Pathly – Career Guide

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1. Unit Testing

1. Test Case: Logo V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
User clicked on Logo.	Page Should jump to Home Page.	Page has jumped to the Home Page.	Pass

2. Test Case: Sign-Up Button V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
User clicked on "Get Started" button.	Page Should jump to Sign-Up Page.	Page has jumped to the Sign-Up Page.	Pass

3. Test Case: Login Button V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail

User clicked on Login button.	Page Should jump to Login Page.	Page has jumped to the Login Page.	Pass

Figure 2: Sign Up Page

Rules:

1. Username must be unique and alphanumeric.

2. Email must be in a valid format (e.g., user@example.com) and unique.

3. Password must contain at least 8 characters, one uppercase, one lowercase, one number, and one special character.

4. If "Counselor" role is selected, CV upload is mandatory (PDF/DOC only).

5. Test Case: Username V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
AliHamad	Should be Accepted.	Username has been Accepted.	Pass
Ali_123	Should be Accepted.	Username has been Accepted.	Pass
(Empty)	Should be Rejected.	Username has been Rejected.	Pass

ExistingUser	Should be Rejected.	Error: "Username already taken".	Pass

6. Test Case: Email V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
student@pathly.com	Should be Accepted.	Has been Accepted.	Pass
student@.com	Should be Rejected.	Has been Rejected.	Pass
student@pathly	Should be Rejected.	Has been Rejected.	Pass
existing@pathly.com	Should be Rejected.	Error: "Email already exists".	Pass

7. Test Case: Password V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
weakpass	Should be Rejected.	Password has been Rejected.	Pass
Student123	Should be Rejected (No special char).	Password has been Rejected.	Pass
Student@123	Should be Accepted.	Password has been Accepted.	Pass

8. Test Case: Role Selection & CV Upload V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Select "Student"	CV field hidden.	CV field hidden.	Pass
Select "Counselor"	CV field visible & required.	CV field visible.	Pass
Upload ".exe" file	Should be Rejected.	Error: "Invalid file type".	Pass
Upload ".pdf" file	Should be Accepted.	File Accepted.	Pass
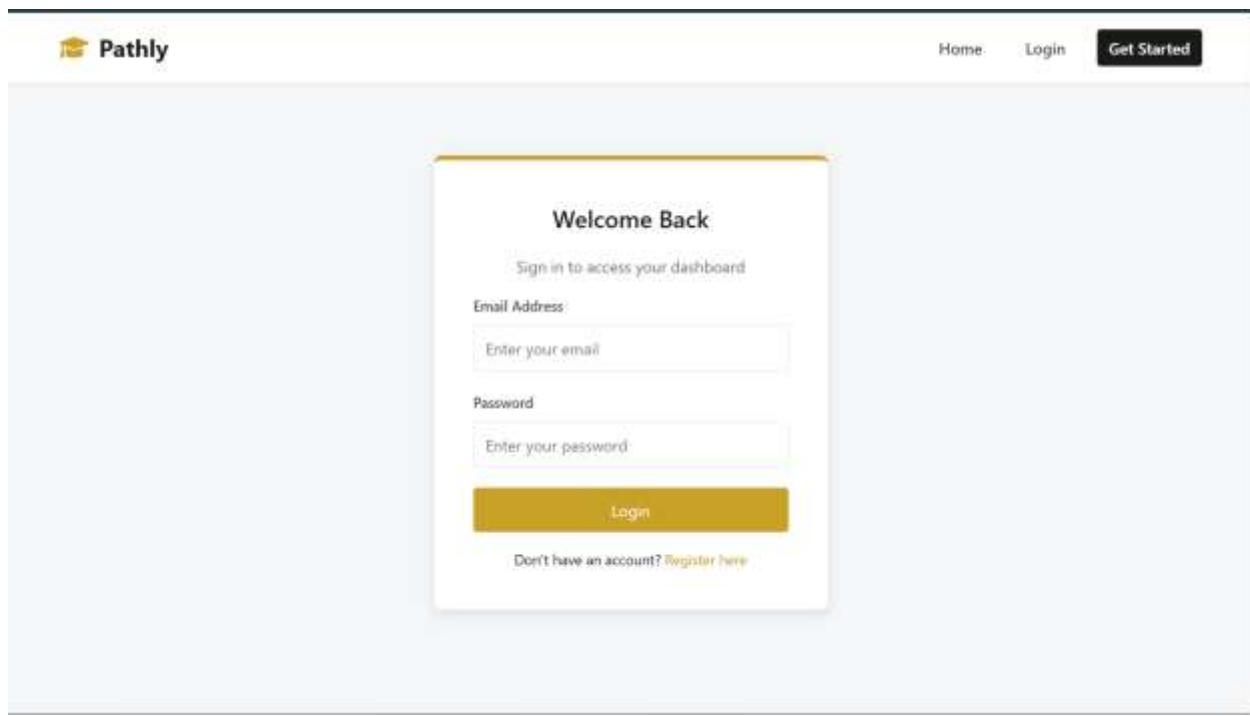
Figure 3: Login Page

