# ATD

**POLITECNICO DI MILANO 1863**

**Title: DREAM - Data-dRiven PrEdictive FArMing in Telangana**

**Description: Based on the project document from teachers**

**Document version: 0.1.2**

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**Release Date: 14/02/2021**

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# 1. IDENTIFICATION OF PROJECT

***Number of authors***: Xu Qiongjie, Zhang Rui, Hu Zhijun
***Link to the repository***: https://github.com/ictar/XuZhangHu
***Main reference document***: "Assignment IT AY 2021-2022.pdf"

# 2. INSTALLATION SETUP

Installing the project was rather tedious. Here we'll list the steps we followed:
- Install and set up the MySQL environment and import the dump.
- Install and set up the Java environment.
- Change environment variables.
- Download and set up the correct version of Tomee.
- Download the right version of the java MySQL connector and insert it into Tomee.
- Download the code and put it into the correct folder of Tomee.
- Install python and the pip package manager.
- Install the flask module.
- Start the geospatial.py program.
- Start the Tomee server.
- Navigate via browser to the given URL.

A major flaw in the guide is the lack of support for other OSs different from Windows, since some members of our group do not have a Windows PC.

We also found some incoherences in the guide. Probably some steps were missing, in fact we got a 404 client error and did not manage to run the project. In the end, the developers provided us with a server with all the settings and thus we managed to easily run the project. We strongly believe that this would have been the best solution from the beginning.

# 3. ACCEPTANCE TEST CASES

We focused on the implemented functionalities for the user acceptance testing. We will provide every functionality with one of the following grades: OK if everything works properly, KO if it does not work and NOK if it partially works or there is some flaw.

| Color | Grade status |
|---|---|
| | OK |
| | NOK |
| | KO |

## 3.1 Farmer

| Function | Description & Data | Result and notes |
|---|---|---|
| REGISTRATION (valid) | We registered as a Farmer with the following data:<br>- Mail: farmer@mail.com<br>- Phone number: 10000000<br>- Password: farmer123<br><br>Expected result: Successful registration. | There is no feedback in case of successful registration. |
| REGISTRATION (invalid) | We registered as a Farmer with the following data:<br>- Mail: ciao<br>- Phone number: 00000<br>- Password: ciao<br><br>Expected result:Invalid email and password format. | |
| REGISTRATION (invalid) | We registered as a Farmer with the following data:<br>- Mail: ciao<br>- Phone number: 00000<br>- Password: empty<br><br>Expected result: Missing values. | |
| REGISTRATION | Interface requirements | |
| LOGIN (valid) | We logged in as a Farmer with the following data:<br>- Phone number: 10000000<br>- Password: farmer123 | |

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|---|---|---|
| | Expected result: Successfully Logged in. | |
| LOGIN (invalid) | We logged in as a Farmer with the following wrong data:<br><br>- Phone number: 10000000<br>- Password: farmer12<br><br>Expected result: Wrong Password. | It states that the farmer does not exist when it actually exists but the password is wrong. |
| LOGIN (invalid) | We logged in as a Farmer with the following wrong data (non existent farmer):<br><br>- Phone number: 20000000<br>- Password: farmer12<br><br>Expected result: Invalid user. | |
| FORUM (valid) | We created a new discussion:<br>- Title: "New technique".<br>- Content: "What do you think about the new technique content?".<br><br>Expected result: Discussion created successfully. | |
| FORUM (invalid) | We created a new discussion:<br>- Title: empty.<br>- Content: "What do you think about the new technique content?".<br><br>Expected result: Invalid Input. | Not handled exception given instead of an error message. |
| FORUM (invalid) | We created a new discussion:<br>- Title: "New technique".<br>- Content: empty.<br><br>Expected result: Invalid Input. | Value accepted and no error message shown. |
| FORUM (valid) | We created a new comment to a discussion:<br>- Content: "I think that it is a great technique".<br><br>Expected result: comment created successfully. | |
| FORUM (invalid) | We created a new comment to a discussion:<br>- Content: empty.<br><br>Expected result: Invalid Input. | Not handled exception given instead of error message. |
| FORUM | Interface requirements. | |
| REPORT | We created a new report with the following data:<br>- Type: Rice<br>- Amount: 10 | |

