

(Course Project)

Group Members

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1. AddDrivers.java:

(a). ECP and BVA Table

Field	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Name	Non-empty alphabetic strings	Empty string, numeric, or special characters	-	-
Age	Numeric values (18 to 100)	Non-numeric, < 18, > 100	18, 100	17, 101
Gender	"Male", "Female"	Any other string	-	-
Car Company	Non-empty alphabetic strings	Empty string, numeric, or special characters	-	-
Car Brand	Non-empty alphabetic strings	Empty string, numeric, or special characters	-	-
Available	"Yes", "No"	Any other string	-	-
Location	Non-empty alphanumeric strings (e.g., city names)	Empty string, special characters only	-	-

(b). Test Cases:

Test Case	Description	Input	Expected Outcome	New Tags Covered
1	All inputs valid	Name: Zain, Age: 25, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	"Driver Successfully Added"	V1, V2
2	Name is empty	Name: (empty), Age: 25, Gender: Male, Car Company: Toyota, Car	Error: "Name cannot be empty"	B1, B3

Test Case	Description	Input	Expected Outcome	New Tags Covered
		Brand: Camry, Available: Yes, Location: Lahore		
3	Age below minimum boundary	Name: Zain, Age: 17, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	Error: "Age must be between 18 and 100"	B2, B4
4	Age above maximum boundary	Name: Zain, Age: 101, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	Error: "Age must be between 18 and 100"	B5, B6
5	Invalid gender	Name: Zain, Age: 25, Gender: Other, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	Error: "Invalid gender selected"	B7
6	Car company is empty	Name: Zain, Age: 25, Gender: Male, Car Company: (empty), Car Brand: Camry, Available: Yes, Location: Lahore	Error: "Car company cannot be empty"	B8
7	Car brand is empty	Name: Zain, Age: 25, Gender: Male, Car Company: Toyota, Car Brand: (empty), Available: Yes, Location: Lahore	Error: "Car brand cannot be empty"	B9
8	Availability is invalid	Name: Zain, Age: 25, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Maybe, Location: Lahore	Error: "Invalid availability option"	B10
9	Location is empty	Name: Zain, Age: 25, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: (empty)	Error: "Location cannot be empty"	B11

Test Case	Description	Input	Expected Outcome	New Tags Covered
10	Name contains special characters	Name: K@if, Age: 25, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	Error: "Invalid name format"	B12
11	Age is non-numeric	Name: Zain, Age: Twenty-five, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	Error: "Age must be a numeric value"	B13
12	Combination of invalid fields	Name: (empty), Age: 101, Gender: Other, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	Error for multiple fields	B14, B15, B16
13	Valid inputs with boundary values	Name: Zain, Age: 18, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: Yes, Location: Lahore	"Driver Successfully Added"	V3, V4
14	Valid inputs with maximum boundary values	Name: Zain, Age: 100, Gender: Male, Car Company: Toyota, Car Brand: Camry, Available: No, Location: Karachi	"Driver Successfully Added"	V5, V6

2. AddEmployee.java:

(a). ECP and BVA Table:

Field	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Name	Non-empty alphabetic strings	Empty string, numeric, or special characters	-	-
Age	Numeric values (18 to 60)	Non-numeric, < 18, > 60	18, 60	17, 61
Gender	"Male", "Female"	Any other string	-	-
Job	Predefined values (e.g., Front Desk, Manager)	Any string outside predefined values	-	-
Salary	Positive numeric values	Non-numeric, negative, zero	1	0, -1
Phone	10-digit numeric strings	Non-numeric, < 10 digits, > 10 digits	10 digits	< 10 digits, > 10 digits
Aadhar	12-digit numeric strings	Non-numeric, < 12 digits, > 12 digits	12 digits	< 12 digits, > 12 digits
Email	Valid email format (e.g., abc@xyz.com)	Empty string, invalid format	-	-

(b). Test Cases :

Test Case	Description	Input	Expected Outcome	New Tags Covered
1	All inputs valid	Name: Zain, Age: 30, Gender: Male, Job: Manager, Salary: 50000, Phone:	"Employee Added Successfully"	V1, V2

Test Case	Description	Input	Expected Outcome	New Tags Covered
		03001234567, Aadhar: 123456789012, Email: Zain@example.com		
2	Name is empty	Name: (empty), Age: 30, Gender: Male, Job: Manager, Salary: 50000, Phone: 03001234567, Aadhar: 123456789012, Email: Zain@example.com	Error: "All fields are required!"	B1, B3
3	Age below minimum boundary	Name: Asma, Age: 17, Gender: Female, Job: Chef, Salary: 40000, Phone: 03001234567, Aadhar: 123456789012, Email: asma@example.com	Error: "Age must be between 18 and 60"	B2, B4
4	Age above maximum boundary	Name: Bilal, Age: 61, Gender: Male, Job: Front Desk Clerks, Salary: 30000, Phone: 03001234567, Aadhar: 123456789012, Email: bilal@example.com	Error: "Age must be between 18 and 60"	B5, B6
5	Invalid gender	Name: Ayesha, Age: 25, Gender: Other, Job: Waiter/Waitress, Salary: 25000, Phone: 03001234567, Aadhar: 123456789012, Email: ayesha@example.com	Error: "All fields are required!"	B7
6	Invalid job title	Name: Hamza, Age: 28, Gender: Male, Job: Developer, Salary: 70000, Phone: 03001234567, Aadhar: 123456789012, Email: hamza@example.com	Error: "All fields are required!"	B8
7	Salary is negative	Name: Sana, Age: 35, Gender: Female, Job: Accountant, Salary: -20000, Phone: 03001234567, Aadhar: 123456789012, Email: sana@example.com	Error: "All fields are required!"	B9
8	Phone number has less than 10 digits	Name: Ali, Age: 40, Gender: Male, Job: Housekeeping, Salary: 35000, Phone: 03001234, Aadhar: 123456789012, Email: ali@example.com	Error: "All fields are required!"	B10