9. Test Case: Login V.1.0

• Test Data	• Expected Result	• Actual Result	• Pass/Fail
Valid Email & Password	Should Redirect to Dashboard.	Redirected to Dashboard.	Pass
Invalid Password	Should Show Error.	Error "Invalid Credentials" shown.	Pass
Pending Counselor	Should Show Access Denied.	"Access Denied: Pending" shown.	Pass
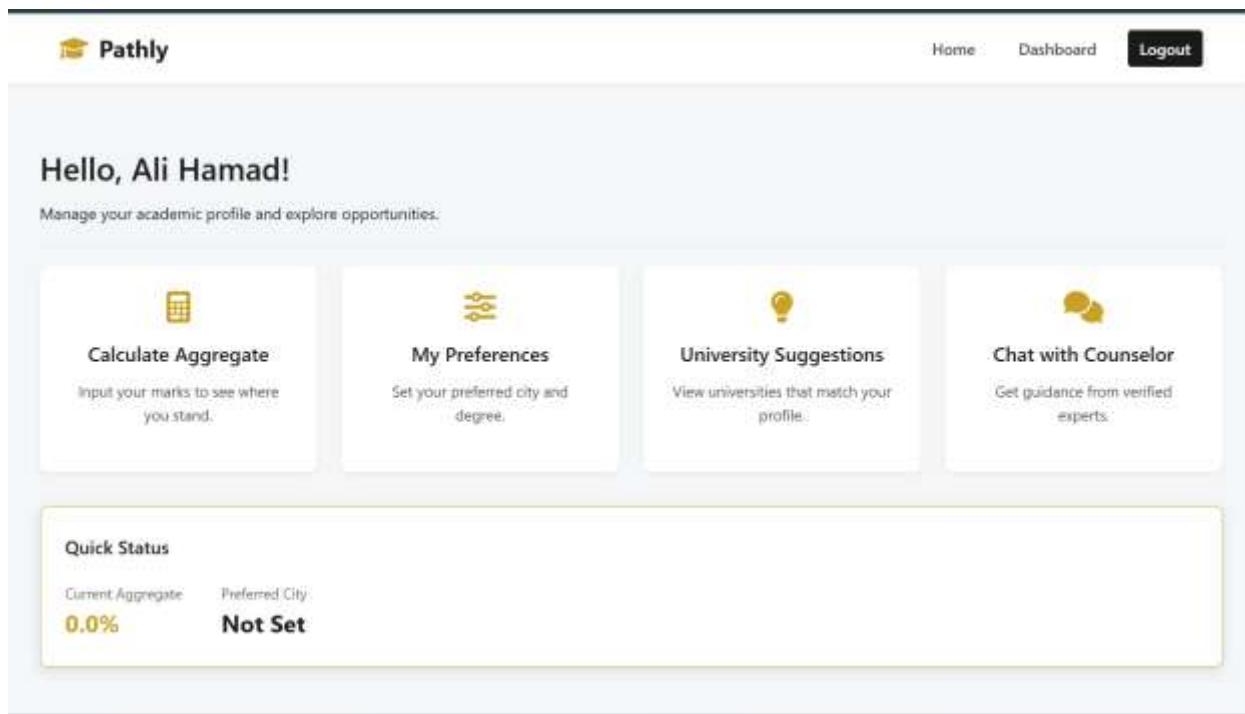
Figure 4: Student Dashboard

