



Formerly DA-IICT

IT314 - SOFTWARE ENGINEERING

PROJECT: FLUENTIFY

GROUP - 03

TASK: SYSTEM TESTING

(ADMIN MODULE)

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I. ANALYTICS DASHBOARD & PLATFORM ANALYTICS

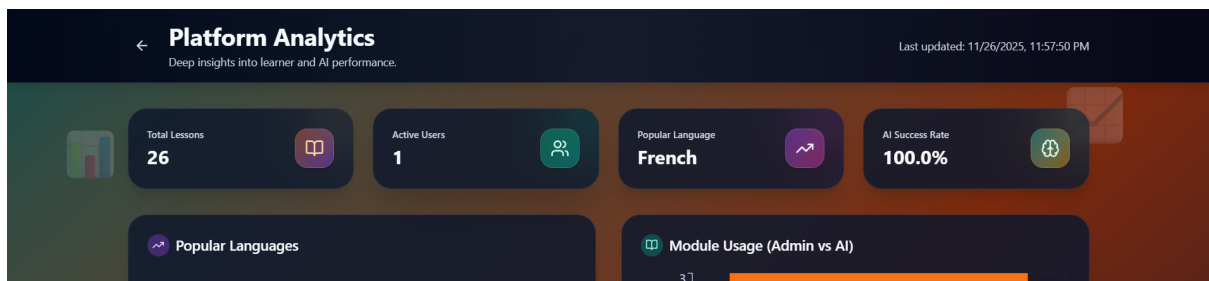
Constraints and Assumptions

- **Empty State:** When there are zero users, all analytics should show empty values.
- **Calculations:** Total number of courses = admin uploaded modules + user-generated modules.
- **Visuals:** Most popular language must correspond to the highest generated-language count.

Blackbox Testing

Boundary Testing — Total Courses

| Scenario | Input Data | Expected Output | Actual Output |
|----------------|-----------------------------------|-----------------|---------------|
| No users | 0 courses | 0 | 0 |
| Multiple users | 2 admin courses + 24 user courses | 26 | 26 |



II. USER MANAGEMENT — VIEW & EDIT ONLY

Constraints

- **View Only:** Admin may only view user data and edit username or email.
- **Email:** Must be a valid format and must be unique.
- **Username:** Cannot be empty; must respect maximum length.
- **Session:** Logout must terminate editing permissions.

Equivalence Class Partitioning

| Class | Input / State | Condition | Result |
|--------------|---------------------|----------------------------|-------------------------------------|
| E1 (Valid) | Edit username/email | Valid format | Update Saved |
| E2 (Valid) | View user data | User exists | Data displayed |
| E3 (Invalid) | Edit email | Invalid email format | Not updated; remains in edit window |
| E4 (Invalid) | Edit email | Duplicate email exists | Not updated; remains in edit window |
| E5 (Invalid) | Edit username | Empty or exceeds max limit | Not updated; remains in edit window |
| E6 (Error) | Save update | Backend error or time-out | Save fails; error message |

Boundary Value Analysis

| Scenario | Input Data | Expected Output | Actual Output | Reason |
|---------------------|---------------------------|--------------------|--------------------|----------------|
| Min Username Length | 0 characters | Save Disabled | Save Disabled | Min Boundary |
| Valid Username | 1 character | Saved Successfully | Saved Successfully | Valid Boundary |
| Max Username Length | Max allowed 50 characters | Saved Successfully | Saved Successfully | Max Boundary |
| Overflow Username | Max(50)+1 characters | Save disabled | Save disabled | Exceeds Limit |
| Valid Email | Proper email format | Saved Successfully | Saved successfully | Valid Case |
| Invalid Email | “bad email” | Save Disabled | Save Disabled | Invalid Format |
| Duplicate Email | Existing email in DB | Save disabled | Save disabled | Uniqueness R |
| Network Failure | Save during network drop | Error Message | | Error Handling |

