

Constraints

Email (Forgot Password Page)

1. Must contain "@" and "." (e.g., user@example.com).
2. Must have characters before "@" and after the last "..".
3. No spaces allowed.
4. Must exist in the database.
5. Email is normalized to lowercase.

OTP (Reset Password Page)

1. Must be exactly 6 digits.
2. Only numeric characters allowed (0-9).
3. Must match the OTP stored in the database.
4. Valid for only 5 minutes (300 seconds).
5. One-time use only (deleted after successful verification).

New Password (Reset Password Page)

1. Minimum length: 6 characters.
2. Cannot be the same as the current password.
3. Must match confirm password field.

Equivalence Class

1. Email Field (Forgot Password)

Class ID	Description	Type	Expected Result
E1	Valid email that exists in database	Valid	Accepted
E2	Missing the "@" symbol	Invalid	Error: "Please enter a valid email address."
E3	Missing the "." symbol	Invalid	Error: "Please enter a valid email address."
E4	Contains spaces	Invalid	Error: "Please enter a valid email address."
E5	Too short (< 5 characters)	Invalid	Error: "Please enter a valid email address."
E6	Too long (> 320 characters)	Invalid	Error: "Please enter a valid email address."

2. OTP Field (Reset Password)

Class ID	Description	Type	Expected Result
O1	Valid 6-digit OTP	Valid	OTP verified successfully.
O2	Less than 6 digits	Invalid	Error: "OTP must be 6 digits."
O3	More than 6 digits	Invalid	Input blocked (Max length 6).
O4	Contains non-numeric characters	Invalid	Input blocked (Numeric only).
O5	Correct length but wrong OTP code	Invalid	Error: "Invalid or expired OTP."
O6	Expired OTP (> 5 minutes)	Invalid	Error: "Invalid or expired OTP."

3. Set New Password Field

Class ID	Description	Type	Expected Result
P1	Valid password (\geq 6 chars)	Valid	Password reset successfully.
P2	Valid minimum length (Exactly 6 chars)	Valid	Accepted.
P3	Too short (< 6 chars)	Invalid	Error: "Password must be at least 6 characters long."
P4	Empty password	Invalid	Error: "Please fill in all fields."

Test cases

1. Forgot Password - Email Validation

Test Case ID	Input Data	Equivalence Class	Expected Result
TC01	Email: user@example.com	E1	OTP sent successfully. Navigate to reset password page after 2s.
TC02	Email: example@gmail.com	E2	Error: "Please enter a valid email address."
TC03	Email: user@examplecom	E3	Error: "Please enter a valid email address."
TC04	Email: user @example.com	E4	Error: "Please enter a valid email address."

TC05	Email: a@b.c	E5	Error: "Please enter a valid email address."
TC06	Email: a(repeated 321 times)@example.com	E6	Error: "Please enter a valid email address."
TC07	Email: <user>@example.com	E7	Error: "Please enter a valid email address."
TC08	Email: nonexistent@da <u>u.ac.in</u>	E8	Error: "No account found with this email address." (404)
TC09	Email: [Empty Field]	E9	Error/Validation: "Please fill out this field."
TC10	Email: User@Example.COM	E10	OTP sent successfully (email normalized to lowercase).

2. Reset Password - OTP Validation

Test Case ID	Input Data	Equivalence Class	Expected Result
TC14	OTP: 123456 (Correct)	O1	OTP verified successfully. Password reset allowed.
TC15	OTP: 12345 (5 digits)	O2	Error: "OTP must be 6 digits."
TC16	OTP: 1234567 (7 digits)	O3	Frontend blocks input at 6 characters (maxLength).
TC17	OTP: 12a456 (Contains letters)	O4	Frontend blocks non-numeric input.
TC18	OTP: 999999 (Wrong OTP)	O5	Error: "Invalid or expired OTP. Please request a new one."
TC19	OTP: 123456 (Expired >5 min)	O6	Error: "Invalid or expired OTP. Please request a new one."

3. Reset Password - New Password Validation

Test Case ID	Input Data (New / Confirm)	Equivalence Class	Expected Result
TC20	NewPass123 / NewPass123	P1	Password reset successfully. Navigate to login after 3s.
TC21	Pass12 / Pass12 (6 chars)	P2	Password reset successfully.
TC22	Pass1 / Pass1 (5 chars)	P3	Error: "Password must be at least 6 characters long."
TC23	[Empty] / [Empty]	P4	Error: "Please fill in all fields."
TC24	NewPass123 / NewPass456	P5	Error: "Passwords do not match."

4. Integration, Flow & Security

Test Case ID	Scenario / Input	Expected Result
TC25	Complete Flow: Valid email => Receive OTP => Enter OTP => Set new password	Success: Password reset, redirected to login.
TC26	Resend OTP: Click "Resend OTP" button	New OTP sent, old OTP invalidated.
TC27	Auto-fill: Navigate from forgot password page	Email auto-filled in reset password page.
TC28	Navigation: Click "Back" button on reset page	Returned to the forgotten password page.
TC29	UI State: Click "Send OTP"	Button shows "Sending OTP...", disabled.
TC30	SQL Injection: Email: ' OR '1'='1	Rejected by email validation.