POLITECNICO

MILANO 1863

Software Engineering 2 project

Academic Year 2021-2022

DREAM - Data-dRiven PrEdictive FArMing in Telengana

The Acceptance Test Deliverable Document

Version 0.1

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1.Basic Project Information

- Project Authors
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  - Riccardo Izzo
- Project Repository: https://github.com/AlessioBraccini/SE2-Belotti-Braccini-Izzo
- main reference documents:
  - E. Di Nitto. Lecture Slides. Politecnico di Milano
  - E. Di Nitto. Project Assignment AY 2021-2022. Politecnico di Milano
  - Project DD: https://github.com/AlessioBraccini/SE2-Belotti-Braccini-Izzo/blob/main/DeliveryFolder/DD%20v1.2.pdf
  - Project RASD: https://github.com/AlessioBraccini/SE2-Belotti-Braccini-Izzo/blob/main/DeliveryFolder/RASD%20v1.4.pdf
  - Project ITD: https://github.com/AlessioBraccini/SE2-Belotti-Braccini-Izzo/blob/main/DeliveryFolder/IT/ITD%20v1.0.pdf

2.Installation Setup

A fully running version of the sofware is provided which makes the test process unaffected by the installation process.

Furthermore, using Makefile greatly improve the degree of automation of the installation and reduce the chance of making mistakes.

However, the configuration that needs to be modified does not provide an example, which is not friendly to people who are not familiar with Django.

2.1 Issue

During the installation, some issues are raised, which are shown as bellow.

Issue 1. In section "Backend Installation", when trying to run the command "$ python3 IT/manage.py makemigrations", exception is thrown shown as below:

```
IT/venv/lib/python3.8/site-packages/environ/environ.py", line 367, in get_value
    value = self.ENVIRON[var]
  File "/opt/anaconda3/lib/python3.8/os.py", line 675, in __getitem__
    raise KeyError(key) from None
KeyError: 'SECRET_KEY'
```

But the "SECRET_KEY" is already set in IT/DREAM_pkg/.env

Solution for Issue 1: This issue has been reported to the development team and fixed after using the new release package.

Issue 2. Missing the deploy guide for frontend installation. The last instrument in this part is running the command "npm run build". However, this command only packs files for production.

Solution for Issue 2: In order to run a local usable server, we need to run the command "npm run serve" afterwards.

3. Acceptance test cases

These test cases are extracted by analysing the provided RASD, especially from the use cases and scenarioes sections. Because only the features for policy makers and agronomists are developed, the test cases for farmers are not included.

3.1 Policy Maker

Feature	Testcase ID	Description	expected	result

		Steps	Expected Result	Actual Result
Sign Up	1	1. open the app and click on the "Sign Up" button 2. select correct username, password, email and job role "Policy Maker" 3. press the confirm button 4. check mailbox in order to verify that the procedure ended successfully	sucessfully register to the system	No. 1. when try to use the password whose size is 8, the error message keeps showing. 2. although the system shows that the account is created, no email is received
	2	1. open the app and click on the "Sign Up" button 2. select already existed username with correct password, email and job role "Policy Maker"	An error message is shown	No. register successfully.
	3	1. open the app and click on the "Sign Up" button 2. select already existed email with correct password, username and job role "Policy Maker"	An error message is shown	Partially pass. error message is shown, but with wrong meaning: "Username already exist"
	4	1. open the app and click on the "Sign Up" button 2. select invalid email with correct password, username and job role "Policy Maker"	An error message is shown	Pass
	5	1. open the app and click on the "Sign Up" button 2. select invalid password with correct email, username and job role "Policy Maker"	An error message is shown	Pass. The error meessage is "Password must be at least 8 characters long"
Login	6	login with correct email and password	Login successfually and the system shows the homepage	Pass
	7	login with wrong email and correct password	An error message is shown	Pass. The error meessage is "Email or Password is incorrect"
	8	login with wrong password and email	An error message is shown	Pass. The error meessage is