Test Case	Description	Input	Expected Outcome	New Tags Covered
9	Phone number has more than 10 digits	Name: Fatima, Age: 29, Gender: Female, Job: Manager, Salary: 80000, Phone: 0300123456789, Aadhar: 123456789012, Email: fatima@example.com	Error: "All fields are required!"	B11
10	Aadhar has less than 12 digits	Name: Kamran, Age: 34, Gender: Male, Job: Chef, Salary: 45000, Phone: 03001234567, Aadhar: 12345678, Email: kamran@example.com	Error: "All fields are required!"	B12
11	Invalid email format	Name: Maria, Age: 23, Gender: Female, Job: Waiter/Waitress, Salary: 28000, Phone: 03001234567, Aadhar: 123456789012, Email: mariaexample.com	Error: "All fields are required!"	B13
12	Combination of multiple invalid fields	Name: (empty), Age: 16, Gender: Other, Job: Developer, Salary: -15000, Phone: 12345, Aadhar: 1234, Email: invalid email	Error for multiple fields	B14, B15, B16

3. AddRoom.java:

(a) ECP and BVA:

Field	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Room Number	Non-empty numeric strings	Empty, non-numeric, duplicate	-	-
Availability	"Available", "Occupied"	Any other string	-	-
Cleaning Status	"Cleaned", "Dirty"	Any other string	-	-
Price	Positive numeric values	Non-numeric, negative, zero	1	0, -1
Bed Type	"Single Bed", "Double Bed"	Any other string	-	-

(b) Test Case:

Test Case	Description	Input	Expected Outcome	New Tags Covered
1	All inputs valid	Room Number: 101, Availability: Available, Cleaning Status: Cleaned, Price: 5000, Bed Type: Single Bed	"Room Successfully Added"	V1, V2
2	Room Number is empty	Room Number: (empty), Availability: Available, Cleaning Status: Cleaned, Price: 5000, Bed Type: Single Bed	Error: "Room number cannot be empty"	B1, B3
3	Room Number is non-numeric	Room Number: A101, Availability: Available, Cleaning Status:	Error: "Invalid room number"	B2, B4

Test Case	Description	Input	Expected Outcome	New Tags Covered
		Cleaned, Price: 5000, Bed Type: Single Bed		
4	Room Number is duplicate	Room Number: 101 (already exists), Availability: Available, Cleaning Status: Cleaned, Price: 5000, Bed Type: Single Bed	Error: "Room number already exists"	B5, B6
5	Invalid availability	Room Number: 102, Availability: Pending, Cleaning Status: Cleaned, Price: 5000, Bed Type: Single Bed	Error: "Invalid availability option"	B7
6	Invalid cleaning status	Room Number: 103, Availability: Available, Cleaning Status: None, Price: 5000, Bed Type: Single Bed	Error: "Invalid cleaning status"	B8
7	Price is negative	Room Number: 104, Availability: Available, Cleaning Status: Cleaned, Price: -500, Bed Type: Single Bed	Error: "Price must be positive"	B9
8	Price is zero	Room Number: 105, Availability: Available, Cleaning Status: Cleaned, Price: 0, Bed Type: Single Bed	Error: "Price must be positive"	B10
9	Invalid bed type	Room Number: 106, Availability: Available, Cleaning Status: Cleaned, Price: 4000, Bed Type: Triple Bed	Error: "Invalid bed type"	B11
10	Valid inputs with maximum boundary price	Room Number: 107, Availability: Available, Cleaning Status: Cleaned, Price: 1000000, Bed Type: Double Bed	"Room Successfully Added"	V3, V4

Test Case	Description	Input	Expected Outcome	New Tags Covered
11	Valid inputs with minimum boundary price	Room Number: 108, Availability: Available, Cleaning Status: Cleaned, Price: 1, Bed Type: Single Bed	"Room Successfully Added"	V5, V6
12	Combination of multiple invalid fields	Room Number: (empty), Availability: Pending, Cleaning Status: None, Price: -500, Bed Type: Triple Bed	Error for multiple fields	B12, B13, B14

4. CheckOut.java:

(a). ECP and BVA:

Field	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Customer Number	Existing customer numbers in the database	Non-existing numbers, null/empty	Existing values	Null/Empty values
Room Number	Existing room numbers assigned to the customer	Non-existing rooms, null/empty	Existing values	Null/Empty values

