Dhirubhai Ambani University Technology

Formerly DA-IICT

IT314 - Software Engineering
Group - 20

KRUSHISETU
PATH TO PROSPERITY

Assignment by :
Prof. Saurabh Tiwari

Group Members :

Student ID	Name
202301205	Jainil Patel
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202301226	Priyanshi Gothi
202301255	Rudra Desai
202301207	Tarang Hirapara
202301208	Harshil Vasava
202301238	Jeel Prajapati
202301245	Ishan Thakkar
202301241	Jal Khunt
202301206	Meet Patel
202301248	Farzan Bhalara

Github Repository Link: KrushiSetu

Users:

1. Farmer
2. Officer
3. Subsidy Provider
4. System Administrator

Stakeholders:

1. Farmer
2. Officer
3. Bank
4. Subsidy Provider
5. System Developers
6. System Administrator
7. Government Department

Functional Requirements:

Google Form Responses : spreadsheet

Interview questions : document

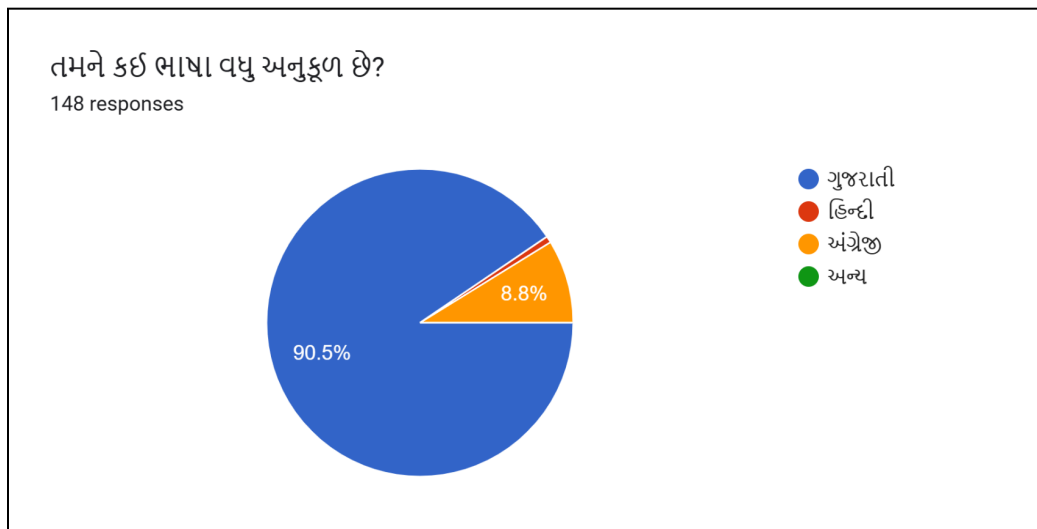1. **User Management**
   i. Users shall be able to register and log in securely.

   Online video KYC and complete process should be online even khedut registation also

   - Elicitation Technique: Questionnaire - Google Form

   ii. The system shall provide multi-language support.

   તમને કઈ ભાષા વધુ અનુકૂળ છે?
   148 responses

   ● ગુજરાતી
   ● હિન્દી
   ● અંગ્રેજી
   ● અન્ય

   90.5%   8.8%

   - Question: Which language are you comfortable with ?
     ○ Responses show that farmers are more comfortable with their local language.
   - Elicitation Technique: Questionnaire, applied through Google Form.

   iii. The system shall provide an integrated AI ChatBot to assist users with common queries and grievance-related issues.

   Form Bharti vakhate avti muskeli ma tarat javab mali jay

   - Farmers want instant support while applying for the subsidy.
   - Elicitation Technique: Questionnaire - Google Form

   iv. The system shall let the admin assign roles to users.
   - Elicitation technique: Brainstorming

