**LCCS**

**ALT3 Reflection**

1. **Investigation and Plan**

First we thought of different suitable topics we could do this ALT on. We planned and came up with the idea to type up code that can help us find ‘The Count of Earthworms in the Area of a Field’. This model was created to help suit the needs of people in farming. The farmer can use the number of earthworms to give an estimation and determine how healthy the ground in the field is. By checking earthworm count it can determine **soil health, ground being impacted by pH, waterlogging, compaction, tillage, rotation and organic matter management.**

There are often issues circulating farming in the news and the role farming plays in Ireland is massive. Our thought process was that we had to choose a model that could help a relevant area in today's society. Furthermore, this model does not just benefit the farmer but also his customers, his customers' customers … so on and so forth. Ultimately, this model could be the difference between something great and something average. This model ties in with agricultural science which Dylan studies, so we knew that it would take a bit of time for us other members of the group to understand what was going on and Dylan understood he would have to explain it as we go along.

1. **Design**

The first thing we researched was what factors you could determine by conducting an earthworm count and how it could benefit the end user. After we finished our research we began to conduct the code.

We each delegated each other roles so that we could spread the workload, which would result in a faster outcome. My main role was analyst - understanding problems and defining the system scope, and designer - creating a representation of the system using tools and algorithms. Dylan covered the majority of programming/coding and Brian covered the testing while also helping me analyse and design. We each helped each other in our different roles in case of any confusion. This made us complete the model quicker and more efficiently.

1. **Implementation and Testing**

Week 1 - We brainstormed ideas for our model and finally concluded on our decision. We had to research data on our model and how our model planned to work, and how it would benefit the end user. We analysed all this data we found and abstracted what we needed for our project. We discussed what needed to be done over the next few weeks and who was doing what work.

Week 2 - After all of us knew our roles, we began to code our model. We kept a diary that logged all the work we had completed throughout the weeks of our project so it would make our end reflection easier to complete. We also logged who did what work so if one person was doing more, he could stop and let others do some work. We had tested our code and it seemed fine but we made some additional changes. As we couldn't complete this in the week we had to carry on to next week.

Week 3 - We made small additional changes to our code (e.g. adding an error catcher) that allowed us to conclude on our final code. When our code was done we saved it onto our USB stick, presented it and began on our reflection.

While undergoing this project we used Google Docs as a method of communication. Personally I found these applications effective as it gave us all a chance to share our ideas, brainstorm and discuss and correct each other's mistakes all while operating on the same page.

One of the best ideas we had in our project was delegating roles to each other. This made communicating much easier and the project was completed much more efficiently as the workload was spread evenly between us.

As we were working as a group, we were consistently checking and analysing each others work. Not only did this improve our communication, but improved our fundamental programming skills as we were learning off each other.

1. **Reflection**

Above all, our project definitely helped us all greatly. We improved our fundamental programming skills by a great deal and this will help us with future projects. I think the area where we most improved on was our communication. I am now much more competent with asking for assistance if I don't know a problem and I'm sure other group members feel the same.

If I was to do this project again, I would design our model based on another subject. Earthworm Count ties in with agricultural science which Dylan studies, so we could conduct a model on something in a subject that I do like PE or Business. This would allow myself to take Dylan's role he played in our model, so that I would be explaining to the group how this model would work. Ultimately, it would change the roles in our group considerably.

**References**

1. <https://www.techbeamers.com/use-try-except-python/#:~:text=Use%20an%20else%20clause%20right,run%20when%20no%20errors%20occurred>.
2. <https://soils.vidacycle.com/soil-tests/1-1-earthworms/>