(b). Test Cases:

Test Case	Description	Input	Expected Outcome	New Tags Covered
1	All inputs valid, existing customer and room	Customer Number: 101, Room Number: 505	"Check Out Successful"	V1, V2
2	Customer number does not exist	Customer Number: 999, Room Number: 505	Error: "Customer does not exist"	B1, B3
3	Room number does not exist	Customer Number: 101, Room Number: 999	Error: "Room does not exist"	B2, B4
4	Room number field is empty	Customer Number: 101, Room Number: (empty)	Error: "Room number cannot be empty"	B5, B6
5	Customer number is empty	Customer Number: (empty), Room Number: 505	Error: "Customer number cannot be empty"	B7
6	Room number belongs to another customer	Customer Number: 102, Room Number: 505 (belongs to 101)	Error: "Room is not assigned to this customer"	B8
7	Customer number and room number are both empty	Customer Number: (empty), Room Number: (empty)	Error: "All fields are required"	B9, B10
8	Valid input but database connection fails	Customer Number: 101, Room Number: 505	Error: "Database connection error"	B11
9	Room already marked as "Available"	Customer Number: 101, Room Number: 505 (already available)	Error: "Room is already available"	B12
10	Valid inputs with boundary values	Customer Number: 001, Room Number: 101	"Check Out Successful"	V3, V4

5. CustomerInfo.java:

(a). ECP and BVA:

Field	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Customer ID	Numeric strings representing valid customer IDs	Non-numeric, null/empty, non-existing IDs	Minimum valid ID (1)	Null/Empty values
Customer Number	Numeric strings corresponding to valid customers	Non-numeric, null/empty, non-existing numbers	Existing values	Null/Empty values
Name	Non-empty alphabetic strings	Empty string, numeric, or special characters	-	-
Gender	"Male", "Female"	Null/empty, any other string	-	-
Country	Non-empty alphabetic strings	Empty string, numeric, or special characters	-	-
Room Number	Existing room numbers assigned to the customer	Non-existing, null/empty	Minimum valid room ID	Null/Empty values
Check-in Status	"Checked-in", "Checked-out"	Null/empty, any other string	-	-
Deposit	Positive numeric values	Non-numeric, negative, or zero	1	0, -1

(b). Test Cases Table

Test Case	Description	Input	Expected Outcome	New Tags Covered
1	All data valid	ID: 101, Number: 001, Name: Zain, Gender: Male, Country: Pakistan, Room: 505, Status: Checked-in, Deposit: 5000	Data displayed successfully	V1, V2
2	Customer ID does not exist	ID: 999, Number: 001, Name: Zain, Gender: Male, Country: Pakistan, Room: 505, Status: Checked-in, Deposit: 5000	Error: "Customer ID does not exist"	B1, B3
3	Customer Number is empty	ID: 101, Number: (empty), Name: Zain, Gender: Male, Country: Pakistan, Room: 505, Status: Checked-in, Deposit: 5000	Error: "Customer number cannot be empty"	B2, B4
4	Name is empty	ID: 101, Number: 001, Name: (empty), Gender: Male, Country: Pakistan, Room: 505, Status: Checked-in, Deposit: 5000	Error: "Name cannot be empty"	B5, B6
5	Invalid gender	ID: 101, Number: 001, Name: Zain, Gender: Other, Country: Pakistan, Room: 505, Status: Checked-in, Deposit: 5000	Error: "Invalid gender"	B7
6	Room number does not exist	ID: 101, Number: 001, Name: Zain, Gender: Male, Country: Pakistan, Room: 999, Status: Checked-in, Deposit: 5000	Error: "Room does not exist"	B8
7	Check-in status is invalid	ID: 101, Number: 001, Name: Zain, Gender: Male, Country: Pakistan, Room: 505, Status: Pending, Deposit: 5000	Error: "Invalid check-in status"	B9
8	Deposit is negative	ID: 101, Number: 001, Name: Zain, Gender: Male, Country:	Error: "Deposit must be positive"	B10

Test Case	Description	Input	Expected Outcome	New Tags Covered
		Pakistan, Room: 505, Status: Checked-in, Deposit: -5000		
9	Valid inputs with minimum boundary deposit	ID: 101, Number: 001, Name: Zain, Gender: Male, Country: Pakistan, Room: 505, Status: Checked-in, Deposit: 1	Data displayed successfully	V3, V4
10	Valid inputs with empty country	ID: 101, Number: 001, Name: Zain, Gender: Male, Country: (empty), Room: 505, Status: Checked-in, Deposit: 5000	Error: "Country cannot be empty"	B11
11	Combination of multiple invalid fields	ID: 999, Number: (empty), Name: (empty), Gender: Other, Country: (empty), Room: 999, Status: Pending, Deposit: -5000	Error for multiple fields	B12, B13, B14

6. Dashboard.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Menu Selection	Valid menu items (Reception, Add Employee, Add Rooms, Add Drivers)	Invalid menu items (non-existent options)	-	-
Window Opening	Successful display of target windows	Window fails to open	-	-
GUI Rendering	Complete layout with all components visible	Missing components or layout issues	-	-