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|---|---|---|---|
| | - Planting: 10<br>- Date: from 09/02/2022 to 10/02/2022<br><br>Expected result: Valid Input. | |
| REPORT | We created a new report with the following data:<br>- Type: "Choose type of planting"<br>- Amount: 10<br>- Planting: 10<br>- Date 09/02/2022  10/02/2022<br>Expected result: Error Message. | The report should have been rejected reporting an error message. No type selected. |
| REPORT | We created a new report with the following data:<br>- Type: Rice<br>- Amount: 10<br>- Planting: 10<br>- Date: empty<br>Expected result: Error Message. | Not handled exception given instead of an error message. |
| REPORT | Interface requirements | |
| REQUEST | We created a new help request:<br>- Title: "Help me!".<br>- Description: "I need help!".<br><br>Expected result: help request created successfully. | |
| REQUEST | We inserted a feedback to a non answered request:<br><br>- Feedback: 10<br><br>Expected result: Cannot give feedback to a request without an answer. | The form should not allow you to insert a feedback without an answer. In addition, the feedback field does not have bounds and also allows negative data. |
| REQUEST | We created a new help request:<br>- Title: "Help me!"<br>- Description: empty<br><br>Expected result: Invalid input. | The request is rejected but it does not show an error message. |
| REQUEST | We created a new help request:<br>- Title: empty<br>- Description: "I need help!"<br><br>Expected result: Invalid input. | The request is rejected but it does not show an error message. |
| REQUEST | We inserted a feedback in a request with no response:<br><br>- Feedback: empty | The feedback is rejected but it does not show an error message. |

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|---|---|---|
| | Expected result: cannot give null feedback. | |
| REQUEST | Interface requirements | |
| SEARCH | We inserted a search query with the following data:<br>- Region: Jagitial<br>- Production: Rice<br>Expected result: show weather and planting suggestions. | |
| SEARCH | Default region is empty. | There's no placeholder. |
| SEARCH | We inserted a search query with the following data:<br><br>- Region: empty<br>- Production: Rice<br><br>Expected result: cannot send the query. | Not handled exception given instead of error message. |
| SEARCH | Navigating weather page and planting suggestions page. | |
| SEARCH | Interface requirements | |

## 3.1 Agronomist

| Function | Description & Data | Result and notes |
|---|---|---|
| REGISTRATION (valid) | We registered as an Agronomist with the following data:<br>- Name: agronomist<br>- Mail: agronomist@mail.com<br>- Password: agronomist123<br>- Area: Adilabad<br><br>Expected result: Successful registration. | There is no feedback in case of successful registration. |
| REGISTRATION | We registered a second Agronomist with the following data:<br>- Name: agronomist1<br>- Mail: agronomist1@mail.com<br>- Password: agronomist123<br>- Area: Adilabad<br><br>Expected result: Error Message | Not handled exception given instead of error message. |

| | | |
|---|---|---|
| REGISTRATION | We registered an Agronomist with the following data:<br>- Name: agronomist<br>- Mail: agronomist@mail.com<br>- Password: agronomist123<br>- Area: empty<br><br>Expected result: Error message. | The system doesn't help the user finalize the registration. |
| REGISTRATION (invalid) | We registered as an Agronomist with the following data:<br>- Name: agronomist<br>- Mail: ciao<br>- Password: ciao<br>- Area: Adilabad<br><br>Expected result: Invalid email and password format. | |
| REGISTRATION | Interface requirements | |
| LOGIN | We logged in as an Agronomist with the following data:<br>- Mail: agronomist@mail.com<br>- Password: agronomist123<br><br>Expected result: Successfully Logged in. | |
| LOGIN (invalid) | We logged in as an Agronomist with the following data:<br>- Mail: agronomist@mail.com<br>- Password: empty<br><br>Expected result: Invalid Input. | |
| LOGIN (invalid) | We logged in as an Agronomist with the following data:<br><br>- Mail: empty<br>- Password: agronomist123<br><br>Expected result: Invalid Input. | |
| LOGIN (invalid) | We logged in as an Agronomist with the following data:<br><br>- Mail: agronomist@mail.com<br>- Password: agronomist12<br><br>Expected result: Wrong password. | It states that the agronomist does not exist when it actually exists but the password is wrong. |

