



BANGLADESH UNIVERSITY OF PROFESSIONALS (BUP)

Feature-wise Test Suite Generation

Project Title: Blood Donation Portal

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Test Suite for Blood Donation Portal

1. User Registration & login

Registration - Test Case

Test case: Registration				
Pre-Requisite: User must not already have an account with the same email or phone number.		Post-Requisite: User account is created and stored in the system, and the user is optionally logged in or redirected to the login page.		
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Valid name, email, password, phone	Account created successfully, redirect to login/dashboard	Account created successfully, redirect to login/dashboard	Pass
2	Email already registered	Error message: "Email already in use"	Error message: "Email already in use"	Pass
3	Weak password ("abcd123")	Error message: "Password does not meet complexity"	Error message: "Password does not meet complexity"	Pass
4	Empty fields	Error message: "All fields are required"	Error message: "All fields are required"	Pass
5	Invalid email format (e.g., "user@.com")	Error message: "Invalid email format"	Error message: "Invalid email format"	Pass
6	Hospital or Blood Bank registration	"Registration pending admin approval" Admin notification triggered	Status shown as "Pending"	Pass
7	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

Login - Test Case

Test case: Login				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Valid username and correct password	Login successful. Redirect to dashboard	Login successful. Redirect to dashboard	Pass
2	Valid username and incorrect password	Error message: 'Incorrect password'	Error message: 'Incorrect password'	Pass
3	Invalid username and any password	Error message: 'User not found'	Error message: 'User not found'	Pass
4	Empty username and password fields	Error message: 'Fields cannot be empty'	Error message: 'Fields cannot be empty'	Pass
5	SQL injection input in username field	Error message: 'Invalid credentials'	Error message: 'Invalid credentials'	Pass
6	Unregistered email and any password	Error message: "Account not found"	Error message: "Account not found"	Pass
7	Valid email and password with MFA enabled	Prompt for OTP verification step appears	Prompt for OTP verification step appears	Pass
8	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

2. Donor Profile Management

Donor Profile Management - Test Case

Test Case: Donor Profile Management				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Edit profile with valid details	Profile updated successfully	Profile updated successfully	Pass
2	Delete donor profile	Profile deleted successfully	Profile deleted successfully	Pass
3	Upload profile image	Image uploaded successfully	Image uploaded successfully	Pass
4	Enter an invalid phone number	Error message: 'Invalid phone number'	Error message: 'Invalid phone number'	Pass
5	Leave mandatory fields empty	Error: All fields are mandatory	Error: All fields are mandatory	Pass
6	Edit Profile with invalid blood group	Error message: 'Invalid blood group'	Error message: 'Invalid blood group'	Pass
7	Upload medical certificate (Valid file type - PDF/JPG/PNG)	Success: "Document uploaded" + visible in profile	File stored, preview available	Pass
8	Invalid medical certificate file upload	Error: "Only PDF/JPG/PNG allowed"	Upload rejected	Pass
9	Frequent donation attempt, example: Last Donation: 2025-05-28 (today is 2025-05-30)	Warning: "Next eligible donation: 2025-07-23"	Warning displayed with date calc	Pass
10	Invalid health data, example: Weight: 40kg (below minimum)	Error: "Minimum 50kg required to donate"	Error displayed; changes not saved	Pass
11	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

3. Blood Donation Request

Blood Donation Request - Test Case

Test Case: Blood Donation Request				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Request donation with valid details	Request submitted successfully	Request submitted successfully	Pass
2	Request with invalid date	Error: Invalid date	Error: Invalid date	Pass
3	Request without blood group	Error: Blood group required	Error: Blood group required	Pass
4	Multiple requests in short time	Error: Too many requests	Error: Too many requests	Pass
5	Cancel donation request	Request cancelled successfully	Request cancelled successfully	Pass
6	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

4. Donation History and Tracking

Donation History – Test Case

Test Case: Donation History				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	View history with past donations	Donation history displayed	Donation history displayed	Pass
2	No previous donations	Message: No donation history found	Message: No donation history found	Pass
3	Sort donation history by date	History sorted correctly	History sorted correctly	Pass
4	Export donation history	Download initiated	Download initiated	Pass
5	Access donation details	Details displayed	Details displayed	Pass