(b). Test Cases:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Select "RECEPTION" menu item	Click "RECEPTION"	Reception window opens successfully	V1
2	Select "ADD EMPLOYEE" menu item	Click "ADD EMPLOYEE"	AddEmployee window opens successfully	V2
3	Select "ADD ROOMS" menu item	Click "ADD ROOMS"	AddRoom window opens successfully	V3
4	Select "ADD DRIVERS" menu item	Click "ADD DRIVERS"	AddDrivers window opens successfully	V4
5	Invalid menu option	Click a menu option not available (simulate invalid input)	Error: "Menu option not available"	B1
6	GUI renders correctly on launch	Launch the Dashboard application	All components render correctly	V5
7	Missing components on launch	Launch the Dashboard application but simulate missing components	Error: "GUI components not loaded"	B2
8	Large screen resolution	Launch the Dashboard application on a high-resolution display (e.g., 4K)	Layout scales correctly	V6
9	Small screen resolution	Launch the Dashboard application on a	Layout adjusts or scrollbars appear	V7

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
		low-resolution display (e.g., 1024x768)		
10	Window fails to open	Select any menu item, but simulate a failure to open the target window	Error: "Failed to open window"	B3

7. Department.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Load Data Action	Valid database connection and existing data	No database connection, no data in the table	-	-
Back Button Action	Button successfully navigates to Reception	Button does not work or leads to the wrong screen	-	-
Department Data	Valid department names and budget entries	Missing, null, or invalid data in the table	Budget > 0	Budget ≤ 0
GUI Rendering	Complete layout with visible components	Missing components or layout issues	-	-

(b). Test Cases:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Load data with valid database connection	Click "Load Data" button with valid connection and existing department data	Department data loads successfully	V1, V2
2	Load data with no database connection	Click "Load Data" button with no database connection	Error: "Cannot connect to database"	B1
3	Load data with empty department table	Click "Load Data" button with no records in the department table	Error: "No data available"	B2
4	Navigate back to Reception	Click "Back" button	Reception window opens successfully	V3
5	Back button leads to wrong screen	Click "Back" button but navigation is misconfigured	Error: "Invalid navigation"	B3
6	Missing department names in table	Load department data where some department names are null	Error: "Invalid data in table"	B4
7	Missing budget entries in table	Load department data where some budgets are null	Error: "Invalid data in table"	B5
8	Invalid budget entries (≤ 0)	Load department data where some budgets are zero or negative	Error: "Budget must be positive"	B6
9	GUI renders correctly on launch	Launch the Department application	All components render correctly	V4
10	Missing components on GUI	Launch the Department application with missing GUI elements	Error: "GUI components not loaded"	B7

8. Employee.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Load Data Action	Valid database connection and existing data	No database connection, no data in the table	-	-
Back Button Action	Button successfully navigates to Reception	Button does not work or leads to the wrong screen	-	-
Employee Data	Valid employee details (name, age, gender, job, etc.)	Missing, null, or invalid data in the table	Age ≥ 18	Age < 18
Salary	Positive numeric values	Non-numeric, negative, or zero	1	0, -1
Phone	10-digit numeric strings	Non-numeric, < 10 digits, > 10 digits	10 digits	< 10 or > 10 digits
Aadhar	12-digit numeric strings	Non-numeric, < 12 digits, > 12 digits	12 digits	< 12 or > 12 digits
Email	Valid email format (e.g., abc@xyz.com)	Invalid email format or empty values	-	-
GUI Rendering	Complete layout with visible components	Missing components or layout issues	-	-

(b). Test Cases:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Load data with valid database connection	Click “Load Data” button with valid connection and existing employee data	Employee data loads successfully	V1, V2
2	Load data with no database connection	Click “Load Data” button with no database connection	Error: “Cannot connect to database”	B1
3	Load data with empty employee table	Click “Load Data” button with no records in the employee table	Error: “No data available”	B2
4	Navigate back to Reception	Click “Back” button	Reception window opens successfully	V3
5	Back button leads to wrong screen	Click “Back” button but navigation is misconfigured	Error: “Invalid navigation”	B3
6	Missing employee name in table	Load employee data where some names are null	Error: “Invalid data in table”	B4
7	Employee age is below the minimum	Load employee data where some ages are less than 18	Error: “Invalid data in table”	B5
8	Employee salary is negative	Load employee data where some salaries are negative	Error: “Salary must be positive”	B6
9	Phone number is less than 10 digits	Load employee data where some phone numbers have less than 10 digits	Error: “Invalid phone number”	B7

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
10	Phone number is more than 10 digits	Load employee data where some phone numbers have more than 10 digits	Error: "Invalid phone number"	B8
11	Invalid email format	Load employee data where some emails are in an invalid format	Error: "Invalid email format"	B9
12	Missing Aadhar number	Load employee data where some Aadhar numbers are null	Error: "Invalid data in table"	B10
13	Aadhar number is less than 12 digits	Load employee data where some Aadhar numbers are less than 12 digits	Error: "Invalid Aadhar number"	B11
14	GUI renders correctly on launch	Launch the Employee application	All components render correctly	V4
15	Missing components on GUI	Launch the Employee application with missing GUI elements	Error: "GUI components not loaded"	B12