ACCEPTANCE TESTING

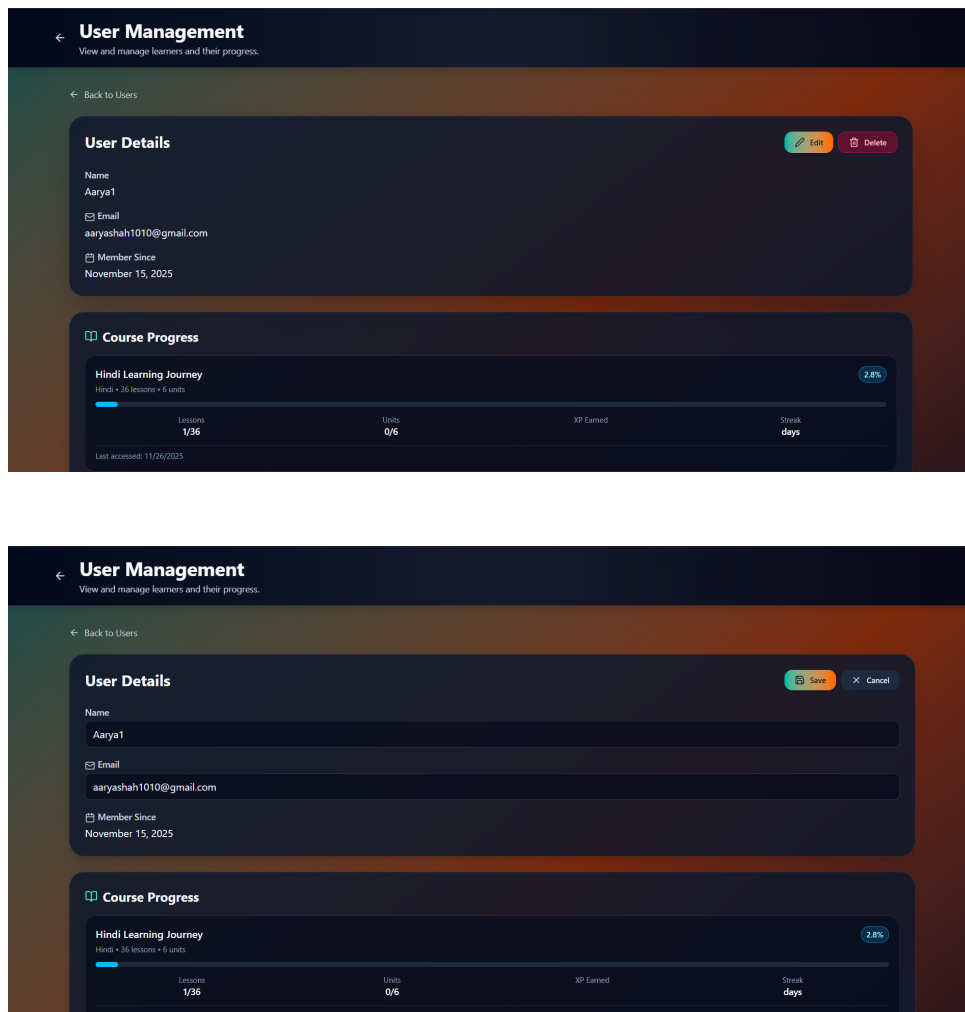


Figure 1: User Management — Edit Dialog (example)

| Test ID | Input Data | Expected Result | Actual Result | Status |
|----------|------------------------------------------|--------------------------------------------------------------------------|-------------------------------|--------|
| UM-AT-01 | Open User Management page (Admin) | Page loads; user list visible | Page loads; user list visible | Pass |
| UM-AT-02 | Click Edit on a user row (Admin) | Edit dialog opens with username & email prefilled; Save & Cancel visible | Same as expected | Pass |
| UM-AT-03 | Edit username to valid new value & Save | Successful; list shows new username; audit entry present | Same as expected | Pass |
| UM-AT-04 | Edit email to valid, unique email & Save | Successful; list shows new email; audit entry present | Same as expected | Pass |