10. Test Case: Menu Navigation V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
User clicks "Calculate Aggregate".	Should navigate to Aggregate Page.	User is navigated to Aggregate Page.	Pass
User clicks "My Preferences".	Should navigate to Preferences Page.	User is navigated to Preferences Page.	Pass
User clicks "University Suggestions".	Should navigate to Suggestions Page.	User is navigated to Suggestions Page.	Pass
User clicks "Chat with Counselor".	Should navigate to Chat Page.	User is navigated to Chat Page.	Pass

Figure 5: Calculate Aggregate

11.   Test Case: Formula Selection V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Select "Engineering"	Formula: 10% SSC + 40% HSSC + 50% Test.	Calculation applied correctly.	Pass
Select "Medical"	Formula: 10% SSC + 40% HSSC + 50% Test.	Calculation applied correctly.	Pass
Select "General"	Formula: 20% SSC + 80% HSSC.	Calculation applied correctly.	Pass

12.   Test Case: Marks Validation V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
950 (Valid)	Should be Accepted.	Accepted.	Pass
-50 (Negative)	Should be Rejected.	Error: Invalid Input.	Pass

"ABC" (String)	Should be Rejected.	Error: Invalid Input.	Pass
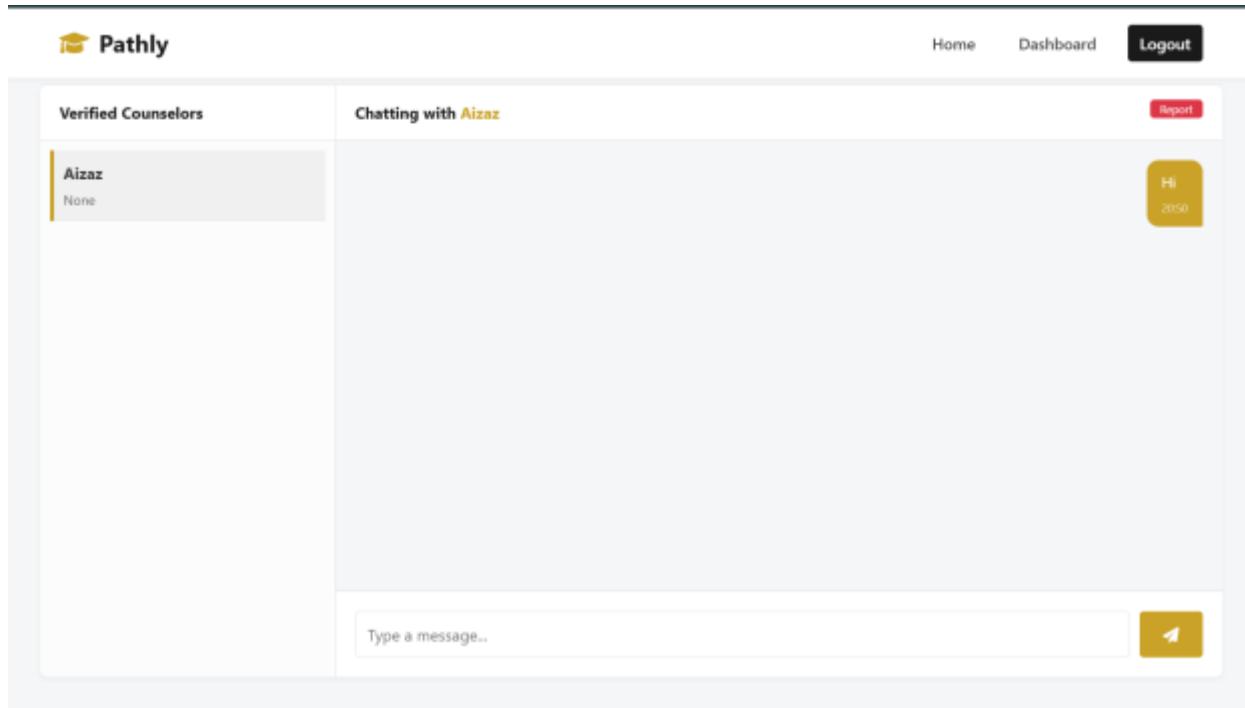
Figure 6: Chat