9. HotelManagementSystem.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Next Button Action	Button successfully navigates to the Login screen	Button does not work or navigates to the wrong screen	-	-
Welcome Screen	Welcome screen displays with all elements visible	Missing, null, or incorrectly rendered components	-	-
Flashing Label	Label alternates visibility as expected	Label does not alternate visibility	-	-

(b). Test Cases:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Display welcome screen with valid components	Launch the application	Welcome screen renders successfully	V1
2	Missing components on welcome screen	Launch the application with missing GUI elements	Error: "GUI components not loaded"	B1
3	Flashing label alternates visibility correctly	Observe the flashing "HOTEL MANAGEMENT SYSTEM" label	Label alternates visibility as expected	V2
4	Flashing label does not alternate	Label fails to alternate visibility due to thread interruption	Error: "Flashing label malfunction"	B2

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
5	Navigate to the Login screen	Click the "Next" button	Login screen opens successfully	V3
6	Button navigation fails	Click the "Next" button but navigation is misconfigured	Error: "Failed to navigate to Login screen"	B3
7	Welcome screen scales correctly	Launch the application on a high-resolution display (e.g., 4K)	Layout scales correctly	V4
8	Welcome screen does not scale correctly	Launch the application on a low-resolution display (e.g., 1024x768)	Error: "Welcome screen layout issues"	B4

10. Login.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Username Input	Valid usernames present in the database	Null/empty usernames, usernames not in the database	-	Null/Empty values
Password Input	Valid passwords associated with the username	Null/empty passwords, passwords not matching the username	-	Null/Empty values

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Login Button Action	Button successfully authenticates and navigates	Button does not work or navigates to the wrong screen	-	-
Cancel Button Action	Button exits the application	Button does not work	-	-
GUI Rendering	All components render and align correctly	Missing components or layout issues	-	-

(b). Test Cases:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Login with valid credentials	Enter valid username and password, then click "Login"	Dashboard opens successfully	V1, V2
2	Login with invalid username	Enter a username not in the database and a valid password, then click "Login"	Error: "Invalid login"	B1, B3
3	Login with invalid password	Enter a valid username and an incorrect password, then click "Login"	Error: "Invalid login"	B2, B4
4	Login with empty username	Leave the username field empty and enter a valid password, then click "Login"	Error: "Username cannot be empty"	B5

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
5	Login with empty password	Enter a valid username and leave the password field empty, then click "Login"	Error: "Password cannot be empty"	B6
6	Both username and password are empty	Leave both fields empty, then click "Login"	Error: "All fields are required"	B7
7	Cancel button exits application	Click "Cancel" button	Application closes successfully	V3
8	Login navigation fails	Enter valid credentials, then simulate navigation failure after clicking "Login"	Error: "Failed to navigate to Dashboard"	B8
9	GUI renders correctly	Launch the application	All components render correctly	V4
10	Missing components on GUI	Launch the application with missing GUI elements	Error: "GUI components not loaded"	B9

11. ManagerInfo.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Load Data Action	Valid database connection and existing manager data	No database connection, no managers in the table	-	-
Back Button Action	Button successfully navigates to Reception	Button does not work or leads to the wrong screen	-	-
Manager Data	Valid manager details (name, age, gender, job, etc.)	Missing, null, or invalid data in the table	Age ≥ 18	Age < 18
Salary	Positive numeric values	Non-numeric, negative, or zero	1	0, -1
Phone	10-digit numeric strings	Non-numeric, < 10 digits, > 10 digits	10 digits	< 10 or > 10 digits
Aadhar	12-digit numeric strings	Non-numeric, < 12 digits, > 12 digits	12 digits	< 12 or > 12 digits
Email	Valid email format (e.g., abc@xyz.com)	Invalid email format or empty values	-	-
GUI Rendering	Complete layout with visible components	Missing components or layout issues	-	-

(b). Test Cases:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Load data with valid database connection	Click "Load Data" button with valid connection and existing manager data	Manager data loads successfully	V1, V2
2	Load data with no database connection	Click "Load Data" button with no database connection	Error: "Cannot connect to database"	B1
3	Load data with no managers in the table	Click "Load Data" button when there are no manager records in the table	Error: "No data available"	B2
4	Navigate back to Reception	Click "Back" button	Reception window opens successfully	V3
5	Back button leads to wrong screen	Click "Back" button but navigation is misconfigured	Error: "Invalid navigation"	B3
6	Missing manager name in table	Load manager data where some names are null	Error: "Invalid data in table"	B4
7	Manager age is below the minimum	Load manager data where some ages are less than 18	Error: "Invalid data in table"	B5
8	Manager salary is negative	Load manager data where some salaries are negative	Error: "Salary must be positive"	B6
9	Phone number is less than 10 digits	Load manager data where some phone numbers have less than 10 digits	Error: "Invalid phone number"	B7
10	Phone number is more than 10 digits	Load manager data where some phone numbers have more than 10 digits	Error: "Invalid phone number"	B8

