SOFTWARE ENGINEERING

Farmer Subsidy System

Scenario Walkthrough

GROUP 3.8

TEAM DETAILS

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1. SignUp

1.{Successful Scenario} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in
3. The user selects for sign up.
4. The system asks for the details of the user like name,mobile number, state, district, village, category of farmer,gender,qualification,land holding,income,soil type,climatic condition,aadhar no,account number and sets a password to his account.
5. The user enters all the details correctly and selects submit.
6. The user successfully registers into our system.
7. The user gets automatically logged into the system.

S.No	Name	Type	Missing	Class	Reason
1.	F-Name	Attribute	Yes	Farmer	Name of the farmer
2.	Mobile Number	Attribute	Yes	Farmer	Mobile Number is used as username for login
3.	State	Attribute	Yes	Farmer	State in which farm is located
4.	District	Attribute	Yes	Farmer	District in which farm is located
5.	Village	Attribute	Yes	Farmer	Village in which farm is located
6.	Category	Attribute	No	Farmer	Category to which the farmer belongs small,marginal
7.	Gender	Attribute	Yes	Farmer	Gender of the farmer
8.	Qualification	Attribute	Yes	Farmer	To know whether the farmer is

					literate/semi-literate/illiterate
9.	Area	Attribute	No	Farmer	Land area based on which eligibility for subsidy is decided.
10.	Password	Attribute	Yes	Farmer	Password of the farmer to login to his system
11.	Soil	Attribute	Yes	Farmer	Soil condition of the land
12.	Climate	Attribute	Yes	Farmer	Climatic condition of that area in which farm is located
13.	Income	Attribute	Yes	Farmer	Income of the farmer based on which eligibility for subsidy can be decided.
14.	application_form()	Method	Yes	Farmer	Farmer fills the application form with his details before registering
15.	aadhaar_no	Attribute	No	Account	Stores aadhaar no. of the farmer
16.	account_no	Attribute	No	Account	Specifies the account number
17.	signUp()	Method	Yes	Website	To sign up in the system
18.	verifyAccount()	Method	Yes	Account	To verify that the account no. and corresponding Aadhaar number entered are genuine.

2. Log In

1.{Successful Scenario for Farmer} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in.
3. The user selects for sign in.
4. The system asks for credentials and the user enters the mobile number and password.
5. The system authenticates his details by verifying with list of authenticated ids.
6. The user successfully logs in to his profile.

S.No	Name	Type	Missing	Class	Reason
1.	Username	Attribute	Yes	Government	Username for the government to log in to the system
2.	Password	Attribute	Yes	Government	Password for the government to login
3.	F-ID	Attribute	Yes	Farmer	A unique id through which the farmer details can be extracted from the database
3.	login()	Method	Yes	Website	To log in to the system
4.	authenticate()	Method	Yes	Website	To authenticate whether the credentials entered by farmer or government are genuine
5.	auth_fid	Attribute	Yes	Website	List of authorised farmer mobile nos with corresponding passwords

2.{Successful Scenario for Government} :

1. The use case starts when a user accesses and connects to our system's website .
2. The user selects for sign in.
3. The system asks for credentials and the user enters the username and password.
4. The system authenticates his details by verifying with list of authenticated ids.
5. The user successfully logs in to his profile.

S.No	Name	Type	Missing	Class	Reason
1.	G-ID	Attribute	Yes	Government	A unique id for government employee
2.	Username	Attribute	Yes	Government	Username for government employee
3.	Password	Attribute	Yes	Government	Password for government employee
3.	login()	Method	Yes	Website	To log in to the system
4.	authenticate()	Method	Yes	Website	To authenticate whether the credentials entered by farmer or government are genuine
5.	auth_gid	Attribute	Yes	Website	List of authorised government ids

3. Documents Management

1.{Successful Scenario for Farmer} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in.