| Test ID | Input Data | Expected Result | Actual Result | Status |
|----------|---------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|--------|
| UM-AT-05 | Edit email to invalid format (e.g., 'bad email') & Save | Save disabled | Save disabled, it doesn't change the email | Pass |
| UM-AT-06 | Edit email to an existing email (duplicate) & Save | Save disabled | Save disabled, it doesn't change the email and stays on the same page | Pass |
| UM-AT-07 | Open Edit, do NOT change values, click Save | No-op; no duplicate audit entry | Same as expected | Pass |
| UM-AT-08 | Concurrent edit: Admin A opens edit (value X), Admin B saves Y, Admin A saves Z | Conflict handled per policy; last-write-wins; audit shows both changes | Same as expected | Pass |
| UM-AT-09 | Save large username at max length and Save | Saved if within configured limit; displayed correctly (no overflow) | Same as expected | Pass |
| UM-AT-10 | Keyboard-only: Tab into Edit dialog, change email, press Enter | Saved successfully | Same as expected | Pass |

III. MODULE MANAGEMENT

CONSTRAINTS

- **Course Creation:** Admin must enter all required fields (Language, Level, Title). Optional fields include Description, Thumbnail URL, and Estimated Duration.
- **Publish Option:** Course becomes visible to learners only when “Publish this course” is selected.
- **Validation:** All required fields must be non-empty. Invalid or duplicate titles must be rejected.
- **Navigation:** “Create New Course”, “View Details”, and “Manage Courses” must redirect correctly without errors.

BLACKBOX TESTING

1) Equivalence Class Partitioning (Input & State):

| Class | Input / State | Condition | Result |
|--------------|-------------------------|----------------------------|-----------------------|
| E1 (Valid) | Create Course | All required fields valid | Course Saved |
| E2 (Valid) | Publish Course | Publish toggle ON | Visible to Learners |
| E3 (Invalid) | Missing Required Fields | Title/Language/Level empty | Save Disabled / Error |
| E4 (Invalid) | Duplicate Title | Same title + same language | Error Message |
| E5 (Invalid) | Thumbnail URL | Invalid URL format | Error Message |
| E6 (Invalid) | Duration | Non-readable duration | Error Message |
| E7 (Error) | Save Request | Backend failure | Save Fails / Error |

2) Boundary Value Analysis (Course Fields):

| Scenario | Input Data | Exp. Output | Act. Output | Reason |
|------------------|-----------------------|-----------------------------|--------------------|----------------------|
| Min Title Length | 0 Characters | Save disabled/Error message | Same as expected | Min Boundary |
| Valid Title | 1 Character | Saved | Saved successfully | Valid Boundary |
| Max Title Length | Max allowed (255) | Saved | Saved successfully | Max Boundary |
| Overflow Title | Max+1 Characters | Save disabled/Error message | Same as expected | Exceeds Limit |
| Valid URL | Proper http/https URL | Saved | Saved | Valid Case |
| Invalid URL | “abc”, “123” | Save disabled | Saved nonetheless | Error not yet solved |
| Valid Duration | “3 months”, “6 weeks” | Saved | Saved successfully | Valid Case |
| Invalid Duration | “, “unknown-text” | Error Message | Error message | Invalid Format |
| Publish OFF | Toggle unchecked | Saved as Draft | Saved as Draft | Valid State |
| Publish ON | Toggle checked | Saved as Published | Saved as Published | Valid State |

ACCEPTANCE TESTING

Create and manage language courses, units, and lessons.

← **Create New Course**
Fill in the course details

Course Information

Language *
e.g., Spanish, French

Level *
Select Level

Course Title *
e.g., Spanish for Beginners

Description
Describe what students will learn in this course...

