusing on verifying the application's functionalities against defined requirements. The tests validate that the input-output behavior of each module aligns with expected outcomes, ensuring a seamless and reliable user experience.

5. BLACK BOX Testing:

1 Patient

Test Case ID		T.1.1		Test Case Priority	High	
Test (Case Description	View medical record			•	
Prere	quisite	User should have their credentials ready for registering for an account		Postrequisite	User will be redii login page	rected to
Test I	Execution					
#	Description	Action	Input	Expected Output	Actual Output	Test Result
1	Viewing a medical record	User logs in and selects "View Medical Record" from the menu	Username: P1001 Password: hud 1	User's medical record is displayed, showing Patient ID, Name, Date of Birth, Gender, Contact Info, and Blood Type.	User's medical record is displayed, showing Patient ID: P1001, Name: Alice Brown, Date of Birth: 1980-05-14, Gender: Female, Contact Info: 2, Blood Type: A+	Pass
2	Submitting an empty form	User clicks on Create Account button without any inputs	NIL	Displays "All fields are required."	Displays "All fields are required."	Pass
3	Entering a username with less than 4 characters	User enters a username with less than 4 characters, email, password and phone number and tick the terms and conditions box	Username: 123 Email: 123@gmail.com Password: P@ssword1	Displays "Username must be at least 4 characters long."	Displays "Username must be at least 4 characters long."	Pass

	<u> </u>			1	<u> </u>	1
		User clicks on Create Account button	Phone number: 98765432			
			Terms & Conditions:			
4	Entering an invalid email	User enters a username, invalid email, password and phone number and tick the terms and conditions box User clicks on Create Account button	Username: 1234 Email: 1234@gmail Password: P@ssword1 Phone number: 98765432 Terms & Conditions:	Displays "Please enter a valid email address.""	Displays "Please enter a valid email address."	Pass
5	Entering a password with does not meet the requirements of 1 lower, 1 upper, 1 digit and 1 special character	User enters a username, email, basic password and phone number and tick the terms and conditions box User clicks on Create Account button	Username: 1234 Email: 1234@gmail.com Password: password Phone number: 98765432 Terms & Conditions:	Displays "Password does not meet the password requirements."	Displays "Password does not meet the password requirements."	Pass
6	Did not check terms and conditions box	User enters a username, email, password and phone number but does not tick the terms and conditions box User clicks on Create Account button	Username: 1234 Email: 1234@gmail.com Password: P@ssword1 Phone number: 98765432 Terms & Conditions:	Displays "You must agree to the terms and conditions."	Displays "You must agree to the terms and conditions.""	Pass
7	Enter a phone number that belongs to another account	User enters a username, email, password and phone number and tick the terms and conditions box User clicks on Create Account button	Username: 1234 Email: 1234@gmail.com Password: P@ssword1 Phone number:	Displays "An account with this phone number exists!"	Displays "An account with this phone number exists!"	Pass

			99999999 Terms & Conditions:			
8	Enter an email that belongs to another account	User enters a username, email, password and phone number and tick the terms and conditions box User clicks on Create Account button	Username: 1234 Email: user1@gmail.com Password: P@ssword1 Phone number: 98765432 Terms & Conditions:	Displays "An account with this email already exists."	Displays "An account with this email already exists."	Pass
9.	Attempt to view record with no record available					
Test C	Test Case Status Success					

Test Case: Main Page				Test case priority:	
2.1	Description	Input	Expected output	Actual output	Pass/Fail
2.1.1	1.Login 2.Reset password 3.Quit	1	Redirect to loginPage		Pass
2.1.2		2	Redirect to resetPassword		Pass
2.1.3		3	System shutting down		Pass
2.1.4		Not 1-3	Refresh Page		Pass
2.1.5	1	"asd"	Refresh Page		Pass
2.1.6		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Fail

Test Case	: Login Page	Test case priority:			
2.2	Description	Input	Expected output	Actual output	Pass/Fail
2.2.1	1.Patient	1	PatientLogin	PatientLogin	Pass
2.2.2	- 2.Staff	2	StaffLogin	StaffLogin	Pass
2.2.3		Not 1 or 2	Refresh Page	Refresh Page + error message	Pass
2.2.4		"asd"	Refresh Page	Refresh Page + error message	Pass
2.2.5		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Fail