3. The user selects for sign in.
4. The system asks for credentials and the user enters correct credentials like mobile number and password.
5. The user selects the option of documents.
6. The till date documents of the user are displayed.
7. The user uploads all the necessary documents like aadhar card , land certificate and receipt if necessary, for each document uploaded a unique id is assigned .
8. If the subsidy is sanctioned the necessary receipts are sent to the user else there is no receipt that the the user can view.

S.No	Name	Type	Missing	Class	Reason
1.	doc_upload()	Method	Yes	Documents	The farmer uploads the documents using this function and also calls notify() of Notifications class so as to notify the government about a new document that has been added for verification
2.	status	Attribute	No	Documents	Shows whether the document has been verified or not
3.	Type	Attribute	No	Documents	Refers to the type of document uploaded
4.	D-ID	Attribute	Yes	Documents	For unique Document id
5.	get_doc_status()	Method	Yes	Farmer	To get the status of document verification
6.	F-Did	Attribute	Yes	Farmer	List of document ids
7.	generate_receipt()	Method	No	Documents	Generates receipt for the subsidy sanction
8.	display_doc()	Method	No	Documents	Displays the document

2.{Successful Scenario for Government} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign sign in.
3. The system asks for credentials and the user enters correct credentials like mobile number and password.
4. The user selects my documents from the menu.
5. The system displays all the documents that the farmer(user) has uploaded so far as well as the receipts of subsidies that have been sanctioned to the user. These receipts are added here by the Farmer Database.
6. The user selects the option to upload the documents.
7. The documents get uploaded and gets added to the government side's document list as it will undergo verification by the government employee.
8. The system, displays all the documents that need to be verified to the government employee.
9. The government employee chooses to approve or disapprove the document
10. Accordingly, alert is generated.

S.No	**Name**	**Type**	**Missing**	**Class**	**Reason**
1.	update_status()	Method	Yes	Documents	Updates status of document and also calls notify() of Notifications class so as to notify the farmer about updated status of document
2.	send_docStatus()	Method	Yes	Documents	Sends the document verification status of the desired document id to the farmer
3.	verify_Doc()	Method	Yes	Government	The employee uses this function to verify Document and updating status .
4.	G-Did	Attribute	Yes	Government	List of all document ids that need verification

4. Update Profile

1.{Successful Scenario} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in.
3. The user selects for sign in.
4. The system asks for credentials and the user enters correct credentials like mobile number and password.
5. The user then selects My Profile
6. Selects which field he wants to update and then updates the field successfully.

S.No	Name	Type	Missing	Class	Reason
1.	update_profile()	Method	Yes	Farmer	enables the farmer to update his profile

5. Apply for Subsidy

1.{Successful Scenario for farmer} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in.
3. The user selects for sign in.
4. The system asks for credentials and the user enters correct credentials like mobile number and password.
5. The user then selects the apply for subsidy icon
6. Then the list of different types of subsidies are displayed.
7. The user selects a type of subsidy
8. The system checks from the details provided by farmer like soil,climate,category and subsidies are suggested to the farmer.
9. Relevant schemes are displayed with their scheme ids.
10. The user then chooses a scheme.
11. The user then applies for the subsidy.
12. The user clicks on the submit and subsidy is applied for subsidy successfully.

S.No	Name	Type	Missing	Class	Reason

1.	apply_for_subsidy()	Method	Yes	Subsidy	The farmer can apply for subsidy using this method and will get a subsidy application id, status after applying. After applying, this method calls notify() of notifications class to notify government about the new subsidy request.
2.	Seeds_schid	Attribute	Yes	Subsidy	Scheme ids of schemes related to seed subsidy.
3.	Fertiliser_schid	Attribute	Yes	Subsidy	Scheme ids of schemes related to fertilizer subsidy.
4.	Machine_schid	Attribute	Yes	Subsidy	Scheme ids of schemes related to machinery subsidy.
5.	IrrigationEquip_schid	Attribute	Yes	Subsidy	Scheme ids of schemes related to irrigation subsidy.
6.	Type	Attribute	Yes	Subsidy	The type of subsidy like seeds,fertiliser,equipments etc.
7.	suggestion()	Method	Yes	Subsidy	Based on the type of subsidy chosen, climate ,soil , category of farmer the suitable scheme is suggested.
8.	display_subsidyInfo()	Method	Yes	Subsidy	Asks for the type of subsidy the farmer is interested in and then displays all schemes related to that subsidy using display_schemeInfo() of scheme class