Thumbnail URL
https://example.com/image.jpg

Estimated Duration
e.g., 3 months, 6 weeks

☐ Publish this course (make it visible to learners)

Save Course

Figure 2: Module Management Interface

| Test ID | Input Data | Expected Result | Actual Result | Status |
|----------|--------------------------------|----------------------------------|----------------------------------------------|--------|
| MM-AT-01 | Open Module Management page | Page loads; course cards visible | Same as Expected | Pass |
| MM-AT-02 | Click “Create New Course” | Empty creation form appears | Same as expected | Pass |
| MM-AT-03 | Enter valid course details | Course saved; list updated | Saved successfully | Pass |
| MM-AT-04 | Missing required fields | Error | Error message displayed/Not saved | Pass |
| MM-AT-05 | Invalid Thumbnail URL | Error; Not saved | Error message | Pass |
| MM-AT-06 | Publish OFF | Saved as Draft | Saved and not published | Pass |
| MM-AT-07 | Publish ON | Saved as Published | Saved and published on the user side | Pass |
| MM-AT-08 | Invalid Duration | Error shown | Error | Pass |
| MM-AT-09 | Click Manage courses and edit | Course details shown | Course details shown accurately and editable | Pass |
| MM-AT-10 | Max title length | Saved successfully | Saved successfully | Pass |
| MM-AT-11 | Exceed max title length | Save blocked | Not saved and error message shown | Pass |
| MM-AT-12 | Go back while on creation page | No course saved | No course saved | Pass |

IV. CONTEST CREATION

CONSTRAINTS

- **Required Fields:** Contest Title, Start Date & Time, End Date & Time. At least one question (with two options) required to publish.
- **Date Constraints:** Start Date must be before End Date; dates must be in valid format and generally future-dated for creation.
- **Questions:** Each question requires question text and at least two options; exactly one option must be marked correct for single-answer MCQ.
- **Save vs Publish:** ‘Create Contest’/‘Save’ Changes stores draft; ‘Publish Contest’ makes contest visible to learners during scheduled time.

- **Validation:** Title cannot be empty or exceed max length (255 chars). Options cannot be empty. Duplicate questions flagged.
- **Navigation:** Back arrow/cancel should not create partial contests.

BLACKBOX TESTING

1) Equivalence Class Partitioning (Input & State):

| Class | Input / State | Condition | Result |
|--------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| E1 (Valid) | Create Contest | Title with valid Start and End dates and at least one question containing two or more options with one correct answer selected | Contest created as draft |
| E2 (Valid) | Publish Contest | Contest saved and schedule valid | Contest becomes Published and visible to learners |
| E3 (Invalid) | Missing Required Fields | Title missing or Start/End date missing | Save blocked; inline error shown |
| E4 (Invalid) | Invalid Dates | Start date is greater than or equal to End date, or the date format is invalid | Validation error; save blocked |
| E5 (Invalid) | Insufficient Options | A question has fewer than two options | Question invalid; save blocked |
| E6 (Invalid) | No Correct Option | No option is marked as the correct answer | Question invalid; save blocked |
| E7 (Invalid) | Duplicate Questions | Two or more questions contain identical text | Warning shown or duplicate rejected |
| E8 (Edge) | Excess Length Title | Title exceeds the maximum allowed length | Title truncated or error shown; save blocked |

2) Boundary Value Analysis (Contest Fields):

| Scenario | Input Data | Exp. Output | Act. Output | Reason |
|------------------------|---------------------------|--------------------------------|----------------------------------------------------------------|-----------------------|
| Min Title Length | 0 characters | Not saved, error line | Shows error line "title required" and does not proceed further | Min Boundary |
| Valid Title | 1 character | Saved | Saved as a valid contest | Valid Boundary |
| Max Title Length | Max allowed (255) | Saved | Saved successfully | Max Boundary |
| Overflow Title | Max+1 characters | Error / reject save | Error msg pops up | Exceeds Limit |
| Valid Start/End | Start < End (future) | Saved | Saved | Valid date condition |
| Start == End | Start == End | Error (invalid range) | Error line displayed | Boundary equality |
| Start greater than End | Start greater than End | Error | Error line displayed | Invalid date range |
| Min Questions | 1 question with 2 options | Saved | Saved successfully | Min requirement |
| Less than Min Options | 1 option only | Question invalid; save blocked | Error message pops up; save blocked | Option count boundary |
| Missing Correct Option | No radio selected | Question invalid | Error message pops up; save blocked | Business rule |