Test Cas	e: Patient Login	Test case priority:			
2.2	Description	Input	Expected output	Actual output	Pass/Fail
2.2.1	Please enter your patient ID (Enter ~ to	"asd"	Refresh page + error message	Please enter your password:	Fail
2.2.2	return to previous menu):	P1002	Please enter your password :	Please enter your password :	Pass
2.2.3	Please enter your password:	"asd"	Refresh page + error message	Refresh page + error message	Pass
2.2.4		password	Patient Menu	Patient Menu	Pass

Test Case Patient Menu	

1.1	Description	Input	Output		Expected Output	Pass/Fail
1.1.2 Attempt to view records with no records available	Created a new test patient and tried to view medical record from main menu		Name Date of Birth Gender Contact Info test@gmail.com	cord === : P1004 : test : 2020-11-11 : Male :		Pass

1.2 Update Personal Information	ID:P1004 Name:test email:test@gm ail.com DOB:2020-11- 11 Gender:M Blood Type:A+ Contact:91111 11 Emer:9555555 5	test1@gmail.com 95555555 91111111 p@ssword1	Phone Number : 9111111 Emergency Contact: 95555555 =		Pass
122	pw:password		Emellibrate and develop		E-il
1.2.2 Update with missing fields	Try to add blanks Email: Contact Number Emergency Password	<black> <black> <black> <black> <black> <black></black></black></black></black></black></black>	Email breaks even though it says that it will keep current email if left blank Contact number does not accept blank to keep current contact number Emergency does not accept blank to keep current contact number Does not accept <blank> as a password</blank>		Fail
1.2.2 Update with invalid information	Email: Contact Number: Emergency:	<1234> <123123> <123f> <123f1233> <123f1233> <123f23> <123f233>	Added Invalid Invalid Invalid Invalid Invalid Invalid Invalid	Should reject email without @gmail.com?	Fail

	Password:	<password1><p#ssword></p#ssword></password1>	Invalid Invalid Invalid	
1.3.1 View Available slots for a specific doctor	Booking a New Appointment: The patient name is: test The doctor name is: Popo		Available Sessions for Dr. D026 on 2024-11-12:	Pass
1.3.2 View available slots when none are available	Shows for all dates even when there are no slots available			Pass
1.4.1 Successful scheduling of an appointment	Attempted to book appointment to Popo	Booking on 2024-11-13 9:00am	Booking shows on view appointment by doctor Booking shows on view appointment by patient	Pass
1.4.2 Attempt to book on booked slot	Attempted to book appointment in book slot	Tried to book on same slot as above	Error: The selected session is already Booked. Please choose another session.	Pass

1.4.3 Attempt to schedule without selecting doctor or date	Not possible in our implementation			Pass
1.5.1 Rescheduling of existing appointment	Attempted to shift appointment from 2024-11-13 To 2024-11-14		Successfully reflecting in the booking as well as view appointments	Pass
1.5.2 Attempt to reschedule to a booked slot	Attempted to reschedule appointment to one blocked by Doctor		Selected sessions are not available. Please choose another session.	Pass
1.5.3 Attempt to reschedule a non-existent appointment	Attempted to reschedule with no appointments	<black></black>	States that there are no appointments	Pass
1.6.1 Attempt to cancel an appointment	Attempted to cancel an appointment		Successfully cancled. View appointment shows no appointments remaining	Pass
1.6.2 Attempt to cancel non-existent appointment	Same as reschedule non-existent appointment			Pass
1.7.1 View all appointments	Booked 2 appointments on 2024-11-16 9AM 2024-11-17 9AM		Appointment ID : A0070 Date	Pass
1.7.2 Attempt to view with no scheduled appointments	Tried to view with no appointments		Showed no upcoming appointments	Pass