9.	F_Sid	Attribute	Yes	Farmer	List of subsidy application ids

2.{Successful Scenario for Government} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign in.
3. The system asks for credentials and the user enters correct credentials like mobile number and password.
4. The user then selects one of the subsidy requests.
5. The government employee approves the subsidy request,
6. The farmer gets the alert message "Subsidy sanctioned".
7. The subsidy request gets removed from the government employee's list of subsidy request. Subsidy database gets updated.

S.No	Name	Type	Missing	Class	Reason
1.	G-Sid	Attribute	Yes	Government	List of all subsidy ids whose status needs to be updated
2.	transaction()	Method	Yes	Account	The government employee calls this method to send subsidy amount to the farmer

6. Track your Subsidy

1.{Successful Scenario} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in.
3. The user selects for sign in.
4. The system asks for credentials and the user enters correct credentials like mobile number and password.
5. The user then selects the track your subsidy information .
6. The system then displays the status of the subsidy.

S.No	Name	Type	Missing	Class	Reason
1.	get_subsidy_status()	Method	Yes	Farmer	To track the status of subsidy request, it calls send_subsidy Status() of subsidy class

2.{Successful Scenario for Government}:

1. The use case starts when a user accesses and connects to our system's website
2. The system asks for sign in.
3. The system asks for credentials and the user enters correct credentials like mobile number and password.
4.The user selects track your subsidy option from the menu.
5.The government employee will select a farmer whose subsidy request has been approved but not yet delivered from the list. He will update the status of subsidy.This will generate an alert to the farmer displaying the current status of subsidy.

S.No	Name	Type	Missing	Class	Reason
1.	update_subsidyStatus()	Method	Yes	Subsidy	Government updates the status of a subsidy application and then after the status has been updated, the method calls notify() of notifications class to notify the farmer about the update.
2.	send_subsidyStatus()	Method	Yes	Subsidy	Sends the subsidy status of the desired subsidy application to the farmer

7. Subsidy Information

1.{Successful Scenario for Farmer} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in.
3. The user selects for sign in.
4. The system asks for credentials and the user enters correct credentials like mobile number and password.
5. The user selects the subsidy information icon.
6. The current details of the subsidy along with the id,schemes, their types and the type of soil,climate and category they are for are displayed.

S.No	Name	Type	Missing	Class	Reason
1.	display_subsidy_info()	Method	Yes	Subsidy	Displays the subsidy information
2.	type	Attribute	Yes	Scheme	Type of subsidy this scheme is for
3.	name	Attribute	Yes	Scheme	Name of the scheme
4.	soil	Attribute	Yes	Scheme	Soil type if applicable for this scheme
5.	climate	Attribute	Yes	Scheme	Climate condition if applicable for this scheme
6.	rate	Attribute	Yes	Scheme	Rate at which subsidy is given
7.	category	Attribute	Yes	Scheme	Category of farmer for which this scheme holds
8.	display_schemeInfo()	Method	Yes	Scheme	Display subsidy scheme information
9.	s_id	Attribute	Yes	Scheme	Unique subsidy scheme id

2.{Successful Scenario for Government} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign up or sign in.
3. The user selects for sign in.
4. The system asks for credentials and the user enters correct credentials like mobile number and password.
5. The government adds a new subsidy scheme information.And then submits the information.The subsidy information on the page gets updated
6. The government edits a current subsidy scheme information.And then submits the information.The subsidy information on the page gets updated.
7. The government removes a current subsidy scheme information. And then submits .The subsidy information on the page gets updated wherein the selected scheme has been removed.
8. The updated subsidy information gets displayed.