				"Email or Password is incorrect"
visualize data (G3)	9	1. login to DREAM with a registered user information 2. press the "Visualize Data" button	The system shows the soil moisture and the consumed liters of water by the irrigation system throughout graphs that computes the average quantities across the Country in a span of one year	No. These test cases are derived from the second scenario in RASD. But no "visualize Data" button is found in home page.
	10	1. login to DREAM with a registered user information 2. press the "Visualize Data" button 3. choose "Adilabad" form the menu and sets the time span at two weeks.	The system shows new graphs reporting only data about soil humidity and water used for irrigation retrieved by Adilabad's sensors in the last two weeks	
	11	1. login to DREAM with a registered user information 2. press the "Visualize Data" button 3. choose "Adilabad" form the menu and sets the time span at two weeks. 4. return to home page	home page is shown	
	12	Check Soil Humidity Data: 1. login to DREAM with a registered user information 2. press the "Check Sensors Data" button 3. press the soil humidity data button	the system displays soil humidity data	Partially pass. The button should be "View Sensors Data". Besides, after press the button, soil humidity data and water irrigation data are shown together. Neither soil humidity data button nor the water irrigation button could be found.
	13	Check Water Irrigation Data: 1. login to DREAM with a registered user information 2. press the "Check Sensors Data" button 3. press the water irrigation button	the system displays water irrigation data	
	14	1. login to DREAM with a registered user information	the system displays the steering initiative insert by the agronomist	Pass

Feature		Testcase ID	Description	expected	result
identify the farmers (G2)			2. press the "View Initiatives Reports" button		
		15	View Farmers Ranking: 1. login to DREAM with a registered user information 2. press the best or the farmers rank widget	System shows ranking data	Pass
		16	View Specific Farmer Information: 1. login to DREAM with a registered user information 2. press the best or the farmers rank widget 3. press on a farmer name	system shows farmer data	Pass

16 test cases are executed, in which 8 test cases are passed, 3 test cases are partially passed, and 5 test cases are not passed.

3.2 Agronomist

Feature	Testcase ID	Description	expected	result
Sign in	1	1. open the app and click on the "Sign Up" button 2. select correct username, password, email, job role "Agronomist" and district 3. press the confirm button 4. check mailbox in order to verify that the procedure ended successfully	sucessfully register to the system	No. 1. when try to use the password whose size is 8, the error message keeps showing. 2. although the system shows that the account is created, no email is received
	2	1. open the app and click on the "Sign Up" button 2. select already selected district with correct name, password, email and job role "Agronomist"	An error message is shown	No. the account is still created successfully（P.s. this test case is extracted accroding to domain assumption D13.)
	3	1. open the app and click on the "Sign Up" button 2. select already existed username with correct	An error message is shown	No. error message is shown, but with wrong meaning:"passw

		password, email and job role " Agronomist " and district		ord is too similar to email or name"
	4	1. open the app and click on the "Sign Up" button 2. select already existed email with correct password, username and job role " Agronomist " and district	An error message is shown	Partially pass. error message is shown, but with wrong meaning: "Username already exist"
	5	1. open the app and click on the "Sign Up" button 2. select invalid email with correct password, username and job role " Agronomist" and district	An error message is shown	Pass
	6	1. open the app and click on the "Sign Up" button 2. select invalid password with correct email, username and job role " Agronomist " and district	An error message is shown	Pass. The error meessage is "Password must be at least 8 characters long"
login	7	login with correct email and password	Login successfually and the system shows the homepage. The information listed belown is shown: 1. who are the top farmers of the area	Pass
	8	login with wrong email and correct password	An error message is shown	Pass. The error meessage is "Email or Password is incorrect"
	9	login with wrong password and email	An error message is shown	Pass. The error meessage is "Email or Password is incorrect"
G9:visualize area stastics	10	Check Weather Forecast: 1. login to DREAM with an registered user information 2. press the "Weather" tab	the system displays weather data	Pass
	11	View Farmers Area Ranking: 1. login to DREAM with an registered user information 2. press the "Farmers Ranking" tab	the system displays Farmers Ranking data	Pass

G8: receive the requests for help/reguesstion all in one place	12	1. login to DREAM with an registered user information 2. press the "help requests"	the system displays all incoming requests list, which considering the critical situations	No, the system show the request list but not ranking with the critical situation
	13	1. login to DREAM with an registered user information 2. click on the "Mail box" button and access the new section	the system shows a list of help requests	partially pass. "Help Requests" button instead of "Mail box" button.
	14	Manage Farmers Request (empty message field): 1. login to DREAM with an registered user information 2. click on the "Mail box" button and access the new section 3. click on a help request 4. visualize the request and without answering it. 5. press the "Send" button	An error message is shown	No. the confirmation message is shown
	15	Manage Farmers Request: 1. login to DREAM with an registered user information 2. click on the "Mail box" button and access the new section 3. click on a help request 4. visualize the request and answer it 5. press the "Send" button	System displays a confirmation message and redirects the user to the inbox page	partially pass. The confirmation message is shown but redirects to home page
G10: Easy daily planning procedure	16	1. login to DREAM with an registered user information 2. press the "Daily Plan"botton	The system displays the farms list to be visited, particular attention for under-performing farmer should be displayed	No, The system displays the farmer and daily plan list but without farms information, and particular attention for under-performing farmer wasn't displayed
	17	1. login to DREAM with an registered user information 2. press the "Daily Plan"botton 3. Input the date 4.select the farmer's name	The system displays "plan send successfully", and the data were	Pass