1.8.1 Try to view past appointment outcomes	Try to view records with 1 appointment completed	Record ID 1: Diagnosis Description : gonna die from cancer Prescription (mg) : Paracetamol:100; Chinesepill:100 Date of Diagnosis : 2024-11-14 Treatment Start Date : 2024-11-14 Treatment End Date : 2024-11-25	Pass
1.8.2 Attempt to view records with no past outcomes	Try to view records with no records	Showed no completed sessions to display	Pass

Test Case Doctor Menu	For Doctor D026 and Patient P1003 Appointment booked on 2024/11/11
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2.1 View Patient Medical Records	Description	Input	Output	Expected Output	Pass/Fail
2.1.1	=== Doctor Menu === 1. View Patient Medical Records 2. Create Patient Medical Record 3. Update Patient Medical Records 4. Manage Appointment Matters 5. Logout	1	No patients found under your care.		Pass
	=== Doctor Menu === 1. View Patient Medical Records 2. Create Patient Medical Record 3. Update Patient Medical Records 4. Manage Appointment Matters 5. Logout	2	Prompted to create patient Diagnosis and treatment record		Pass
2.1.2	=== Create Patient Diagnosis and Treatment Record === Enter Patient ID:	P1003	Patient Name is displayed correctly and prompted for Diagnosis date		Pass
2.1.3(a)	Do you want to use a different date? (yes/no):	yes	Prompted for data and description		Pass
2.1.4(a)	Enter Diagnosis Date (YYYY-MM-DD): Enter Diagnosis Description:	2024-11-12 cancer	Prompted for available medicines		Pass

2.1.5(a)	Select medicines for Prescription by entering their numbers (comma-separated):	2	Prompted for dosage for aspirin		Pass
2.1.6(a)	Enter dosage for aspirin	200	Prompted for notes for medication		Pass
2.1.7(a)	Notes for medication	Eat with shit	Prompted for treatment start date		Pass
2.1.8(a)	Enter Treatment Start Date Enter Treatment End Date	2024-11-13 2024-11-15	Prompted to save record	Is it supposed to prompt for treatment outcome, followup instructions and notes	Fail
2.1.9(a)	View Patient Medical Record		There are 1 patient(s) under your care. === Patient(s) Under Your Care === Patient Information 1 Patient ID : P1003 Name : Charlie White Date of Birth : 1990-07-08 Gender : Male Blood Type : O- Contact Info : popo@gmail.com Phone Number : 91919191 Emergency Number : 92929292 Diagnosis and Prescription for PatientID: P1003		Pass

			Record ID 1: Diagnosis Description: cancer Prescription(mg): Aspirin:200 Date of Diagnosis: 2024-11-12		
2.1.3(b)	Do you want to use a different date? (yes/no):	no	Prompted for description		Pass
2.1.4(b)	Enter Diagnosis Description:	cancer	Same as for different date		Pass
SEPARATOR	SEPARATOR	SEPARATOR	SEPARATOR	SEPARATOR	SEPARATOR
2.2.1 Update Patient Medical Records	Enter Patient ID to update record:	P1003	Found multiple records for Patient ID: P1003 1. Diagnosis ID: 7, Diagnosis Date: 2024-11-12, Description: cancer		Pass
2.2.2	Select the record number you want to update (or press ~ to return to the menu): 1 Record found for Patient ID: P1003 Current Diagnosis Description: cancer Current Prescription: Aspirin:200 Current Treatment End Date: 2024-11-15 Current Treatment Outcome:	cancerous	Enter new Diagnosis Description (leave blank to keep current): cancerous Available Medicines: 1. Paracetamol 2. Aspirin 3. Bop 4. Malaypill 5. Ibuprofen 6. Amoxicillin 7. Penicillin		Pass