    v.   The system shall let the admin create and deactivate user accounts.
- Elicitation technique: Brainstorming
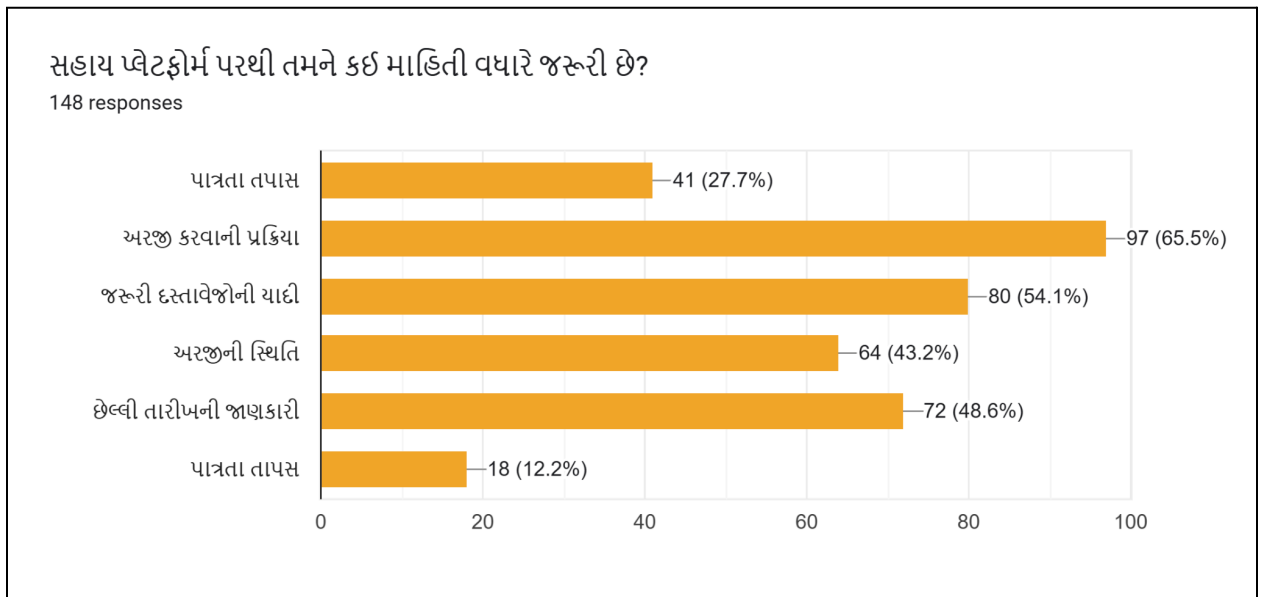
2. Subsidy Scheme Management

    i.   Subsidy providers shall be able to create and publish new subsidy schemes.
- Elicitation technique: Brainstorming

    ii.   Subsidy providers shall be able to update or close existing schemes.
- Elicitation technique: Brainstorming

    iii.   Subsidy providers shall be able to monitor applications received under their schemes.
- Elicitation technique: Brainstorming

    iv.   Subsidy providers shall be able to view reports/analytics of subsidy distribution.
- Elicitation technique: Brainstorming

    v.   Subsidy providers shall be able to communicate important updates (via News/Blogs/Notices).
- Elicitation technique: Brainstorming

    vi.   System admin shall be able to generate and download reports with filters.
- Elicitation technique: Brainstorming

3. Subsidy Discovery

    i.   Users shall be able to search and browse available subsidy schemes.
- Elicitation technique: Brainstorming

    ii.   The system shall provide filters and comparison features to help users compare multiple subsidies.

શું તમે બે અથવા વધુ સહાય યોજનાઓ વચ્ચે તુલના કરવાની સુવિધા ઇચ્છો છો?
148 responses

● હા
● ના

18.2%
81.8%
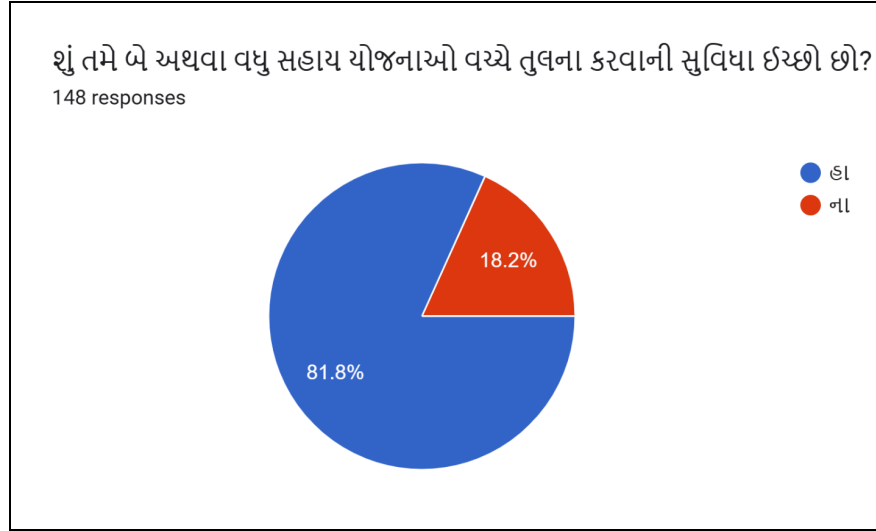
- Question: Do you want a feature to compare two or more subsidies?
  - 81% votes for Yes.
- Elicitation Technique: Questionnaires, applied through Google Form.

iii. The system shall allow users to check their eligibility for a specific subsidy scheme.

સહાય પ્લેટફોર્મ પરથી તમને કઇ માહિતી વધારે જરૂરી છે?
148 responses

પાત્રતા તપાસ — 41 (27.7%)
અરજી કરવાની પ્રક્રિયા — 97 (65.5%)
જરૂરી દસ્તાવેજોની યાદી — 80 (54.1%)
અરજીની સ્થિતિ — 64 (43.2%)
છેલ્લી તારીખની જાણકારી — 72 (48.6%)
પાત્રતા તાપસ — 18 (12.2%)

- Question: Which features or information should be considered important for the platform?
  - Check Eligibility: 28% votes

- Elicitation Technique: Questionnaires, applied through Google Form.

4. Subsidy Application
i. Users shall be able to apply for subsidies online by submitting required details and documents online only once.