ACCEPTANCE TESTING

The screenshot displays a 'Contest Creation Form' with the following sections:

- Contest Details**
 - Contest Title ***: A text input field containing 'hgscdfiww'.
 - Description (Optional)**: A text area with the placeholder 'Brief description of the contest...'.
 - Start Date & Time ***: A date-time picker showing '28-11-2025 03:02'.
 - End Date & Time ***: A date-time picker showing '29-11-2025 03:02'.
 - Save Changes**: A button with a save icon.
- Questions (1)**
 - 1. Cypress temporary question?**: A question with two options:
 - A. Option 1 ✓**: Selected, indicated by a green bar and a checkmark.
 - B. Option 2**: Not selected.

Figure 3: Contest Creation Form

| Test ID | Input Data | Expected Result | Actual Result | Status |
|----------|-------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------|--------|
| CT-AT-01 | Open Contest Management page | Page loads; contest cards visible; Create Contest button visible | Same as expected | Pass |
| CT-AT-02 | Click "Create Contest" | Contest creation form opens with empty required fields | Contest creation form opens successfully | Pass |
| CT-AT-03 | Save valid contest (Title, valid start and end) | Contest saved as draft | Saved successfully | Pass |
| CT-AT-04 | Missing Title | Save blocked, inline "Title required" error | Inline error shown, save blocked | Pass |
| CT-AT-05 | Start is greater than End | Validation error "End must be after Start"; save blocked | Same as expected | Pass |
| CT-AT-06 | Add question with 1 option only | Add blocked; shows "At least 2 options required" | Same as expected | Pass |
| CT-AT-07 | Add question with no correct option | Save blocked; inline error | Same as expected | Pass |
| CT-AT-08 | Publish valid contest | Contest status = Published; visible to learners in scheduled time | Same as expected | Pass |
| CT-AT-09 | Publish with Start in past | Publish if end in future; or validation error | Published if the end time is in future or else error message | Pass |
| CT-AT-10 | Cancel/back during creation | No contest created | No contest created or the unsaved changes discarded | Pass |
| CT-AT-11 | Title at max length | Save succeeds; title preserved | Same as expected | Pass |
| CT-AT-12 | Title exceeding max length | Error | Error message pops up | Pass |
| CT-AT-13 | Add 5 questions and save | Contest saved with 5 questions; UI lists them | Same as expected | Pass |

V. PROFILE PAGE

CONSTRAINTS

- **Editable Fields:** Only the Full Name field is editable.
- **Non-editable Fields:** Email Address, Member Since date, and Email Verification status cannot be edited.
- **Validation:** Full Name must be non-empty, must not exceed the maximum length and must not have invalid characters.
- **Save Behavior:** Changes to Full Name must persist immediately and display consistently across the admin interface.
- **Navigation:** Navigating away without clicking Save must discard any unsaved name changes.

BLACKBOX TESTING

1) Equivalence Class Partitioning (Input & State):

| Class | Input / State | Condition | Result |
|-----------------------|----------------------------------------------|------------------------------------|-----------------------------------|
| E1 (Valid) | Edit Full Name | Full Name is within limit | Full Name updated successfully |
| E2 (Valid) | View Profile Page | All details displayed correctly | Profile details visible correctly |
| E3 (Invalid) | Empty Full Name | Full Name cannot be empty | Save blocked; in-line error |
| E4 (Invalid) | Full Name exceeds maximum length (50 char) | Name too long | Error shown; save blocked |
| E5 (Invalid) | Full Name contains invalid characters | Special symbols not allowed | Validation error; save blocked |
| E6 (Invalid) | Attempt to edit Email or Member Since fields | Fields are locked and non-editable | Input disabled |
| E7 (Valid Navigation) | Navigate away without saving | Leave page without clicking Save | No changes saved |

