FarmData2 Onboarding Activity 01
Introduction to FOSS & The FarmData2 Community

FarmData2 is a free and open source software (FOSS) project that is being developed as a partnership between the computer science program and the Dickinson College Farm. The FarmData2 project will be central to the project work in the COMP 290 course next semester and will also become an increasingly important part of this course (COMP 190) in future semesters.

Today's activities introduce you to the original FarmData application and to the current state of the FarmData2 project. You'll learn more about the structure and content of FOSS projects and some of the non-code elements of FOSS projects that support and protect the communities of contributors that make them possible. As FarmData2 is a new project, these non-code elements will benefit from review and refinement. Thus, some of the activities will ask you for input and your thoughts, which will be valuable in getting the FarmData2 FOSS community started on a good path. You'll then dig in and install FarmData2 and have the opportunity to make direct meaningful contributions that will help move the project forward

The FarmData and AnimalData Applications:

The FarmData2 project aims to build on the success of two earlier efforts of collaboration between the computer science program and the College Farm. The farm is currently using the FarmData (https://sourceforge.net/projects/farmdata/) and AnimalData (https://sourceforge.net/projects/animaldata/) applications that were developed by Prof. Tim Wahls and his students from 2011 to 2016. Work on these projects stopped when the department lost Prof. Wahls to his battle with cancer in 2017. That these applications are still in use and the interest from the College Farm and others in the FarmData user community in improving them through the launch of the FarmData2 project is a testament to the quality and enduring value of that work.

The activities in this section will give you a little hands-on experience with to the original FarmData application to give you just a small feel for how it works and what it does. As FarmData2 aims to combine the functionality of both FarmData and AnimalData this will also give you some perspective on where the new project is going and just how far it has to go.

1. Visit the FarmData Demo Site: https://farmdata.dickinson.edu/guest.php. Across the top of the page are the main categories of information that FarmData manages and a Logout button. When you click on an item a new row of sub-categories will appear. For some sub-categories forms will appear when you click them, and for others additional rows of sub-sub categories will appear. We will only have a short look at one of these to get a feel for how FarmData works and compare that to where FarmData2 is currently.

   a. What sub-categories appear when you click on the Harvest category?

b. The Report Category will present a form that can be used to generate a report of harvests that meet desired specified criterion. Generate a report that shows all of the radicchio that was harvested between July 1, 2018 and July 15, 2018.

    i. How many different harvests of radicchio occurred during this period?

    ii. From what field(s) was this radicchio harvested?

    iii. What was the total yield of radicchio during this period?

    iv. If scaled to an acre of radicchio planting how much yield would the farm expect on average?

    v. What happens if you click the "Edit" button? Why might this be a useful feature?

    vi. What is radicchio anyway?

The FarmData2 Application

The FarmData2 application will be built on top of the FarmOS Open Source project (https://farmos.org/). By using FarmOS as a base FarmData2 gets a lot of functionality and support but as you will see it is going to require a good bit of customization before it is ready for use on the Dickinson Farm.

2. Visit the FarmData2 Demo Site: http://npfi.org/farmdata2/. (If possible, do this in a browser other than Chrome as there are a few Chrome related bugs in FarmData2).

   a. Login with the credentials:
        Username: worker1
        Password: farmdata2

   b. One feature of FarmData2 (via FarmOS) that is immediately obvious (at least if not in Chrome) is the map at the top of the page. The yellow rectangles are the different fields on the farm where crops can be planted. If you click on the blue diamonds on the right you can change the base layer to satellite imagery, which looks better.

      i. Click on a few of the fields. In the pop-up you will see Assets and Logs. *Assets* are records of things that the farm currently owns (e.g. crops that have been planted but not yet harvested, feed, tractors, etc). *Logs* are records of activities that have happened on the farm. What types of Assets are displayed for the fields? What types of Logs are displayed for the fields?

      ii. How many of each type of asset and log are reported for field U?

      iii. Click on the Plantings asset. What crops were planted in field Q at the time the sample data was obtained?