		5.press the "Confirm Plan" 6.back to the "daily plan"page 7.press "show created plan" 8.press the intersted daily plan	displayed into "show created plan"	
	18	1. login to DREAM with an registered user information 2. press the "Daily Plan"botton 3. Input the empty date	The system displays "! Date is required"	Pass
	19	1. login to DREAM with an registered user information 2. press the "Daily Plan"botton 3. Input the dublicated date	The system displays "You have already make a plan for this day"	Pass
	20	1. login to DREAM with an registered user information 2. press the "Daily Plan"botton 3. Input the empty plan	The system displays "! List cannot be empty"	Pass
	21	1. login to DREAM with an registered user information 2. press the "Daily Plan"botton 3.Press the "Update Today Plan"botton 4.press the "Confirm Update" 5.select relative daily plan 6.press" Confirm Update"	The system displays "plan confirm successfully",and the data were updated into "show created plan"	Pass
	22	1. login to DREAM with an registered user information 2. press the "Daily Plan"botton 3.Press the "Update Today Plan"botton but without daily plan that day	The system displays "No plan created for today"	Pass
Steering Initiative	23	Upload Steering Initiative: 1. login to DREAM with an registered user information 2. press the "Steering initiative"botton 3.select file from local 4.press the "submit" with PDF file format	The system displays "SENT"	Pass
	24	1. login to DREAM with an registered user information 2. press the "Steering initiative"botton 3.select file which is not a pdf from local 4.press the "submit"bottom	The system displays "!You can upload only pdf file"	Pass

25	1. login to DREAM with an registered user information 2. press the "Steering initiative" bottom 3.press the "View Sent Reports" bottom 4.select interested reports and click	The report will be downloaded in user's computer	Pass	
26	Upload bigger Steering Initiative: 1. login to DREAM with an registered user information 2. press the "Steering Initiative" button 3. chooses the pdf which is bigger than 5MB to upload 4. uploads the pdf 5. press the "Submit" button	An error message is shown	no. the pdf is stll sent successfully.	

26 test cases are executed, in which 16 test cases are passed, 3 test cases are partially passed, and 7 test cases are not passed.

4. Content Evaluation

4.1Document Quality

4.1.1 RASD

The pros and cons of RASD are listed below:

● The strengths：

■ The key performance indexes (1.1.2) made the goals more clear.

■ Well-structure on scenarios which mades the document easy to read.

■ Goals, assumptions and requirements are well mapping which makes them traceable.

● The shortcomings:

■ The actor of use case "Upload Steering Initiative" is "Agronomist" while accroding to requirement R21, the steering initiative reports are uploaded by "Policy Maker", which is inconsistent.

- All the use cases except the shared ones <u>are</u> required the user to login beforehand, which is missing in entry condition.

- According to the "Sign Up" use case in RASD, user is only required to select username, password and job role. But in fact, email is also required. Besides, if user select the job role as "Agronomist", he/she also need to select the area he/she is reponsible. Therefore, it is better to seperate this use case for different types of users.

4.1.2 DD

The pros and cons of DD are listed below:

- The shortcomings:

  - No definition for "News", but it appeared into the Figure2: high level architecture.

  - Runtime view should be the more explicited.

  - Lost DBMS in whole runtime view part

  - The arrow direction of "view initiative report" are wrong in runtime view.

- The strengths：

  - Vivid figures made the document understand easier.

4.1.3 ITD

The pros and cons of ITD are listed below:

- The shortcomings:

  - Configuration information <u>is</u> incomplete in the ITD

  - Lacking of integration test in the ITD

  - Unit test for "userApp" is not described.

- The strengths：

  - Supporting enough use cases.

4.2Code Quality

4.2.1frontend part

The error message is not clear enough which sometimes confuse the users. For example, when signing up, error message like "the password is too similar" will be shown up while the user doesn't know what's wrong and how to fix.

4.2.2backend part

All functionalities of the website are managed by different apps, which makes the system more modular and easier to maintain.

4.2.3test part

Unit test cases are complete. They not only cover normal scenarios, but also take exception scenarios into account. However, the unit testcases are missing for "userApp".

5. Effort Spent

TimeLine	Xu	Zhang	Hu
10/02/2022	1h	1h	1h
11/02/2022	1h	3h	1h
12/02/2022	4h	3h	2h
13/02/2022	4h	4h	1h