2) Boundary Value Analysis (Full Name Field):

| Scenario | Input Data | Exp. Output | Act. Output | Reason |
|--------------------|----------------------------|----------------------------|----------------------------|--------------------|
| Min Length | 0 characters | Save blocked; inline error | Inline error; save blocked | Min Boundary |
| Valid Min | 2 character | Save successful | Save successful | Valid Boundary |
| Max Length | 50 characters | Save successful | Save successful | Max Boundary |
| Overflow | maximum + 1 character | Save blocked; error shown | Save blocked; inline error | Exceeds Limit |
| Invalid Characters | @#123* etc. | Error shown | inline error | Input validation |
| Normal Name | Yug Patel | Save successful | Save successful | Typical Valid Case |
| Unsaved Navigation | Navigate away after change | No changes saved | No changes made | Data consistency |

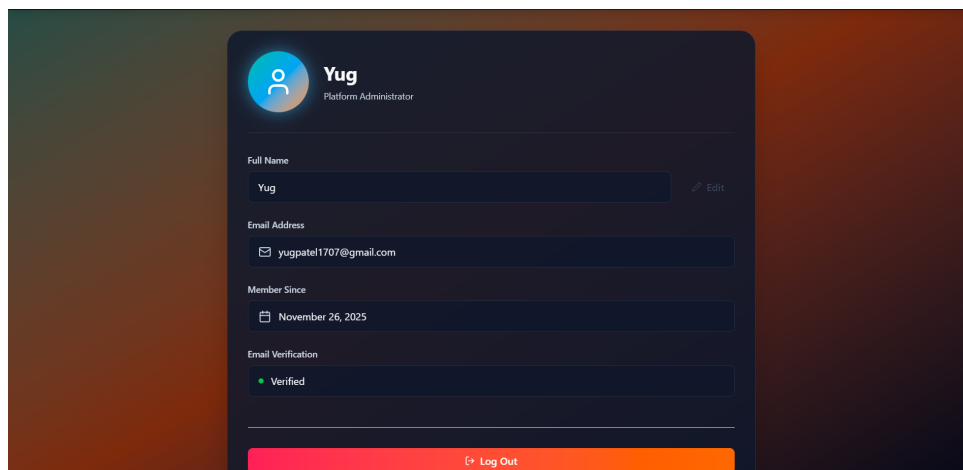


Figure 4: Admin profile page

ACCEPTANCE TESTING

| Test ID | Input Data | Expected Result | Actual Result | Status |
|----------|---------------------------------|------------------------------------------------------|------------------|--------|
| PF-AT-01 | Open Profile Page | Full Name, Email, Member Since, Verification visible | Same as expected | Pass |
| PF-AT-02 | Edit Full Name with valid value | Name updated and persists after refresh | Same as expected | Pass |

| Test ID | Input Data | Expected Result | Actual Result | Status |
|----------|-----------------------------------------|-----------------------------------------|----------------------------|--------|
| PF-AT-03 | Save with empty Full Name | Inline error; save blocked | Same as expected | Pass |
| PF-AT-04 | Full Name exceeding maximum length (50) | Error; save blocked | Inline error; save blocked | Pass |
| PF-AT-05 | Invalid characters in Full Name | Error shown; cannot save | Inline error; save blocked | Pass |
| PF-AT-06 | Attempt to edit Email or Member Since | Fields locked; no edit possible | Input disabled | Pass |
| PF-AT-07 | Navigate away without saving | No changes saved | Same as expected | Pass |
| PF-AT-08 | Refresh after save | Updated name persists after page reload | Updates persist | Pass |