Tracking - Test Case

Test Case: Tracking				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Track blood donation status	Status displayed: In progress	Status displayed: In progress	Pass
2	Track with invalid tracking ID	Error: Invalid tracking ID	Error: Invalid tracking ID	Pass
3	Track cancelled donation	Message: Donation was cancelled	Message: Donation was cancelled	Pass
4	Track completed donation	Message: Donation completed	Message: Donation completed	Pass
5	Refresh tracking page	Tracking data reloaded	Tracking data reloaded	Pass
6	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

5. Emergency Blood Requests

Emergency Blood Requests - Test Case

Emergency Blood Requests - Test Case				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Submit emergency request with valid data	Emergency request submitted	Emergency request submitted	Pass
2	Submit request without reason	Error: Reason required	Error: Reason required	Pass
3	Invalid contact number	Error: Invalid contact number	Error: Invalid contact number	Pass
4	Empty request form	Error: All fields required	Error: All fields required	Pass
5	Submit multiple requests	Error: Only one request allowed	Error: Only one request allowed	Pass
6	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

6. Blood Compatibility Checker

Blood Compatibility Checker - Test Case

Test Case: Blood Compatibility Checker				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Check compatibility for A+	Results displayed correctly	Results displayed correctly	Pass
2	Check compatibility for O-	Results displayed correctly	Results displayed correctly	Pass
3	Empty blood type input	Error: Select blood type	Error: Select blood type	Pass
4	Invalid blood type	Error: Invalid blood type	Error: Invalid blood type	Pass
5	Lowercase input 'ab+'	Results displayed correctly	Results displayed correctly	Pass

7. Donor Search with Filters

Donor Search with Filters - Test Case

Test Case: Donor Search with Filters				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Search by city and blood group	Filtered donors displayed	Filtered donors displayed	Pass
2	Search with no filters	All donors displayed	All donors displayed	Pass
3	Invalid filter input	Error: Invalid filter	Error: Invalid filter	Pass
4	Search with an empty city	Donors from all cities displayed	Donors from all cities displayed	Pass
5	Search a non-existent group	No donors found	No donors found	Pass
6	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

8. Blood Bank & Hospital Integration

Blood Bank & Hospital Integration - Test Case

Test Case: Blood Bank & Hospital Integration				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Fetch available blood units	List of units displayed	List of units displayed	Pass
2	Link hospital with system	Hospital linked successfully	Hospital linked successfully	Pass
3	Invalid hospital ID	Error: Hospital not found	Error: Hospital not found	Pass
4	Request blood from bank	Request processed	Request processed	Pass
5	Unauthorized access to bank	Error: Unauthorized access	Error: Unauthorized access	Pass

9. Admin Panel

Admin Panel - Test Case

Test Case: Admin Panel				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Login as admin	Redirect to admin dashboard	Redirect to admin dashboard	Pass
2	Delete a user	User deleted successfully	User deleted successfully	Pass
3	Edit system configuration	Changes saved	Changes saved	Pass
4	View reports	Reports displayed	Reports displayed	Pass
5	Unauthorized admin access	Error: Access denied	Error: Access denied	Pass
6	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass

10. Feedback and rating

Feedback and Rating - Test Case

Test Case: Feedback and Rating				
Pre-Requisite: Appropriate system state and user session			Post-Requisite: Result should match expected system behavior	
Sl.no.	Input	Expected Output	Actual Output	Result (Pass/Fail)
1	Submit feedback with rating	Feedback submitted	Feedback submitted	Pass
2	Submit feedback without rating	Error: Rating required	Error: Rating required	Pass
3	View all feedback	Feedback displayed	Feedback displayed	Pass
4	Delete feedback as admin	Feedback deleted	Feedback deleted	Pass
5	Submit multiple feedback	Error: Only one feedback allowed	Error: Only one feedback allowed	Pass
6	Internet Problems/ No connection	Failure message is shown and add event action is rejected	Failure message is shown and add event action is rejected	Pass