શું તમે ફોનમાંથી દસ્તાવેજો અપલોડ કરવા ઇચ્છો છો?
148 responses

- હા
- ના

12.2%

87.8%
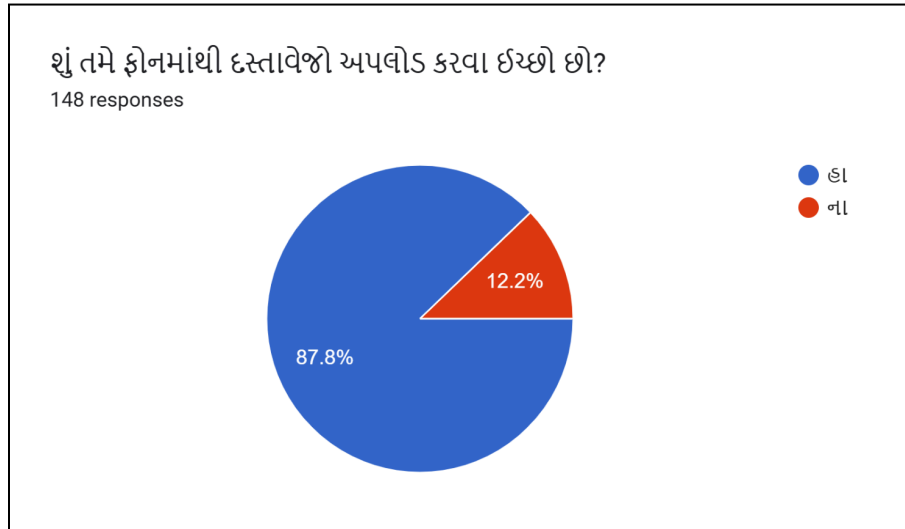
વારંવાર દસ્તાવેજ અપલોડ ના કરવા પડે એવું કઈ ઓપ્શન

- Suggested by a farmer through Google Form.

ii. The system shall allow officers to verify submitted documents.
- Elicitation Technique: Observation - Watching how the document verification is done in some government services applications.

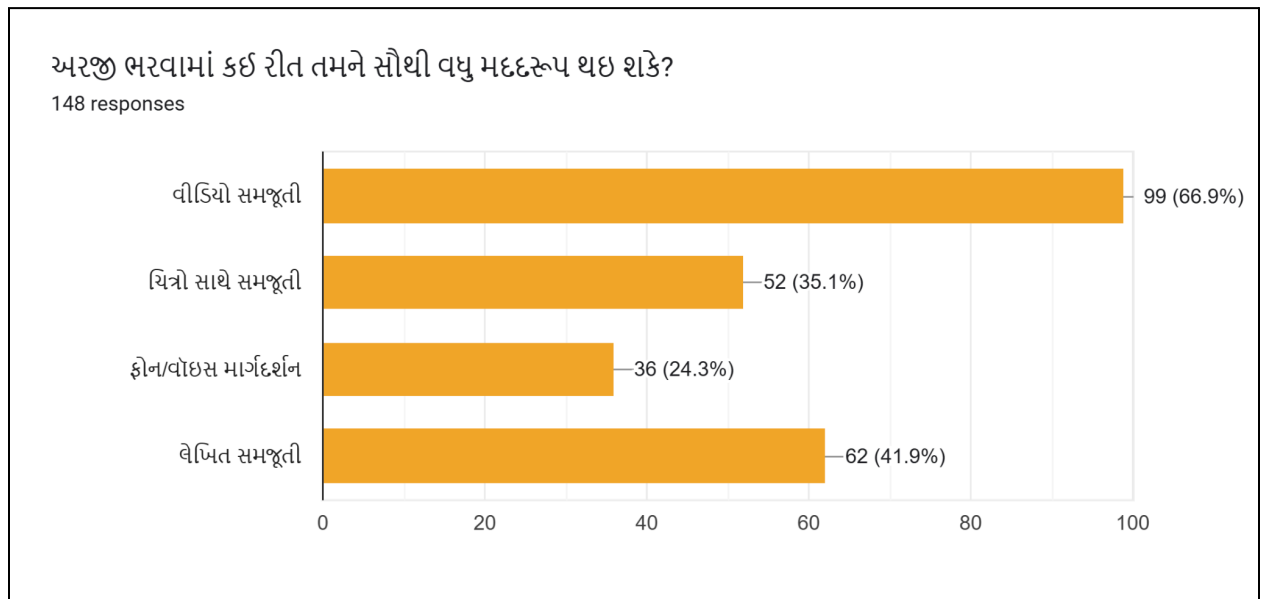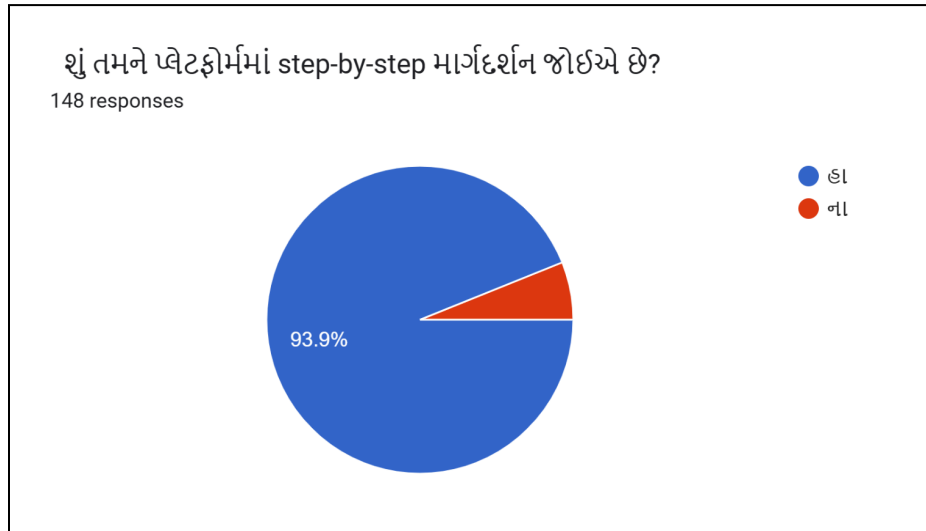iii. Users shall be able to track the real-time status of their subsidy applications.