| HOME (Location tab) | Accessing the location tab. It should show the map of the area.<br><br>Expected result: Correct display of the map. | Not all agronomists have their area image. |
|---|---|---|
| HOME (Weather tab) | Accessing the weather tab.<br><br>Expected result: The system shows the weather situation. | |
| HOME (Water irrigation) | Accessing the water irrigation tab.<br><br>Expected result: The system shows correct water irrigation data. | It is not clear what the date refers to. |
| HOME (Humidity of soil tab) | Accessing the humidity of the soil tab.<br><br>Expected result: The system shows correct humidity of soil data. | |
| HOME (Farmer information tab) | Accessing the farmer information tab.<br><br>Expected result: The system shows the list of farmer informations. | |
| HOME (Daily plan tab) | Accessing the daily plan tab.<br><br>Expected result: The system shows the list of daily plans. | |

## 3.3 Policy Maker

| Function | Description & Data | Result and notes |
|---|---|---|
| REGISTRATION (valid) | We registered as a Policy Maker with the following data:<br>- Name: policymaker<br>- Mail: policymaker@mail.com<br>- Password: policymaker123<br><br>Expected result: Successful registration. | There is no feedback in case of successful registration. |
| REGISTRATION (invalid) | We registered as a Policy Maker with the following data:<br>- Mail: ciao<br>- Phone number: 00000<br>- Password: ciao<br><br>Expected result:Invalid email and password | |

| | | |
|---|---|---|
| | format. | |
| REGISTRATION (invalid) | We registered as a Policy Maker with the following data:<br>- Mail: ciao<br>- Phone number: 00000<br>- Password:<br><br>Expected result: Missing values. | |
| REGISTRATION | Interface requirements. | |
| LOGIN (valid) | We logged in as a Policy Maker with the following data:<br><br>- Mail: policymaker@mail.com<br>- Password: policymaker123<br><br>Expected result: Successfully logged in. | |
| LOGIN (invalid) | We logged in as a Policy Maker with the following wrong data:<br><br>- Mail: policymaker@mail.com<br>- Password: policymaker12<br><br>Expected result: Wrong Password. | It states that the policy maker does not exist when it actually exists but the password is wrong. |
| LOGIN (invalid) | We logged in as a Policy Maker with the following wrong data (non existent Policy Maker):<br><br>- Mail: policymaker1@mail.com<br>- Password: policymaker<br><br>Expected result: Invalid user. | |
| LOGIN | Interface requirements. | |
| HOMEPAGE | We systematically clicked on map regions.<br><br>Expected result: the system opens the region page. | Not handled exception given when clicking on some regions. |
| HOMEPAGE | Interface requirements. | |
| NAVIGATION | Moving between pages that show information.<br><br>Expected result: the system shows the information. | |
| UPDATE PERFORMANCE | Open the update performance page<br><br>Expected: the system loads the farmers data. | The page remains empty. |

# 4. OTHERS

The project is missing a logout functionality. It is not explicitly mentioned in the documents but we believe that it's a core functionality of every web application since a user may access his account from a shared computer.

We evaluated the usability of the project by using the MILE+ (Milano-Lugano Evaluation method) framework that helps to assess usability of websites through a library of heuristics. We just reported here the conclusions of the human machine interaction analysis which state that the usability of the project is problematic. A user is not able to move intuitively in the web site.

It is really remarkable that the developers have included an interactive map in the project. Moreover, it is worth noting that some functionalities for all three types of users have been developed. Probably, it would have been better focusing more on the stability of the code instead of implementing additional features.

# 5. EFFORT SPENT

The Acceptance Testing part together with the document has been done almost only in group so we decided to add only the Team table.

### 5.1 Teamwork

| Task | Hours |
|------|-------|
| Initial briefing | 1 |
| Brainstorming | 2 |
| Installing the project | 7 |
| Identifying UAT | 4 |
| Performing the UAT | 4 |
| Other (Miscellaneous). | 0.5 |
| Writing the document. | 4.5 |

# 6. REFERENCES

- Slides of the lectures.
- Documents of the other group.
- MILE+ reference document.