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
11	Invalid email format	Load manager data where some emails are in an invalid format	Error: "Invalid email format"	B9
12	Missing Aadhar number	Load manager data where some Aadhar numbers are null	Error: "Invalid data in table"	B10
13	Aadhar number is less than 12 digits	Load manager data where some Aadhar numbers are less than 12 digits	Error: "Invalid Aadhar number"	B11
14	GUI renders correctly on launch	Launch the ManagerInfo application	All components render correctly	V4
15	Missing components on GUI	Launch the ManagerInfo application with missing GUI elements	Error: "GUI components not loaded"	B12

12. NewCustomer.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
ID Type	"Passport", "Aadhar Card", "Voter Id", "Driving license"	Null/empty, any other string	-	-
ID Number	Non-empty alphanumeric strings	Null/empty, special characters	-	-
Name	Non-empty alphabetic strings	Null/empty, numeric, or special characters	-	-

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Gender	"Male", "Female"	Null/empty, any other string	-	-
Country	Non-empty alphabetic strings	Null/empty, numeric, or special characters	-	-
Allocated Room Number	Existing room numbers in the database	Null/empty, non-existing room numbers	Minimum valid room ID	Null/Empty values
Checked-In Status	Valid alphanumeric strings	Null/empty	-	-
Deposit	Positive numeric values	Non-numeric, negative, or zero	1	0, -1
GUI Rendering	Complete layout with visible components	Missing components or layout issues	-	-

(b). Test Cases:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Add valid customer details	Enter valid ID type, number, name, gender, country, room number, checked-in status, and deposit, then click "Add"	Data inserted successfully	V1, V2
2	Missing ID type	Leave the ID type field blank and enter valid details for all other fields, then click "Add"	Error: "ID type cannot be empty"	B1

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
3	Missing ID number	Leave the ID number field blank and enter valid details for all other fields, then click "Add"	Error: "ID number cannot be empty"	B2
4	Invalid name format	Enter numeric or special characters in the name field and valid details for all other fields, then click "Add"	Error: "Invalid name format"	B3
5	Missing gender	Leave gender unselected and enter valid details for all other fields, then click "Add"	Error: "Gender must be selected"	B4
6	Missing country	Leave the country field blank and enter valid details for all other fields, then click "Add"	Error: "Country cannot be empty"	B5
7	Missing allocated room number	Leave the room number field blank and enter valid details for all other fields, then click "Add"	Error: "Room number cannot be empty"	B6
8	Room number does not exist	Enter a room number not in the database and valid details for all other fields, then click "Add"	Error: "Room number does not exist"	B7
9	Missing checked-in status	Leave the checked-in status field blank and enter valid details for all other fields, then click "Add"	Error: "Checked-in status cannot be empty"	B8
10	Invalid deposit (negative value)	Enter a negative value in the deposit field and valid details for all other fields, then click "Add"	Error: "Deposit must be positive"	B9
11	Valid deposit with minimum boundary value	Enter 1 as the deposit amount and valid details for all other fields, then click "Add"	Data inserted successfully	V3

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
12	GUI renders correctly	Launch the NewCustomer application	All components render correctly	V4
13	Missing components on GUI	Launch the NewCustomer application with missing GUI elements	Error: "GUI components not loaded"	B10
14	Back button navigates successfully	Click the "Back" button	Reception window opens successfully	V5
15	Back button fails to navigate	Simulate failure of the "Back" button after clicking	Error: "Navigation failed"	B11

13. Pickup.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Car Brand Selection	Existing car brands in the database	Null/empty, car brands not in the database	-	Null/Empty values
Display Button Action	Button successfully displays the drivers	Button does not work or displays incorrect data	-	-
Driver Data	Valid driver details (name, age, gender, etc.)	Missing, null, or invalid data in the table	Age ≥ 18	Age < 18
GUI Rendering	Complete layout with visible components	Missing components or layout issues	-	-

(b). Test Case:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Select valid car brand and display drivers	Select an existing car brand and click "Display"	Driver data loads successfully	V1, V2
2	Car brand selection is empty	Leave the car brand unselected and click "Display"	Error: "Car brand cannot be empty"	B1
3	Non-existing car brand	Select a car brand not present in the database and click "Display"	Error: "No data available for this car brand"	B2
4	Missing driver name in table	Load driver data where some names are null	Error: "Invalid data in table"	B3
5	Driver age is below the minimum	Load driver data where some ages are less than 18	Error: "Invalid data in table"	B4
6	Missing driver gender	Load driver data where some gender fields are null	Error: "Invalid data in table"	B5
7	GUI renders correctly	Launch the PickUp application	All components render correctly	V3
8	Missing components on GUI	Launch the PickUp application with missing GUI elements	Error: "GUI components not loaded"	B6
9	Back button navigates successfully	Click the "Back" button	Reception window opens successfully	V4
10	Back button fails to navigate	Simulate failure of the "Back" button after clicking	Error: "Navigation failed"	B7

14. Reception.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Button Navigation	Buttons successfully navigate to target screens	Buttons do not work or navigate to incorrect screens	-	-
GUI Rendering	All buttons and labels render correctly	Missing components or layout issues	-	-

(b). Test Case:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Navigate to "New Customer Form"	Click "New Customer Form" button	NewCustomer screen opens successfully	V1
2	Navigate to "Room"	Click "Room" button	Room screen opens successfully	V2
3	Navigate to "Department"	Click "Department" button	Department screen opens successfully	V3
4	Navigate to "All Employee Info"	Click "All Employee Info" button	Employee screen opens successfully	V4
5	Navigate to "Customer Info"	Click "Customer Info" button	CustomerInfo screen opens successfully	V5
6	Navigate to "Manager Info"	Click "Manager Info" button	ManagerInfo screen opens successfully	V6

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
7	Navigate to "Check Out"	Click "Check Out" button	CheckOut screen opens successfully	V7
8	Navigate to "Update Check Status"	Click "Update Check Status" button	UpdateCheck screen opens successfully	V8
9	Navigate to "Update Room Status"	Click "Update Room Status" button	UpdateRoom screen opens successfully	V9
10	Navigate to "Pick up Service"	Click "Pick up Service" button	PickUp screen opens successfully	V10
11	Navigate to "Search Room"	Click "Search Room" button	SearchRoom screen opens successfully	V11
12	Navigate to "Log Out"	Click "Log Out" button	Login screen opens successfully	V12
13	Button navigation fails	Click any button but simulate failure in navigation	Error: "Failed to navigate to the screen"	B1
14	GUI renders correctly	Launch the Reception application	All components render correctly	V13
15	Missing components on GUI	Launch the Reception application with missing GUI elements	Error: "GUI components not loaded"	B2

15. Room.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Room Data Load Action	Valid database connection with existing room data	No database connection, no data in the table	-	-
Room Number	Existing room numbers in the database	Null/empty, non-existing room numbers	Minimum valid room ID	Null/Empty values
Availability	"Available", "Occupied"	Null/empty, any other string	-	-
Clean Status	"Cleaned", "Dirty"	Null/empty, any other string	-	-
Price	Positive numeric values	Non-numeric, negative, or zero	1	0, -1
Bed Type	"Single Bed", "Double Bed"	Null/empty, any other string	-	-
GUI Rendering	All labels and buttons render correctly	Missing components or layout issues	-	-

(b). Test Case:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Load data with valid database connection	Click "Load Data" button with valid connection and existing room data	Room data loads successfully	V1, V2

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
2	Load data with no database connection	Click "Load Data" button with no database connection	Error: "Cannot connect to database"	B1
3	Load data with empty room table	Click "Load Data" button with no records in the room table	Error: "No data available"	B2
4	Missing room number	Load room data where some room numbers are null	Error: "Invalid data in table"	B3
5	Missing availability status	Load room data where some availability statuses are null	Error: "Invalid data in table"	B4
6	Invalid availability status	Load room data where some availability statuses are not "Available" or "Occupied"	Error: "Invalid availability status"	B5
7	Invalid clean status	Load room data where some clean statuses are not "Cleaned" or "Dirty"	Error: "Invalid clean status"	B6
8	Missing bed type	Load room data where some bed types are null	Error: "Invalid bed type"	B7
9	Invalid price (negative value)	Load room data where some prices are negative	Error: "Price must be positive"	B8
10	Valid price with minimum boundary value	Load room data with a price of 1	Room data loads successfully	V3
11	GUI renders correctly	Launch the Room application	All components render correctly	V4
12	Missing components on GUI	Launch the Room application with missing GUI elements	Error: "GUI components not loaded"	B9

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
13	Navigate back to Reception	Click the "Back" button	Reception screen opens successfully	V5
14	Back button fails to navigate	Simulate failure of the "Back" button after clicking	Error: "Navigation failed"	B10

16. SearchRoom.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Bed Type Selection	"Single Bed", "Double Bed"	Null/empty, any other string	-	-
Availability Filter	"Available"	Null/empty, any other string	-	-
Room Number	Existing room numbers in the database	Null/empty, non-existing room numbers	Minimum valid room ID	Null/Empty values
Clean Status	"Cleaned", "Dirty"	Null/empty, any other string	-	-
Price	Positive numeric values	Non-numeric, negative, or zero	1	0, -1
Search Action	Button successfully filters and displays room data	Button does not work or displays incorrect data	-	-

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
GUI Rendering	All labels, buttons, and the table render correctly	Missing components or layout issues	-	-

(b). Test Case:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Search with valid bed type	Select "Single Bed" or "Double Bed" and click "Search"	Room data with selected bed type loads successfully	V1, V2
2	Search with "Only display Available" checked	Select "Single Bed" or "Double Bed", check the "Only display Available" checkbox, and click "Search"	Only available rooms with the selected bed type are displayed	V3
3	Bed type selection is empty	Leave bed type unselected and click "Search"	Error: "Bed type cannot be empty"	B1
4	Room table is empty	Select a bed type where no rooms match the filter and click "Search"	Error: "No data available"	B2
5	Invalid clean status in table	Load room data where some clean statuses are not "Cleaned" or "Dirty"	Error: "Invalid clean status"	B3