Manual process ના કારણે અરજી કરવાની પ્રક્રિયા,દાતાવેજોની જરૂરિયાત વિગેરે ની અધૂરી માહિતી તેમજ અરજીનું સ્ટેટસ જાણી ન શકવાના કારણે ખેડૂતને પારાવાર મુશ્કેલી પડે છે

- Suggested by a farmer through Google Form.

5. User Engagement & Support
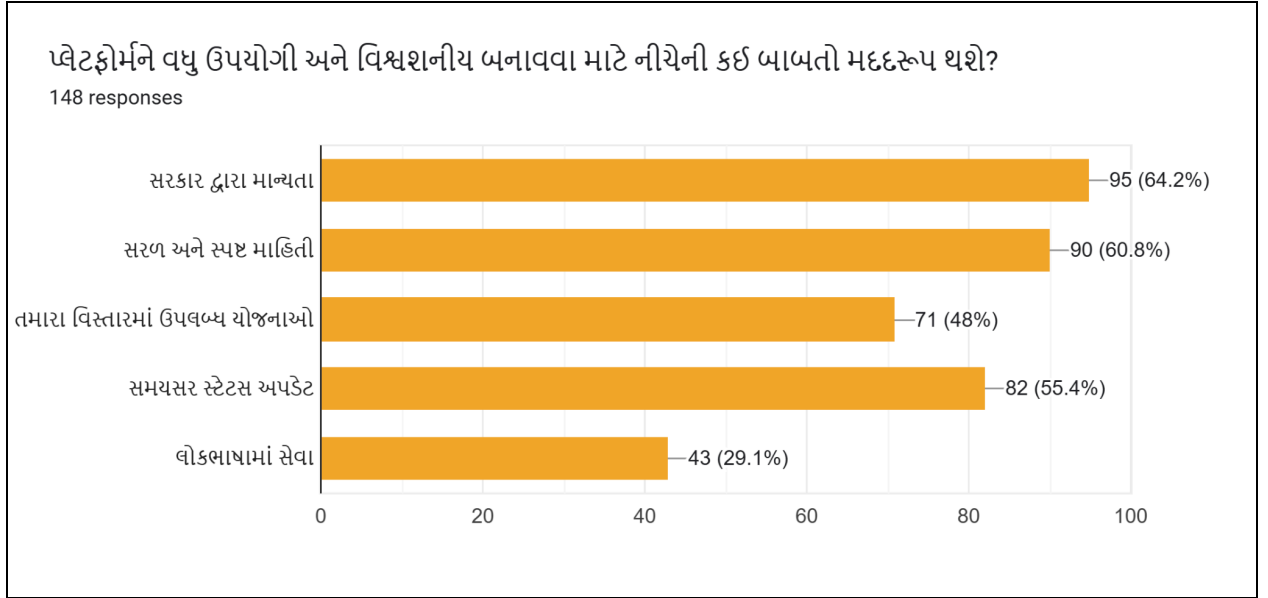i. Users shall be able to review and rate subsidy schemes.
- Elicitation Technique: Brainstorming

ii. The system shall include an FAQ section for common queries.
- Observation: Usually the FAQ section is very useful.

iii.   The system shall provide tutorials and guidance for new users.

શું તમને પ્લેટફોર્મમાં step-by-step માર્ગદર્શન જોઇએ છે?
148 responses

- હા
- ના

93.9%

અરજી ભરવામાં કઈ રીત તમને સૌથી વધુ મદદરૂપ થઇ શકે?
148 responses

વીડિયો સમજૂતી	99 (66.9%)
ચિત્રો સાથે સમજૂતી	52 (35.1%)
ફોન/વોઇસ માર્ગદર્શન	36 (24.3%)
લેખિત સમજૂતી	62 (41.9%)

- Question: Which features or information should be considered important for the platform?
  - Video Explanation: 67% votes
- Elicitation Technique: Questionnaires, applied through Google Form.

iv.   Users shall be able to raise complaints or grievances, which will be tracked until resolution.

- Brainstorming

v.   The system shall send notifications/alerts regarding application updates, approvals, and payments.

પ્લેટફોર્મને વધુ ઉપયોગી અને વિશ્વશનીય બનાવવા માટે નીચેની કઇ બાબતો મદદરૂપ થશે?
148 responses

સરકાર દ્વારા માન્યતા	95 (64.2%)
સરળ અને સ્પષ્ટ માહિતી	90 (60.8%)
તમારા વિસ્તારમાં ઉપલબ્ધ યોજનાઓ	71 (48%)
સમયસર સ્ટેટસ અપડેટ	82 (55.4%)
લોકભાષામાં સેવા	43 (29.1%)

- Question: What can make the platform more useful and reliable?
  - Regular status update: 55% votes
- Elicitation Technique: Questionnaires, applied through Google Form.

vi. The system shall provide a dashboard for monitoring applications, approvals, and disbursements.

ખેડૂતને મળેલ સબ્સીડીનો રેકોર્ડ ખેડૂત પોતે જોઇ શકે

- Suggested by a farmer through Google Form.

vii. The system shall include a News & Blogs section to display the latest updates.

માહિતીના અભાવે સરકારી સહાય જલ્દી મળતી નથી.

- Suggested by a farmer through Google Form.

Non-Functional Requirements:

1. **Availability**
   - The system should be accessible 24x7.
   - | Website not working |
   - Elicitation Technique: Questionnaires, Interview with Officer (Gram Sevak)

2. **Accessibility**
   - The platform should support multiple languages (English, Hindi, Gujarati, etc.).
   - Mobile-friendly design so that rural farmers can access it easily.
   - Elicitation Technique: Questionnaires

   તમને કઈ ભાષા વધુ અનુકૂળ છે?
   149 responses

   - 🔵 ગુજરાતી
   - 🔴 હિન્દી
   - 🟠 અંગ્રેજી
   - 🟢 અન્ય

   90.6%   8.7%
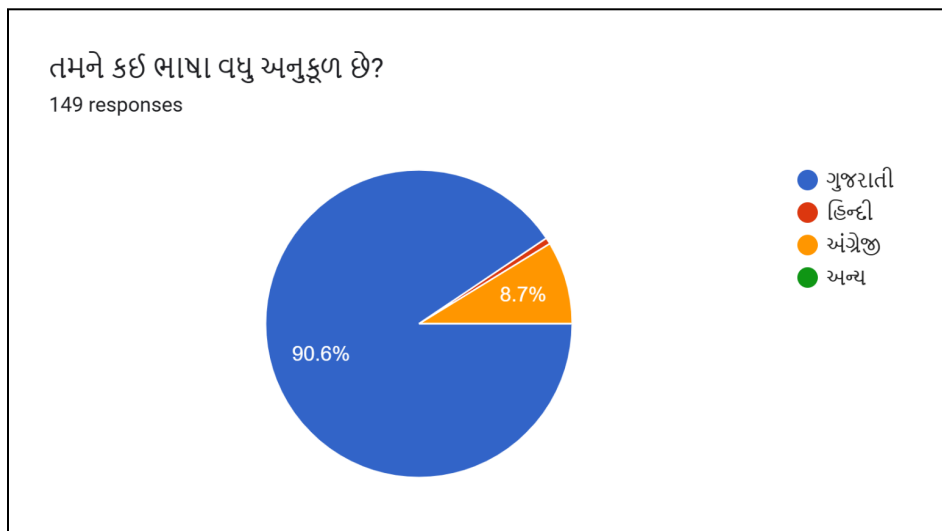
3. **Performance**
   - Average response time should be less than 3 seconds for common operations.
   - | Server issue |
   - Elicitation Technique: Questionnaires

4. **Reliability**
   - No data loss or corruption should occur.
   - Transactions (e.g., subsidy application, approval) must always complete consistently.

- Backup and recovery mechanisms must be available to restore data after failures.
- Elicitation Technique: Brain Storming

5. Usability

- Easy-to-use interface for farmers, officers, and admins.
- Simple navigation, step-by-step forms, and instructions in local languages.

ખેડૂત પોર્ટલ મા અરજી કરવાની સરળ રીત

- Elicitation Technique: Questionnaire

6. Scalability

- The system should handle an increasing number of farmers in the future without performance issues.
- Elicitation technique: Brain Storming

7. Security

- Role-based access control (Farmer, Officer, Admin with different permissions).
- Sensitive data (Aadhaar, bank details) must be encrypted during storage and transmission.
- Elicitation technique: Brain Storming

User Stories:

User: Farmer

1. User Registration

Front of Card:
- As a farmer, I want to register using my Email and mobile number so that I can securely access subsidy services.

Back of Card:
- **Given** I am a new user
  When I navigate to the registration page and provide my details
  Then my account should be created successfully.

We have identified this user story from **FR 1(i).**

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2. User Login

Front of Card:
- As a farmer, I want to login to my account so that I can access subsidy services.

Back of Card:
- **Given** I am an existing user
  When I enter my correct credentials on the login page
  Then I am granted access to my personalized dashboard.

We have identified this user story from **FR 1(i).**

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3. Search Subsidy Schemes

Front of Card:
- As a farmer, I want to search for available subsidy schemes so that I can quickly find relevant opportunities.

Back of Card:
- **Given** I am on the subsidy search page
  When I type a keyword or apply filters
  Then I should see all matching schemes instantly.

We have identified this user story from **FR 3(i).**

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4. Check Eligibility

Front of Card:
- As a farmer, I want to check my subsidy eligibility so that I don't waste time applying for ineligible schemes.

Back of Card:
- **Given** I provide my land size, income, and crop details
  When I click on "Check Eligibility"
  Then I should see a result showing if I qualify and why.

We have identified this user story from **FR 3(iii).**

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5. Apply for Subsidy

Front of Card:
- As a farmer, I want to apply for subsidies online so that I can avoid visiting government offices.

Back of Card:
- **Given** I am authenticated
  When I complete and submit the subsidy form
  Then I should get a confirmation and application ID.

We have identified this user story from **FR 4(i).**

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6. Upload Documents

Front of Card:
- As a farmer, I want to upload required documents online so that officers can verify them digitally.

Back of Card:
- **Given** I am applying for a subsidy
  When I upload PDF/JPG files
  Then the system should accept and save them securely.

We have identified this user story from **FR 3(i).**

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7. Track Application Status

Front of Card:
- As a farmer, I want to track my subsidy application status so that I know if my request is progressing.

Back of Card:
- **Given** I have submitted an application
  When I check the status page
  Then I should see the current step (Submitted → Verified → Approved → Paid).
- **Given** my status changes
  When an officer updates it
  Then I should receive an SMS/email notification.

We have identified this user story from **FR 4(iii).**

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8. Tutorials & Guidance

Front of Card:
- As a farmer, I want tutorials and guidance in my local language so that I can learn how to use the portal.

Back of Card:

- **Given** I am a first-time user
  When I visit the tutorial section
  Then I should see videos and text guides in multiple languages.

We have identified this user story from **FR 5(iii).**

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9. Raise Grievance

Front of Card:

- As a farmer, I want to raise complaints online so that my issues can be tracked and resolved.

Back of Card:

- **Given** I face a problem with my application
  When I submit a grievance
  Then I should receive a tracking ID and acknowledgement.

We have identified this user story from **FR 5(iv).**

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10. Multi-Language Support

Front of Card:

- As a farmer, I want the portal in my local language so that I can navigate without confusion.

Back of Card:

- **Given** I select a language
  When I navigate through pages
  Then all text should update to that language instantly.

We have identified this user story from **FR 1(ii) & NFR 2.**

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11. Compare Subsidies

Front of Card:
- As a farmer, I want to compare schemes side by side so that I can choose the most beneficial one.

Back of Card:
- **Given** I select multiple schemes
  When I click "Compare"
  Then I should see a side-by-side table of benefits and conditions.

We have identified this user story from **FR 3(iv).**

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12. Review and rate subsidy schemes

Front of Card:
- As a farmer, I want to review and rate subsidy schemes so that others can benefit from my feedback.

Back of Card:
- **Given** I have availed or explored a scheme
  When I submit a review or rating
  Then it should be visible to other farmers and stored in the system.

We have identified this user story from **FR 5(i).**

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13. FAQ section for common queries

Front of Card:
- As a farmer, I want an FAQ section so that I can quickly resolve common doubts.

Back of Card:
- **Given** I navigate to the FAQ section
  When I search or browse questions
  Then I should see clear answers in my selected language.

We have identified this user story from **FR 5(ii).**

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14. Dashboard

Front of Card:
- As a farmer, I want a dashboard showing my applications, approvals, and payments so that I can track everything in one place.

Back of Card:
- **Given** I am logged in as a farmer
  When I open my dashboard
  Then I should see my submitted applications, their current status, and payment details in a clear summary.

We have identified this user story from **FR 5(vii).**

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15. News & Blogs section

Front of Card:
- As a farmer, I want to read news and blogs related to subsidies so that I can stay updated with new schemes and government policies.

Back of Card:
- **Given** I open the News & Blogs section
  When I view recent posts
  Then I should see relevant updates in my selected language.

We have identified this user story from **FR 5(viii).**

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16. ChatBot

Front of Card:
- As a user, I want to interact with a chatbot so that I can quickly get help with my queries.

Back of Card:
- **Given** I open the chatbot on the portal

When I ask a question
Then the chatbot should guide me with relevant information or next steps
And allow me to escalate to a human officer if needed.

We have identified this user story from **FR 1(iii).**

User: Subsidy Provider

17. Publish New Subsidy Scheme

Front of Card:
- As a subsidy provider, I want to create and publish subsidy schemes so that farmers can access them online.

Back of Card:
- **Given** I am logged in as a provider
  When I enter scheme details (name, eligibility, benefits, documents required)
  Then the system should save and publish the scheme on the portal.

We have identified this user story from **FR 2(i).**

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18. Update or Close Subsidy Scheme

Front of Card:
- As a subsidy provider, I want to update or close a scheme so that farmers always see the latest and valid information.

Back of Card:
- **Given** a scheme exists
  When I modify its details or mark it as closed
  Then the updated information should reflect immediately on the farmer portal.

We have identified this user story from **FR 2(ii).**

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19. Monitor Applications on My Schemes

Front of Card:

- As a subsidy provider, I want to monitor farmer applications under my schemes so that I can track participation.

Back of Card:

- **Given** I have published schemes
  When I view the applications dashboard
  Then I should see the number of applicants, their status, and region-wise data.

We have identified this user story from **FR 2(iii).**

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20. View Reports & Analytics

Front of Card:

- As a subsidy provider, I want reports on subsidy disbursement so that I can evaluate scheme performance.

Back of Card:

- **Given** I select filters (scheme, timeline, region)
  When I generate a report
  Then I should get visual analytics and a downloadable Excel/PDF.

We have identified this user story from **FR 2(iv).**

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21. Post Updates & Notices

Front of Card:

- As a subsidy provider, I want to publish news or notices so that farmers and officers stay updated with important information.

Back of Card:

- **Given** I write a news/blog entry
  When I publish it

Then it should appear in the News & Blogs section for farmers and officers.

We have identified this user story from **FR 2(v).**

User: Officer

22. Officer Dashboard

Front of Card:
- As an officer, I want a dashboard showing pending applications so that I can process them efficiently.

Back of Card:
- **Given** I am an authorized officer
  When I log in
  Then I should see all pending applications assigned to me.

We have identified this user story from **FR 4(ii).**

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23. Application Verification

Front of Card:
- As an officer, I want to verify documents digitally so that I can approve or reject applications quickly.

Back of Card:
- **Given** I view an application
  When I check its documents
  Then I should be able to mark it as Approved, Rejected, or Needs Correction.

We have identified this user story from **FR 4(ii).**

User: System Administrator

24. Reports and Analytics:

Front of Card:
- As an admin, I want to generate reports so that I can monitor subsidy disbursement performance.

Back of Card:
- **Given** I select filters (scheme, date, region)
When I generate a report
Then the system should produce a downloadable Excel/PDF.

We have identified this user story from **FR 2(vi).**

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25. User Account Management

Front of Card:
- As an admin, I want to create and deactivate user accounts so that only authorized users can access the system.

Back of Card:
- **Given** I provide user details (name, role, email, userID)
When I save the record
Then the system should create a new account with default credentials. And if I deactivate an account, the user should no longer be able to log in.

We have identified this user story from **FR 1(v).**

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26. Role Assignment

Front of Card:
- As an admin, I want to assign roles and permissions so that users can only access features relevant to them.

Back of Card:
- **Given** I select a user
  When I assign a role (officer, farmer, provider)
  Then the system should restrict access according to that role.

We have identified this user story from **FR 1(iv).**

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27. Grievance Resolution

Front of Card:
- As an admin, I want to resolve grievances so that users get timely responses to their issues.

Back of Card:
- **Given** a grievance is assigned to me
  When I take action on it
  Then the system should mark it as resolved
  And notify the user.

We have identified this user story from **FR 5(iv).**

EPICs:

EPIC 1: User Management

- Covers: Registration, Login, Role-based access, Multi-language support.

  ### User Stories:
  - Farmer Registration
  - Farmer Login
  - Admin: User Account Management
  - Admin: Role Assignment

  To be delivered in **sprint-1.**

EPIC 2: Subsidy Scheme Management

- Covers: Creation, publishing, updating, monitoring, analytics, notices.

  ### User Stories:
  - Provider: Publish New Subsidy Scheme
  - Provider: Update/Close Subsidy Scheme
  - Provider: Monitor Applications
  - Provider: Post Updates & Notices

  To be delivered in **sprint-2.**

EPIC 3: Subsidy Discovery

- Covers: Farmers searching, filtering, comparing, and checking eligibility.

  ### User Stories:
  - Farmer: Search Subsidy Schemes
  - Farmer: Compare Subsidies
  - Farmer: Check Eligibility

  To be delivered in **sprint-3.**

EPIC 4: Subsidy Application

- Covers: Applying, uploading docs, verification, tracking.

  User Stories:
    - Farmer: Apply for Subsidy
    - Farmer: Upload Documents
    - Farmer: Track Application Status
    - Officer: Dashboard (Pending Applications)
    - Officer: Application Verification

  To be delivered in **sprint-4.**

EPIC 5: User Engagement & Support

- Covers: Reviews, FAQs, Tutorials, Grievances, Notifications, News/Blogs.

  User Stories:
    - Farmer: Review and Rate Subsidy Schemes
    - Farmer: FAQ Section
    - Farmer: Tutorials & Guidance
    - Farmer: Raise Grievance
    - Farmer: Dashboard (Applications, Approvals, Payments)
    - Farmer: News & Blogs Section
    - Farmer: AI ChatBot
    - Admin: Grievance Resolution

  To be delivered in **sprint- 5 & 6**.