13.   Test Case: Chat Functionality V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Click on Counselor Name in Sidebar.	Chat window loads for that user.	Chat window loaded.	Pass
Type "Hello" & Send.	Message appears in bubble (Right side).	Message appeared.	Pass
Empty Message.	Send button disabled/ignored.	Ignored.	Pass
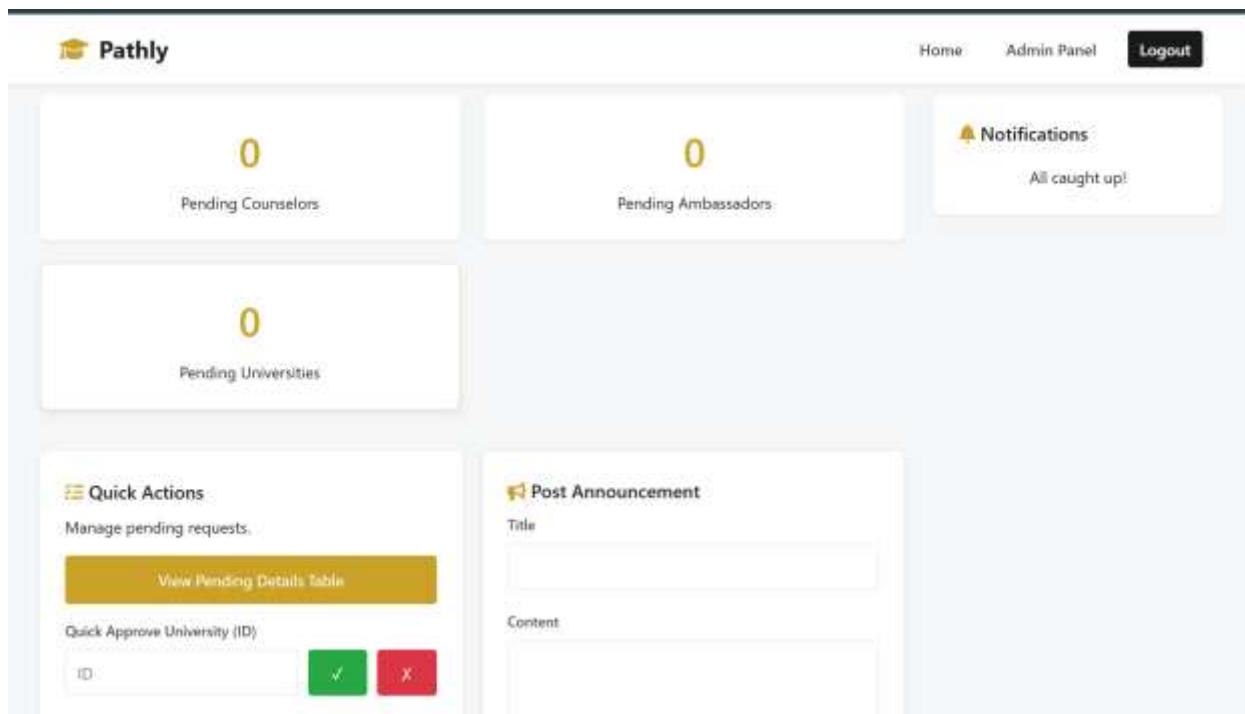
Figure 7: Admin Dashboard