	Current Follow-Up Instructions: Current Notes: eat with shit Enter new Diagnosis Description (leave blank to keep current):		8. Chinesepill 9. Test 10. Wee	
2.2.3	Select medicines for Prescription by entering their numbers (comma-separated): 1 Enter dosage for Paracetamol (increments of 100): 100 Enter new Treatment End Date (YYYY-MM-DD, leave blank to keep current): 2024-11-25 Enter new Treatment Outcome (leave blank to keep current): deadge Enter new Follow-Up Instructions (leave blank to keep current): die Enter new Notes: die Record updated successfully for Patient ID: P1003 Prescription record saved successfully!		1,100,2024-11-25,d eadge,die,die	Pass
2.2.4 Attempt to	Asking for diagnosis description	<black>,</black>	-Accepted blank input	Pass
update with invalid or incomplete	Asking for medicine	<black></black>	-brought to main menu	
information	Asking for dosage	<blank></blank>	-brought to main menu	
	Asking for date	<blank></blank>	-Accepted blank input	
	Asking for treatment outcome	<blank></blank>	-Accepted blank input	
	Asking for followup instruction	<blank></blank>	-Accepted blank input	
	Asking for notes	<blank></blank>	-Accept blank input	

2.3.1 View Personal Schedule	View Personal Schedule	1	1. 2024-11-10 [1/3] 2. 2024-11-11 [1/3] 3. 2024-11-12 [0/3] 4. 2024-11-13 [0/3] 5. 2024-11-14 [0/3] 6. 2024-11-15 [0/3] 7. 2024-11-16 [0/3]	Pass
			D026 on 2024-11-10: ====================================	
2.3.2 View empty schedule	View empty schedule	1	Sessions for Dr. D026 on 2024-11-12: ====================================	Pass
2.4 Set availability for appointment	Enter the date (1-7):3 Selected Date: 2024-11-12 Sessions for Dr. D026 on 2024-11-12:			Pass

		ı		
	1. 09:00 [Blocked] 2. 11:00 [Available] 3. 14:00 [Available]			
	Try to book as charlie White	Booking	Available Sessions for Dr. D026 on 2024-11-12:	Pass
2.5 Accept or decline appointment	Try to book appointment 2024-11-13 at 9am To Popo		Appointment added successfully. Appointment successfully booked with ID: A0057	Pass
2.5.1	Try to accept on doctor Popo		Successfully shows booking by Charlie White and is accepted. Shows in View/edit Personal Schedule as blocked	Pass
2.5.2	Try to reject on doctor Popo		Successfully shows booking by Charlie White and is rejected. Does Not show in View/edit personal schedule	Pass

2.6 Successfully view all upcoming appointments	Booked 3 appointments by charlie white to Popo on 2024-11-11		Successfully accepted and shows all 3 pending appointments by Popo	Pass
2.7.1 Successfully record the outcome of an appointment	Made fake completed appointment for Patient	Input data	Successfully shows in the medical record for the patient	Pass
2.7.2	It wont even show you option to change for a non existent appointment, hence passes by default			Pass

Test Case	: Pharmacist Main Menu	Test case priority:			
3.1	Description	Input	Expected output	Actual output	Pass/Fail
3.1.1	1. View appointment	1	Appointment outcome		Pass
3.1.2	outcome 2. Prescriptions Menu	2	Prescription Menu		Pass
3.1.3	3. Display all medicines4. Submit Request	3	Display all medicine		Pass
3.1.4	5. Logout Enter your choice:	4	Submit Request		Pass
3.1.5		5	Logout		Pass
3.1.6		Not 1 or 2	Refresh Page	Refresh Page	Pass
3.1.7		"asd"	Refresh Page	Refresh Page	Pass
3.1.8		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass

Test Case	: View Appointment Outco	Test case priority:			
3.2	Description	Input	Expected output	Actual output	Pass/Fail
3.2.1	Enter the patient's ID:	Any integer only	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.2.2		"asd"	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.2.3		Test123	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.2.4		P1001	Patient information + Diagnosis IDs	Patient information + Diagnosis IDs	pass
3.2.5		New line/ whitespace	Refresh Page	Invalid PatientID	Fail

Test Case	: Prescription Menu	Test case priority:			
3.1	Description	Input	Expected output	Actual output	Pass/Fail
3.1.1	1. View All	1	View All Prescriptions	View All Prescriptions	Pass
3.1.2	Prescriptions 2. View Prescriptions for a Patient 3. Update Prescription Status 4. Exit Please select an option:	2	View Prescriptions for a Patient	View Prescriptions for a Patient	Pass
3.1.3		3	Update Prescription Status	Update Prescription Status	Pass
3.1.4		4	Exit	Return to Pharmacist main menu	Pass
3.1.5		Not 1-4	Refresh Page	Refresh Page	Pass
3.1.6		"asd"	Refresh Page	Refresh Page	Pass
3.1.7		New line/ whitespace	Refresh Page	Refresh Page	Pass

Test Case	e: View All Prescriptions	Test case priority:			
3.1	Description	Input	Expected output	Actual output	Pass/Fail
3.1.1	Print all prescription, pending or dispensed, in To be prescribed.csv Prescription ID: PR009 Patient ID: P1001 Patient Name: Alice Brown Doctor ID: D028 Doctor Name: asd Date Prescribed: 2024-11-08 Medications: - Paracetamol: 1000mg Status: Pending Notes: nil	-	View All Prescriptions	View All Prescriptions	Pass

Test Case: View Prescription For a Patient				Test case priority:	
3.1	Description	Input	Expected output	Actual output	Pass/Fail
3.1.1	Enter patient ID:	Any integer only	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.1.2		"asd"	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.1.3		Test123	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.1.4		P1001	Patient information + Diagnosis IDs	Patient information + Diagnosis IDs	pass
3.1.5		New line/ whitespace	Refresh Page	Invalid PatientID + return to page	Fail

Test Case: Update Prescription Status				Test case priority:	
3.1	Description	Input	Expected output	Actual output	Pass/Fail
3.1.1	Enter Prescription ID	Any integer only	Invalid Prescription ID	Invalid PatientID + return to menu	Pass
3.1.2		"asd"	Invalid Prescription ID	Invalid PatientID + return to menu	Pass
3.1.3		Test123	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.1.4		PR001	Update status	Choose update Status: (1) Dispense Medicine	pass
3.1.5		New line/ whitespace	Refresh Page	Invalid PatientID + return to page	Fail

Test Case: Choose update Status			Test case priority:		
3.1	Description	Input	Expected output	Actual output	Pass/Fail
3.1.1	Enter Prescription ID	Any integer only	Invalid Prescription ID	Invalid PatientID + return to menu	Pass
3.1.2		"asd"	Invalid Prescription ID	Invalid PatientID + return to menu	Pass
3.1.3		Test123	Invalid patient ID	Invalid PatientID + return to menu	Pass
3.1.4		PR001	Update status	Choose update Status: (1) Dispense Medicine	pass
3.1.5		New line/ whitespace	Refresh Page	Invalid PatientID + return to page	Fail

Test Case: Administrator Main Menu				Test case priority:	
4.1	Description	Input	Expected output	Actual output	Pass/Fail
4.1.1	View and Manage Staffs	1	View and Manage Staffs		Pass
4.1.2	2. Manage Appointment Details 3. Manage Medication	2	Manage Appointment Details		Pass
4.1.3	Inventory 4. Register a New Patient	3	Manage Medication Inventory		Pass
4.1.4	5. Logout Choose an option:	4	Register a New Patient		Pass
4.1.5		5	Logout		Pass
4.1.6		Not 1-5	Refresh Page	Refresh Page	Pass
4.1.7		"asd"	Refresh Page	Refresh Page	Pass
4.1.8		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass

Test Case	Test Case: View and Manage Staffs			Test case priority:	
4.2	Description	Input	Expected output	Actual output	Pass/Fail
4.2.1	Manage Doctors Manage Pharmacists	1	Manage Doctors		Pass
4.2.2	3. Display all Staffs 4. Return to Main Menu	2	Manage Pharmacists		Pass
4.2.3	Please enter your choice:	3	Display all Staffs		Pass
4.2.4		4	Return to Main Menu		Pass
4.2.5		Not 1-4	Refresh Page	Refresh Page	Pass
4.2.6		"asd"	Refresh Page	Refresh Page	Pass
4.2.7		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass

Test Case: Manage Doctors / Pharmacists			Test case priority:		
4.2.1	Description	Input	Expected output	Actual output	Pass/Fail

4.2.1.1	1. Add a New Doctor / Pharmacists 2. Update Doctor / Pharmacists Information 3. Remove a Doctor /	1	Add a New Doctor / Pharmacists		Pass
4.2.1.2		2	Update Doctor / Pharmacists Information		Pass
4.2.1.3	Pharmacists 4. Return to Main Menu Please enter your	3	Remove a Doctor / Pharmacists		Pass
4.2.1.4	choice:	4	Return to Main Menu		Pass
4.2.1.5		Not 1-,4	Refresh Page	Refresh Page	Pass
4.2.1.6		"asd"	Refresh Page	Refresh Page	Pass
4.2.1.7		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass
Test Case	: Display all Staffs		T	Test case priority:	1
4.2.2	Description	Input	Expected output	Actual output	Pass/Fail
4.2.2.1	1. ID 2. Name	1	ID	No/ Wrong Output	Fail
4.2.2.2	3. Role 4. Gender	2	Name	No/ Wrong Output	Fail
4.2.2.3	5. Age	3	Role	No/ Wrong Output	Fail
4.2.2.3	Choose an attribute to sort by:	4	Gender	No/ Wrong Output	Fail
4.2.2.4		5	Age	No/ Wrong Output	Fail
4.2.2.5		Not 1-5	Refresh Page	No/ Wrong Output	Fail
4.2.2.6		"asd"	Refresh Page	No/ Wrong Output	Fail
4.2.2.7		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass
Test Case	Test Case: Manage Appointment Details			Test case priority:	T
4.3	Description	Input	Expected output	Actual output	Pass/Fail
4.3.1	View by Doctor Schedule View by Patient	1	View by Doctor Schedule		Pass
4.3.2	2. View by Patient Schedule 3. View All Booked	2	View by Patient Schedule		Pass
4.3.3	Schedule 4. Exit	3	View All Booked		Pass

	Please select an option:		Schedule		
4.3.4		4	Exit		Pass
4.3.5		Not 1-4	Refresh Page	Refresh Page	Pass
4.3.6		"asd"	Refresh Page	Refresh Page	Fail
4.3.7		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass

Test Case: Manage Medication Inventory				Test case priority:	
4.4	Description	Input	Expected output	Actual output	Pass/Fail
4.4.1	View Medication Inventory Add New Medication	1	View Medication Inventory		Pass
4.4.2	3. Update Medication	2	Add New Medication		Pass
4.4.3	Stock Level 4. Remove Medication 5. Update Low Stock	3	Update Medication Stock Level		Pass
4.4.4	Alert Level 6. Approve	4	Remove Medication		Pass
4.4.5	Replenishment Requests 7. Return to Main Menu Please enter your choice: Please enter your choice: (this is being repeated twice)	5	Update Low Stock Alert Level		Pass
4.4.6		6	Approve Replenishment Requests		Pass
4.4.7		7	Return to Main Menu		Pass
4.4.8		Not 1-7	Refresh Page	Refresh Page	Pass
4.4.9		"asd"	Refresh Page	Refresh Page	Fail
4.4.10		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass

Test Case: Register a New Patient			Test case priority:		
4.5	Description	Input	Expected output	Actual output	Pass/Fail
4.5.1	Patient is assigned ID: p*** 1. Enter Name 2. Enter Date of Birth (YYYY-MM-DD) 3. Select Gender (M/F)	1	Enter Name		Pass
4.5.2		2	Enter Date of Birth		Pass
4.5.3		3	Select Gender		Pass

4.5.4	4. Select Blood Type (A	4	Select Blood Type		Pass
4.5.5	- O) 5. Enter Email 6. Enter Contact Number 7. Enter Emergency Contact Number	5	Enter Email		Pass
4.5.6		6	Enter Contact Number		Pass
4.5.7		7	Enter Emergency Contact Number		Pass
4.5.8		New line/ whitespace	Refresh Page	Page moves down/Cursor moves to right	Pass