3. Reports similar to the one seen in FarmData can also be generated. Click on the FarmData2 Logo at the top left to return to the home screen. Click the "Reports" tab and then the "Quantity" tab and then on "Filters" to open the search criterion pane.

   a. Generate a report that shows all of the radicchio that was harvested between July 1, 2018 and July 15, 2018. This will take some fiddling to figure out exactly how to get it right. Hint:

Start by doing a search just based on date, then given the fields in the report figure out which other filters you need to use to just get the radicchio harvests. Give a screen shot **of the "Filters Pane"** as your answer for this question. Note: There will be fewer entries in this report than in the one from FarmData because only a subset of the data from FarmData data was imported into the FarmData2 Demo Site.

b. Which report was easier to generate, the one using FarmData or the the one from FarmData2? Why?

c. Which report provides more information? What additional information does it provide?

d. Which of FarmData or FarmData2 provides more ability to customize the report?

The preceding questions highlight some of the tradeoffs between the original FarmData application and the FarmData2 application based on FarmOS (as it functions at this moment). One of the overarching design goals for FarmData2 as it develops will be to hide some of the complexity of FarmOS while providing a richer feature set and a more modern look and feel than the original FarmData.

Exploring Mature Open Source Projects:

FarmData2 is a very new project. But it aims to become a mature full-fledged FOSS project with active user and developer communities. In this section you'll explore a few mature FOSS projects to give you a feel for what very successful FOSS projects look like. They will give you some comparison points and a basis for imagining the future of FarmData2. As FarmData2 is a new project, your perspective will help to improve its present state and to shape its future.

4. The table below identifies a number of mature successful open source projects. Like FarmData2 these projects all aim to enhance the greater good. FOSS projects like these with broadly interpreted humanitarian goals are often referred to as Humanitarian Free and Open

Source Software (i.e. HFOSS). For each project, find the URL of its primary web presence, its code repository (e.g. on GitHub) and give a few sentence description of the project's purpose. Note: It may take some digging to find the code repository!

Project Name	URL	Description
OpenMRS	Web:	
	Repo:	
Ushahidi	Web:	
	Repo:	
Fineract	Web:	
	Repo:	
Sahana Eden	Web:	
	Repo:	
Sugar Labs	Web:	
	Repo:	

5. Pick one of the projects above that is of the most interest to you and explore its website and code repository for 10-15 minutes to learn more about it.

   a. Which one of the above projects did you explore?

   b. In a few sentences describe something that liked about the way the project was organized.

   c. In a few sentences describe something that you did not like about the way the project was organized.

Starting a New Open Source Project:

As FarmData2 is a new project it will not be as fully developed as those you looked at above. However, there are some things that all projects should do, even from the very beginning. Read the document "*Starting an Open Source Project*" from the Opensource.guide project to get a sense of the best practices for starting a new Open Source project.

- https://opensource.guide/starting-a-project/

6. The Starting an Open Source Project identifies four types of documentation that should every open source project have. What are they?

In the following sections you will consider each of those types of documentation for FarmData2 and for the project that you identified in question 5. You will find everything you need to know about FarmData2 in its GitHub repository:

- https://github.com/DickinsonCollege/FarmData2

For the open source project you chose in question 5, you may have to search through the repository and/or the web site to find the relevant documentation. If you are unable to locate any of the relevant documentation for your chosen project after 5-10 minutes of searching around the site and repo indicate this by stating "Unable to find." Though, I expect that all of the listed projects have the majority of this information somewhere.

Before you start, please note that unlike other course projects you may have worked on, FarmData2 is a real live project and its development does not necessarily conform to a class schedule. We come to it in the state that it is in right now. It will be imperfect and incomplete. It will be changing and improving. This is what makes it exciting. It also means that it is expected that you will find shortcomings, flaws and mistakes in it. So, don't hesitate to provide critical constructive positively phrased feedback in the following questions. It is exactly that type of input from you that will help to move FarmData2 forward.