14.   Test Case: Quick Actions V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Admin clicks "View Pending Details".	Should navigate to Pending List Table.	Navigated to Pending List.	Pass
Admin fills Announcement & Clicks Publish.	Announcement should appear on Home.	Announcement Published.	Pass

Figure 8: View Pending Requests

15.   Test Case: Approval Workflow V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Admin clicks "Download" on CV.	CV file opens in browser/downloads.	File Downloaded.	Pass
Admin clicks "Approve".	User Status updates to 'Approved'.	User Approved.	Pass
Admin clicks "Reject".	User Status updates to 'Rejected'.	User Rejected.	Pass

2. Integration Level Testing

1. Home Page V.1.0

2. Test Data	3. Expected Result	4. Actual Result	5. Pass/Fail
User clicks "Get Started".	Page should navigate to Register.	As Expected.	Pass
User clicks "Login".	Page should navigate to Login.	As Expected.	Pass

2. Sign-up Page V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
User enters valid Student details.	Account Created & Redirect to Login.	As Expected.	Pass
User enters valid Counselor details + CV.	Account Created (Pending) & Redirect to Login.	As Expected.	Pass

3. Login V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Student logs in.	Redirects to Student Dashboard.	As Expected.	Pass
Admin logs in.	Redirects to Admin Dashboard.	As Expected.	Pass
Counselor logs in.	Redirects to Counselor Dashboard.	As Expected.	Pass

4. Game Store Page (University Suggestions) V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Student has Aggregate 85% & City "Lahore".	System queries DB for matches.	List of Lahore Universities displayed.	Pass

Student has no preferences.	System shows all approved universities.	As Expected.	Pass

5. Chat Page V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
Student sends message.	Message stored in DB linked to Counselor ID.	As Expected.	Pass
Counselor views dashboard.	Student appears in Sidebar list.	As Expected.	Pass

6. Admin Game Store (Pending Requests) V.1.0

Test Data	Expected Result	Actual Result	Pass/Fail
New Counselor Registers.	Count on Admin Dashboard increases.	As Expected.	Pass
Admin Approves Counselor.	Counselor can now login.	As Expected.	Pass

3. System Level Testing

1. Student Sign-up and Aggregate Calculation

Test Case Information

Field	Details	Field	Details
Test Case ID	PATHLY_001	**Description**	Test Signup, Login, & Aggregate Calc.
Created By	Saman Naz	**Reviewed By**	Dr. Zeeshan

Version	1.0	QA Tester's Log	NULL
Tester's Name	Syed Ali Hamad	Date Tested	05-01-2026
Result	Pass	Prerequisites	1. Access to Chrome Browser. 2. Server running locally.
Test Data	User: AliStudent Pass: Student@123	Marks	SSC=900, HSSC=950, Test=80

Test Scenario: Verify on entering valid data for signup, logging in, and performing core student task.

Step #	Step Details	Expected Results	Actual Results	Pass/Fail
1	Navigate to http://127.0.0.1:5000	Site should open	As Expected	Pass
2	Click "Get Started"	Register page opens	As Expected	Pass
3	Enter Valid Credentials (Student)	Account created	As Expected	Pass
4	Click Login button	Dashboard opens	As Expected	Pass
5	Click "Calculate Aggregate"	Form opens	As Expected	Pass
6	Enter Marks & Select Formula	Result (e.g., 85%) displayed	As Expected	Pass

2. Counselor Registration and Admin Approval

Test Case Information

Field	Details	Field	Details
Test Case ID	PATHLY_002	Description	Test Counselor Registration & Admin Approval
Created By	Rida Shahzad	Reviewed By	Dr. Zeeshan

Version	1.0	QA Tester's Log	NULL
Tester's Name	Syed Ali Hamad	Date Tested	05-01-2026
Result	Pass	Prerequisites	1. Admin account exists. 2. Sample PDF file for CV.

Test Scenario: Verify counselor cannot login until admin approves the request.