S.No	Name	Type	Missing	Class	Reason
1.	add_scheme()	Method	Yes	Subsidy	Adds a new subsidy scheme by calling constructor of scheme class
2.	update_scheme()	Method	Yes	Scheme	A scheme can be updated
3.	withdrawal()	Method	Yes	Scheme	If a subsidy scheme is no more required its withdrawn

8.Manage Alerts

1.{Successful Scenario for Farmer} :

1. The use case starts when a user accesses and connects to our system's website .

2. The system asks for sign up or sign in.
3. The user selects for sign in.
4. The system asks for credentials and the user enters correct credentials like mobile number and password.
5. The user gets notified if there are any new schemes or any of his documents have been approved
6. Hence the user is alerted

S.No	Name	Type	Class	Missing	Reason
1.	message	Attribute	Notifications	No	Holds the type of message for notification
2.	notify()	Method	Notifications	No	Notifies the farmer if his subsidy has been approved or if there are any new schemes or if any of his pending document has been approved
3.	f_id	Attribute	Notifications	Yes	List of all farmer ids

1.{Successful Scenario for Government} :

1. The use case starts when a user accesses and connects to our system's website .
2. The system asks for sign in.
3. The system asks for credentials and the user enters correct credentials like mobile number and password.
4. The user gets notified if there are pending requests
5. Hence the requests are then looked into.

S.No	Name	Type	Class	Missing	Reason
1.	notify()	Method	Notifications	No	Notifies the government employee if there are any pending subsidy requests or documents for verification
2.	g_id	Attribute	Notifications	Yes	List of all Government id

FINAL CLASSES

1. **Subsidy**

S.No.	Attribute/Methods	Reason
1.	Seeds_schid	Scheme ids of schemes related to seed subsidy.
2.	Fertiliser_schid	Scheme ids of schemes related to fertilizer subsidy.
3.	Machine_schid	Scheme ids of schemes related to machinery subsidy.
4.	IrrigationEquip_schid	Scheme ids of schemes related to irrigation subsidy.
5.	S_Appl	List of subsidy application ids and corresponding status for a particular farmer
6.	Type	The type of subsidy like seeds,fertiliser,equipments etc.
7.	suggestion()	Based on the type of subsidy chosen, climate ,soil , category of farmer the suitable scheme is suggested.
8.	add_scheme()	Adds a new subsidy scheme by calling constructor of scheme class
9.	apply_for_subsidy()	The farmer can apply for subsidy using this method and will get a subsidy application id, status after applying. After applying, this method calls notify() of

		notifications class to notify government about the new subsidy request.
10.	display_subsidyInfo()	Asks for the type of subsidy the farmer is interested in and then displays all schemes related to that subsidy using display_schemeInfo() of scheme class
11.	send_subsidyStatus()	Sends the subsidy status of the desired subsidy application to the farmer
12.	update_subsidyStatus()	Government updates the status of a subsidy application and then after the status has been updated, the method calls notify() of notifications class to notify the farmer about the update.

2. Documents

S.No	**Attribute/Methods**	**Reason**
1.	Status	Shows whether the document has been verified or not
2.`	Type	Refers to the type of document uploaded.
3.	doc_upload()	The farmer uploads the documents using this function and also calls notify() of Notifications class so as to notify the government about a new document that has been added for verification
4.	D-ID	For unique Document id
5.	update_status()	Updates status of document and also calls notify() of Notifications class so as to notify the farmer about updated status of document
6.	send_docStatus()	Sends the document verification status of the desired document id to the farmer
7.	generate_receipt()	Generates receipt for the subsidy sanctioned and it gets stored in documents
8.	display_doc()	Displays the document