EPIC 6: System Administration & Analytics

- Covers: Monitoring, reports, grievance escalation.

  User Stories:
    - Admin: Reports & Analytics
    - Provider: View Reports & Analytics
    - Farmer: Multi-language Support

  To be delivered in **sprint-7.**

Sprints:

Sprint 1

Expected Duration: (Sept 7 – Sept 21, 2025)
Goal: Get the basics ready so users can sign up, log in, and see the home page.

Deliverables:

- Documentation: Users, Stakeholders, Elicitation Techniques, Functional and Non-Functional Requirements, Use Case Diagram, User Stories, EPICs, Sprints.

- Features:
    - User Registration (Sign-Up)
    - User Login
    - Home Page

Sprint 2

Expected Duration: (Sept 21 – Oct 05, 2025)
Goal: Enable subsidy providers to publish and manage schemes.

Deliverables:

- Provider: Publish New Subsidy Scheme
- Provider: Update/Close Subsidy Scheme
- Provider: Monitor Applications
- Provider: Post Updates & Notices

Sprint 3

Duration: (Oct 6 – Oct 19, 2025)
Goal: Help farmers discover subsidies easily.

Deliverables:

- Farmer: Search Subsidy Schemes
- Farmer: Compare Subsidies
- Farmer: Check Eligibility

Sprint 4

Duration: (Oct 20 – Nov 2, 2025)
Goal: Make the subsidy application process live.

Deliverables:

- Farmer: Apply for Subsidy
- Farmer: Upload Documents
- Farmer: Track Application Status
- Officer: Dashboard (Pending Applications)
- Officer: Application Verification

Sprint 5

Duration: (Nov 3 – Nov 16, 2025)
Goal: Add support features for farmers.

Deliverables:

- Farmer: Review & Rate Subsidy Schemes
- Farmer: FAQ Section
- Farmer: Tutorials & Guidance

Expected Outcome: Farmer support and engagement features.

Sprint 6

Duration: (Nov 17 – Nov 30, 2025)
Goal: Add grievance management, dashboards, chatbot, and news/blogs.

Deliverables:

- Farmer: Raise Grievance
- Farmer: Dashboard (Applications, Approvals, Payments)
- Farmer: News & Blogs Section
- Farmer: AI ChatBot
- Admin: Grievance Resolution

Sprint 7

Duration: (Dec 1 – Dec 7, 2025)
Goal: Add analytics and reporting for Subsidy providers and System Admin. Provide Multi-language support to farmers.

Deliverables:

- Admin: Generate Reports & Analytics
- Provider: View Reports & Analytics
- Farmer: Multi-language Support

Expected Outcome: Analytics for admins and providers to monitor system performance.

Proof of Concept (POC) for Sprint 1 – Implementation

Objective

> The objective of this POC was to validate the feasibility of the User Management Module, ensuring that users can successfully register, log in, and access the system through a simple home page.

Scope

This POC focused only on the basic system entry points:

- User Registration (Sign-Up)
- User Login
- Home Page navigation
- Documentation of project documentation (Users, Stakeholders, Elicitation Techniques, FRs, NFRs, Use Cases, User Stories, EPICs, and Sprints).

Implementation

- Designed and implemented User Registration and Login pages to test the authentication workflow.
- Developed a Home Page as the first interaction point before login.
- Created initial project documentation to serve as a foundation for further sprints.
- Used standard tools and technologies (e.g., HTML/CSS, JavaScript, database for login, and Figma for design mockups).

Expected Outcome

- New users should be able to sign up with valid details.
- Existing users should be able to log in using their credentials.

Results & Conclusion

- The POC successfully validated the core User Management functionality.
- Farmers, officers, and providers can now enter the system through a reliable login process.

Possible Improvements in Upcoming Sprints

OTP Verification Limit:

- **Current Issue:** OTP verification is restricted to 9 SMS per day.
- **Planned Improvement:** Implement a more scalable solution to handle unlimited OTP requests and ensure smooth user onboarding.

Github Repository Link: KrushiSetu

Contribution :

Topics	Contributed By
Concept Poster	Priyanshi, Jainil, Tarang
Chart Paper	Jeel, Jay, Rudra, Harshil
Users & Stackholders	Tarang, Farzan
Elicitation Technique (Google Form)	Priyanshi, Jainil, Jeel, Rudra, Jay, Harshil, Tarang
Elicitation Technique(Interview)	Priyanshi
FR & NFRs	Jainil, Priyanshi, Rudra, Harshil
Use-Case Diagram	Jeel, Jay, Jainil
User - Stories	Priyanshi, Jainil, Jeel, Rudra,Harshil
EPICs & Sprints	Farzan, Ishan, Tarang
Ui/Ux Design (Login/Signup Page)	Tarang, Jal, Meet
Ui/Ux Design (HomePage)	Ishan, Jay
Frontend	Priyanshi, Jeel
Backend	Harshil, Rudra
Database	Priyanshi, Jainil, Jeel, Harshil