Step #	Step Details	Expected Results	Actual Results	Pass/Fail
1	Register as Counselor & Upload CV	Account Pending	As Expected	Pass
2	Attempt Login as Counselor	"Access Denied" Error	As Expected	Pass
3	Login as Admin	Admin Dashboard opens	As Expected	Pass
4	Go to "Pending Details"	Counselor listed	As Expected	Pass
5	Download CV	CV file downloads	As Expected	Pass
6	Click "Approve"	Status updates	As Expected	Pass
7	Login as Counselor again	Dashboard opens successfully	As Expected	Pass

4. Non-Functional Testing

Performance Testing

Performance testing determines how the Pathly application behaves under various conditions.

1. Load Testing:

Load testing simulates increasing demand on the system.

Sr. No.	Functionality	Estimated Load Time (sec)
1	Home Screen	1.2 to 2
2	Authentication	2 to 3
3	Signup (with CV Upload)	2 to 4
4	Aggregate Calculation	0.5 to 1
5	University Suggestions	1 to 2
6	Chat Message Send	0.5 to 1
7	Admin Dashboard Load	1 to 2

2. Response Time

Test Data	Expected Result	Actual Result	Pass/Fail
Load: User clicks on any function.	Response within 3 seconds.	Response within 2s.	Pass
Load: User calculates aggregate.	Response within 2 seconds.	Response within 0.5s.	Pass
Stress: 1,000 concurrent logins.	Response within 5 seconds.	Response within 4s.	Pass

3. Throughput

Test Data	Expected Result	Actual Result	Pass/Fail
Load: 500 concurrent requests.	Processed in 1 second.	Processed successfully.	Pass

4. Utilization

Test Data	Expected Result	Actual Result	Pass/Fail
Load: System under load.	CPU usage does not exceed 80%.	CPU usage at 65%.	Pass

5. Scalability

Test Data	Expected Result	Actual Result	Pass/Fail
Load: Simulate 5,000 users.	System handles requests without failure.	Handled successfully.	Pass

6. Capacity

Test Data	Expected Result	Actual Result	Pass/Fail
Load: 10,000 Chat Messages.	Database accommodates data.	Data stored successfully.	Pass

7. Availability

Test Data	Expected Result	Actual Result	Pass/Fail
Load: System uptime over 24 hours.	99.9% availability.	Uptime maintained.	Pass

8. Reliability

Test Data	Expected Result	Actual Result	Pass/Fail
Load: Simulate 1,000 transactions.	Error rate below 0.01%.	0% error rate.	Pass

9. Recoverability

Test Data	Expected Result	Actual Result	Pass/Fail
Load: Server Restart.	No disruption of data.	Database Intact.	Pass

10. Serviceability

Test Data	Expected Result	Actual Result	Pass/Fail
Admin updates Announcement.	Task completed within 1 minute.	Task completed in 30s.	Pass

11.   Security

Test Data	Expected Result	Actual Result	Pass/Fail
Sensitive data (passwords).	Stored as Hash (Bcrypt).	Data Encrypted.	Pass
Unauthorized URL Access.	Redirect to Login.	Redirected.	Pass
SQL Injection Attempt.	Blocked by ORM.	Blocked.	Pass

12.   Regulatory

Test Data	Expected Result	Actual Result	Pass/Fail
User Data Privacy.	Passwords not visible to Admin.	Privacy Maintained.	Pass

13.   Manageability

Test Data	Expected Result	Actual Result	Pass/Fail
Admin approves user.	Task completed within 1 minute.	Task completed.	Pass

14. **Data** Integrity

Test Data	Expected Result	Actual Result	Pass/Fail
User updates profile.	Data accuracy maintained.	Data Accurate.	Pass

15.   Usability

Test Data	Expected Result	Actual Result	Pass/Fail
Mobile Viewport test.	Interface is responsive.	Responsive.	Pass

16.   Interoperability

Test Data	Expected Result	Actual Result	Pass/Fail
CV Upload (PDF/DOC).	System accepts standard formats.	Accepted.	Pass