Open Source License:

7. What is the purpose of the open source license?

8. Complete the table below for FarmData2 and for the project you selected in question 5. In the License column give the type of licenses that apply to the code and to other content (e.g. documentation) in the project. In the Location column give the location where the license

information was found. If the information appears in a file in the repo give the path to that file. If the information appears somewhere else, give the URL of where it was found.

Project	License		Location
FarmData2	Code:		
	Other:		
	Code:		
	Other:		

9. Read the "Contributions" section of the LICENSE.md file for FarmData2.

   a. What document describes the responsibilities that contributors have for their contributions?

   b. Which clause (a), (b) or (c) would apply to code you contribute to FarmData2 that:

   i. you have written but into which you have also incorporated a few lines of code from another open source project?

   ii. you have written from scratch and tested to ensure that it works?

10. Consider the LICENSE.md file for FarmData2. Is there anything that could be communicated more clearly? Is there anything missing that should be there? Is there anything there that could be omitted? Are there any other ways you might improve this file? These are just examples of the types of questions you might answer here. You are not limited to these questions in your comments, nor do you have to answer all of these questions. Any thoughts you have will be appreciated and helpful in improving FarmData2.

README:

11. What is the purpose of the README file?

12. Complete the table below for FarmData2 and for the project you selected in question 5. In the questions column give the four questions that a README should answer. In projects columns, indicate [yes| no | partially] for each question to indicate if the project's README answers that question.

Question	Project	
	FarmData2	

13. Compare the README files for FarmData2 and for your chosen project. Is there anything in your project's README for which FarmData2 should include similar information? Is there anything in the FarmData2 README that could be communicated more clearly or more completely? Is there anything in the FarmData2 README that should be omitted? Are there any other ways you might improve this file? These are just examples of the types of questions you might answer here. You are not limited to these questions in your comments, nor do you have to answer all of these questions. Any thoughts you have will be appreciated and helpful in improving FarmData2.

Contributing Guidelines:

14. What is the purpose of having a contributing guidelines document?

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15. Complete the table below for FarmData2 and for the project you selected in question 5. In the Contributing Guidelines column, give the location where the information was found. If the contributing guidelines information appears in a file in the repo give the path to that file. If the information appears somewhere else, give the URL of where it was found.

Project	Contributing Guidelines
FarmData2	

16. Complete the table below for FarmData2 and for the project you selected in question 5. In the Contribution Guideline column give the three main types of information that contribution guidelines should provide. In projects columns, indicate [yes| no | partially] for each question to indicate if the project's guideline's document provides that information.

	Project	
Contribution Guideline	FarmData2	

17. Compare the contribution guideline for FarmData2 and for your chosen project. Is there anything in your project's guidelines for which FarmData2 should include similar information? Is there anything in the FarmData2 guidelines that could be communicated more clearly or more completely? Is there anything in the FarmData2 guidelines that should be omitted? Are there any other ways you might improve this file? These are just examples of the types of questions you might answer here. You are not limited to these questions in your comments, nor do you have to answer all of these questions. Any thoughts you have will be appreciated and helpful in improving FarmData2.

Code of Conduct:

18. What is the purpose of a code of conduct in an open source project?

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19. Complete the table below for FarmData2 and for the project you selected in question 5. In the Code of Conduct column, give the location where the information was found. If the Code of Conduct information appears in a file in the repo give the path to that file. If the information appears somewhere else, give the URL of where it was found.

Project	Code of Conduct
FarmData2	

20. Read the code of conduct for FarmData2 and answer the following questions:

   a. What is the title of the code of conduct?

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   b. What is the source of this code of conduct?

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   c. What two pledges does the code of conduct require of community members?

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   d. Who are the community leaders that are responsible for enforcing the code of conduct?

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e. What are the four levels of enforcement?