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
6	Invalid price (negative value) in table	Load room data where some prices are negative	Error: "Price must be positive"	B4
7	Valid price with minimum boundary value	Load room data with a price of 1	Room data loads successfully	V4
8	GUI renders correctly	Launch the SearchRoom application	All components render correctly	V5
9	Missing components on GUI	Launch the SearchRoom application with missing GUI elements	Error: "GUI components not loaded"	B5
10	Back button navigates successfully	Click the "Back" button	Reception screen opens successfully	V6
11	Back button fails to navigate	Simulate failure of the "Back" button after clicking	Error: "Navigation failed"	B6

17. UpdateCheck.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Customer ID Selection	Existing customer IDs in the database	Null/empty, non-existing customer IDs	Minimum valid ID (1)	Null/Empty values
Room Number	Existing room numbers in the database	Null/empty, non-existing room numbers	Minimum valid room ID	Null/Empty values
Name	Non-empty alphabetic strings	Null/empty, numeric, or special characters	-	-
Check-In Status	Valid status strings	Null/empty, any other string	-	-
Amount Paid	Positive numeric values	Non-numeric, negative, or zero	1	0, -1
Pending Amount	Positive numeric values	Non-numeric, negative, or zero	1	0, -1
Check Button Action	Button successfully fetches and displays data	Button does not work or displays incorrect data	-	-
Update Button Action	Button successfully updates customer details	Button does not work or updates incorrect data	-	-
GUI Rendering	All labels, buttons, and text fields render correctly	Missing components or layout issues	-	-

(b). Test Case:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Fetch details for a valid customer ID	Select an existing customer ID and click "Check" button	Customer data loads successfully	V1, V2
2	Fetch details for an invalid customer ID	Select a non-existing customer ID and click "Check" button	Error: "Customer ID not found"	B1
3	Update with valid details	Enter valid room number, name, status, and amount paid, then click "Update"	Data updates successfully	V3, V4
4	Update with missing room number	Leave the room number field blank and click "Update"	Error: "Room number cannot be empty"	B2
5	Update with invalid name format	Enter numeric or special characters in the name field and click "Update"	Error: "Invalid name format"	B3
6	Calculate pending payment with valid data	Enter a valid room price and amount paid, then click "Check" button	Pending amount calculated successfully	V5
7	Calculate pending payment with invalid data	Enter a negative value for amount paid and click "Check" button	Error: "Amount paid must be positive"	B4
8	GUI renders correctly	Launch the UpdateCheck application	All components render correctly	V6
9	Missing components on GUI	Launch the UpdateCheck application with missing GUI elements	Error: "GUI components not loaded"	B5

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
10	Back button navigates successfully	Click the “Back” button	Reception screen opens successfully	V7
11	Back button fails to navigate	Simulate failure of the “Back” button after clicking	Error: “Navigation failed”	B6

18. UpdateRoom.java:

(a). ECP and BVA:

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
Guest ID Selection	Existing guest IDs in the database	Null/empty, non-existing guest IDs	Minimum valid ID (1)	Null/Empty values
Room Number	Existing room numbers in the database	Null/empty, non-existing room numbers	Minimum valid room ID	Null/Empty values
Availability	“Available”, “Occupied”	Null/empty, any other string	-	-
Clean Status	“Cleaned”, “Dirty”	Null/empty, any other string	-	-
Check Button Action	Button successfully fetches room and guest data	Button does not work or displays incorrect data	-	-
Update Button Action	Button successfully updates room details	Button does not work or updates incorrect data	-	-

Field/Action	Valid Partitions	Invalid Partitions	Valid Boundaries	Invalid Boundaries
GUI Rendering	All labels, buttons, and text fields render correctly	Missing components or layout issues	-	-

(b). Test Case:

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
1	Fetch details for a valid guest ID	Select an existing guest ID and click "Check" button	Room data loads successfully	V1, V2
2	Fetch details for an invalid guest ID	Select a non-existing guest ID and click "Check" button	Error: "Guest ID not found"	B1
3	Update with valid room status	Enter valid room availability and clean status, then click "Update"	Data updates successfully	V3, V4
4	Update with missing room number	Leave the room number field blank and click "Update"	Error: "Room number cannot be empty"	B2
5	Update with invalid availability status	Enter an invalid string for availability (e.g., "Pending") and click "Update"	Error: "Invalid availability status"	B3
6	Update with invalid clean status	Enter an invalid string for clean status (e.g., "Partial") and click "Update"	Error: "Invalid clean status"	B4
7	GUI renders correctly	Launch the UpdateRoom application	All components render correctly	V5

Test Case	Description	Action/Scenario	Expected Outcome	New Tags Covered
8	Missing components on GUI	Launch the UpdateRoom application with missing GUI elements	Error: "GUI components not loaded"	B5
9	Back button navigates successfully	Click the "Back" button	Reception screen opens successfully	V6
10	Back button fails to navigate	Simulate failure of the "Back" button after clicking	Error: "Navigation failed"	B6