3. Notifications

S.No	Attribute/Methods	Reason
1.	message	Holds the type of message for notification
2.	f_id	List of all farmer ids
3.	g_id	List of all Government id
4.	notify()	Notifies the farmer if his subsidy has been approved or if there are any new schemes and it notifies the government employee if there are any pending subsidy requests or documents for verification

4. Farmer

S.No	Attribute/Methods	Reason
1.	Area	Land area based on which eligibility for subsidy can be decided.
2.	Category	Category to which the farmer belongs small,marginal
3.	Income	Income of the farmer based on which eligibility for subsidy can be decided.
4.	Soil	Soil condition of the land
5.	Climate	Climatic condition of that area in which farm is located
6.	application_form()	Farmer fills the application form with his details before registering
7.	notify()	Farmer gets notified whenever there is a new subsidy that has been added or if his document has been approved or if his subsidy has been sanctioned
8.	F-ID	A unique id to extract the details of the farmer

9.	F-name	Name of the farmer
10.	Mobile Number	Mobile Number is used as username for login
11.	State	State in which farm is located
12.	District	District in which farm is located
13.	Village	Village in which farm is located
14.	Gender	Gender of the farmer
15.	Password	Password of the farmer for login
16.	request_for_subsidy()	to apply for a subsidy.
17.	get_subsidy_status()	To track the status of subsidy request, it calls send_subsidyStatus() of subsidy class
18.	request_doc_upload()	To upload a document
19.	get_doc_status()	To get the status of document verification
20.	update_profile()	To update the profile
21.	request_subsidyInfo()	To get the subsidy information
22.	F_Sid	List of subsidy application ids
23.	F-Did	List of document ids

5. Government

S.No	**Attribute/Methods**	**Reason**
1.	G-ID	A unique id for government employee
2.	Username	Username for government employee
3.	Password	Password for government employee
4.	notify()	The government is notified whenever there is a new document that has been uploaded which is yet to be verified or if there is a subsidy request

5.	verify_Doc()	The employee uses this function to verify Document and updating status .
6.	update_subsidyStatus()	The employee uses this function to call update_subsidyStatus() of subsidy class and therefore update the status of subsidy application. If the status now changes to subsidy delivered, then this method calls generate_receipt() of documents class.
7.	update_subsidyScheme()	The employee uses this function to update Subsidy Scheme information.
8.	G-Did	List of all document ids that need verification
9.	G-Sid	List of all subsidy ids whose status needs to be updated

6. Account

S.No	**Attribute/Methods**	**Reason**
1.	aadhaar_no	Stores aadhaar no. of the farmer
2.	account_no	Specifies the account number
3.	transaction()	The government employee calls this method to send subsidy amount to the farmer
4.	verifyAccount()	To verify that the account no. and corresponding Aadhaar number entered are genuine.

7. Website

S.No	**Attribute/Methods**	**Reason**
1.	login()	To log in to the system
2.	signUp()	To sign up in the system
3.	authenticate()	To authenticate whether the credentials entered by farmer or government are genuine

4.	auth_fid	List of authorised farmer mobile nos with corresponding passwords
5.	auth_gid	List of authorised government ids

8. Scheme

S.No	**Attribute/Methods**	**Reason**
1.	type	Type of subsidy this scheme is for
2.	name	Name of the scheme
3.	soil	Soil type if applicable for this scheme
4.	climate	Climate condition if applicable for this scheme
5.	rate	Rate at which subsidy is given
6.	category	Category of farmer for which this scheme holds
7.	display_schemeInfo()	Display subsidy scheme information
8.	s_id	Unique subsidy scheme id
9.	withdrawal()	If a subsidy scheme is no more required its withdrawn
10.	update_scheme()	A scheme can be updated
11.	scheme()	This is used to add a new scheme. It is a constructor of this class. After the scheme is added, it calls notify() function which will notify all farmers about this new scheme.

Class Diagram: