Group 2 - MINUTES 20-12-2016

Date 20-12-2016

Time 15:08 – 16:49 (1h 41min)

Location Room A0-27

Present Koos van Tubergen and Harald Drillenburg

Adu Stephen, Andreicha Semida, Nieuwenhuis Jens, Buaron Tal and Cholodov Andrej

# 15:08 Meeting Started: Checking for Absentees

The meeting was held in room A0-27, and it began by checking the presence, no group members were missing. Meeting then moved on to items on the agenda.

# 15:10 Open Questions

During the first session of the open questions we were suggested to put the name of the group as well as the version of the documents that need to be sent. As well, diagrams should not be sent as a jpeg, png, or any other type of picture format but as a *pdf or placed in a word document*, due to printing reasons. Another issue was that when sending documents, *add a small description* of what has been changed and ask for which part of the change we need feedback on.

# 15:17 Last Meeting Minutes

The meeting minutes from last time were compact and concise, as well as understandable. The format for the meeting minutes has improved thus it’s fine to keep on using it.

# 15:17 Current Status

Project status was discussed. The first discussion involved the mathematical models as well as the data collection, which are supposedly almost done. The GUI graph forecasts predictions, the numbers are a bit off. However this is a model and a model has a loose precision, as well it doesn’t take fluctuation into account such as sever winters. The second discussion moved on to the research report which will have to be updated with all the work involved in the data collection as well as the mathematical models.

# 15:25 Cooperation between Group Members

The cooperation between group members has improved, formulas used by the mathematical model have been explained to all the group members. Although no physical meetings have been held, outside the weekly mandatory meeting, more cooperation and communication has been done by Skype; where each team member posts questions, updates or any other information relevant to the project. One suggestion was that if a physical meeting has been canceled to make time and *reschedule the meeting* for another date.

# 15:28 UML diagrams

The domain diagram has only one package, which needs to be removed from the domain model. The reason being is that you can’t have a class outside a package in a domain diagram. Content wise, the Grasswatch was debated to be a technical aspect, because it keeps track of the competition of herbivores therefore is not a domain. The Animal has competition for grass, which is a limited resource, for the three large herbivores. As well the names used in the diagram need to be more clear and specific of what they mean. The **competition includes both goose and foxes**, although they are not shown in the mathematical models nor in the coding they need to be added to the domain model, because they also affect competition. Competition describes the behavior of several animals competing for the grass, therefore the **grass is connected to the competition which is an association**. Also use the **name Domain Model** instead of domain diagram.

Grass

Herbivore

Competition

The sequence diagrams on the other hand were missing the other system, as well as the systems should have a name such as System1 and System2. Also a sequence diagram allows for loops, while a communication diagram is more structured instead of ordered. Thus it was suggested to keep on using the sequence diagram. However values/labels shouldn’t be added to the diagram.

# 15:48 Mathematical Models and Data Collection

The discussion began with a debate of whether or not the amount of grass was necessary in the models. And it was concluded that it was relevant because of the main research question. Although we might not see it, but the population fluctuation depends on it. It was suggested that both the caring capacity, K which is a constant, and the rate, r, of change have things in their formulas that affect the grass. Thus, it was suggested to add to the model variables such ad **Gi, Hi and Fi which are constant variables** that represent grass in current situation. We don’t know how the model be affected, what changes might follow, how much it will change or what direction. However if the changes aren’t large the effect won’t be large, and the more the grass the more the K.

The general idea is around how grass affects the population, therefore grass is explicit. Thus the other group application will give the current amount of grass, and the models will implement them as the **current amount of grass Gi, Hi and Fi.** Suggestion was made to use the libraries form the bibliotheca.

# 16:33 GUI

The GUI presented seemed to be fitted, having data to be entered either manually or as a csv file. Suggestion was made to add parameters such as caring capacity, to have more options for the user.

16:34 Coding

For the coding it was suggested to use the standard model, viewer and controller (MVC) packages. As well as to create a package Net, used for the communication to the other application. In the classes, in order to create a method you have to ask for example “is the method specific to a cow?” is the answer is no then it’s an object. A class has behaviors, methods, for our application in the Model class we could have a method called Predict() , which predicts the population. A second method could be FeedingData(), which receives historical data feed by the user and the model calculates the population or caring capacity. A note was highly stressed which was “extensive models can be used in all aspects/places “. As well a simulation of calculations done on the caring capacity, which cannot be replaced at any time, is not a class.

It was suggested to have an interface IModel to give the caring capacity. As well another suggestion was that the way to determine a class is by asking if is going to be used for behaviors. For instance, if Cow is the name of the species make a class Cow with special attributes. Would a cow be used in animals? Yes, and herbivores might be a subclass of it.

# 16:48 Important dates

* January 9,2017 Research report has to be handed in– it won’t answer the main research question because it involves both applications.
* January 17,2017 Re-hand in the research report with the finalized GUI.
* January 18,2017 Hand in the application in the morning.
* January 20,2017 Presentation.
* January 23,2017 Extra time to improve the project if necessary.

# 16:49 Meeting adjourned.