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21. As pointed out in the article that you read, this code of conduct is used by tens of thousands of open source projects to guide the behavior of their communities. That said, no policy is ever perfect. If you have concerns about this policy, you may describe them here. Or if you are more comfortable discussing them privately, you may contact any of the community leaders you identified in #20d. If you have no concerns, no answer is required for this question.

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How you write (and code):

22. The language and tone used in a project's communications are important to creating a welcoming, inclusive and supportive community. The project leaders have attempted to project the desire for such a community through the initial documents. However, we recognize that we offer limited perspective and thus welcome input and constructive criticism. In reading the materials in the FarmData2 repository:

a. Did you notice any instances of language or tone that are not reflective of the welcoming, inclusive and supportive community that is desired? If so, please point those out here and make suggestions for improvement. Or if you are more comfortable discussing them privately, you may contact any of the community leaders you identified in #20d.

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b. Do you have any suggestion for more general changes or additions to the FarmData2 materials that would better reflect the welcoming, inclusive and supportive community that is desired?

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FarmData2 Communications:

23. FarmData2 uses a messaging platform for connecting its community.

    a. What platform does FarmData2 use for this purpose?

> ```
> ```

    b. Briefly explain, in a few sentences of your own words, the purpose of a *stream* on that platform.

> ```
> ```

    c. Briefly explain, in a few sentences of your own words, the purpose of a *topic* on that platform.

> ```
> ```

24. Create an account on the platform and Join the FarmData2 community. What is your username?

> ```
> ```

25. Post a quick message in the **Introduce Yourself** *topic* in the **general** *stream*. Keep in mind that this topic and stream will continue to be a public part of the FarmData2 community.

> ```
> ```

FarmData2 Issues:

There are a wide variety of ways to contribute and the activities in this section will ask you to engage in two of those ways others will be introduced in subsequent activities.

Reviewing and Clarifying Issues:

Often issues that have been opened in the issue tracker for a project can benefit from additional information and clarification. When you have found something that will improve a project your first step should be to scan the issue tracker to see if there is already a ticket in the

tracker related to that issue. If so, you can add to that ticket rather than creating a new one. This helps keep the issue tracker tidy.

26. Open the Issue Tracker in the upstream (i.e. Dickinson) FarmData2 repository.

a. Scan the open issues in the tracker. Find some of the issues related to documentation. How did you identify these issues? What are the numbers of some of these issues?

b. As initially written this issue is very vague. Based on your careful work in earlier questions you might have more specific information that you can add to these issues. Review the issues you identified in part a, and any comments that have already been added. If you noticed a formatting problem, a typo, a clarification or any other way to improve the issue that has not already been addressed by a comment add a new comment to the issue that describes the problem. If all of the problems you noticed were already addressed, you can add a response to one of the comments indicating that you have observed the same issue.

Creating New Issues:

If after searching the issue tracker you do not find a ticket related to your issue you can add a new ticket to the tracker.

25. Review your answers to questions #10, 13, 17, 21 and 22 and consider which you might want to suggest to the FarmData2 community for improvement.

a. Scan the issue tracker to see if there are tickets related to any of the issues you identified in the above questions.

b. If there is a ticket related an issue you identified, consider adding a comment to the ticket to clarify, extend or to reinforce the call for the issue to be addressed.

c. If there is not a ticket for an issue you identified, consider creating a new one. If you create a new ticket, give it a descriptive name and a sufficiently detailed body message so that other community members may be able to pick up the issue and begin working on it. If you create an issue use labels to tag it appropriately and use automatic issue links (e.g. Related to #XX) to link to related issues as appropriate. These techniques are described here:
   o https://docs.github.com/en/free-pro-team@latest/github/managing-your-work-on-github/applying-labels-to-issues-and-pull-requests

- https://docs.github.com/en/free-pro-team@latest/github/writing-on-github/autolinked-references-and-urls

Note: It is not required that you comment on a ticket or create a ticket for this question. But I hope you will consider doing so. It is your perspective and input that will help build the FarmData2 community, improve its resources and advance the project.