FIT3036: Daisyworld Project specification

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September 1, 2015

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1 Abstract

Daisyworld is a computer simulation proposed by James Lovelock and Andrew Watson in a paper published in 1983. It proposes the possibility of a simple system that self regulates via the albedo of the two kinds of daisies that grow on an isolated planet. In an attempt to illustrate the effects of a species causing the local environment to be detrimental to its own growth,

the computer simulation is modified by having the two types of daisies flourish at different temperatures. (Should I change my design spec?)

2 Introduction

What problem am I actually solving?

3 Project requirements

3.1 Functional requirements

3.2 Non-functional requirements

4 Project plan

4.1 Risk Analysis

What risks are there in doing this project? How can I mitigate them? To what order are the risks involved?

| Risk	Chance	Impact	Mitigation
Misunderstanding of project specification	Medium	High	Clarify with supervisor
Hardware failure	Low	Medium	Use off site backups and multiple machines
Scope creep	Medium	High	Follow initial design as Closely as possible. Implement as little logic as required.

4.2 Project Timeline

- Weeks 1 to 4
    - Read relevant documentation on Daisyworld
    - Figure out implementation of agent based models and how it can be applied to simulation
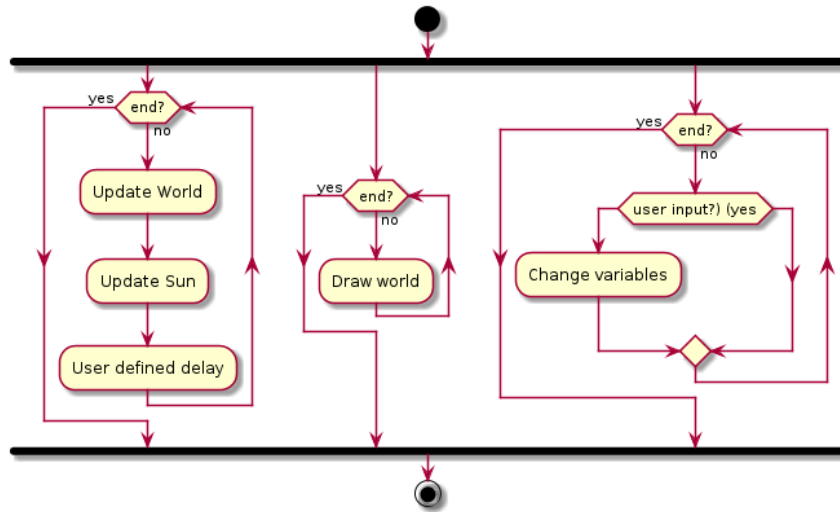   - Choose modification of model
- Week 5

– Implement initial prototype of simulation

- Week 6

  – Implement UI interaction for simulation
  – Modify simulation slightly, with user option to enable/disable

- Week 7

  – Start gathering data for different parameters

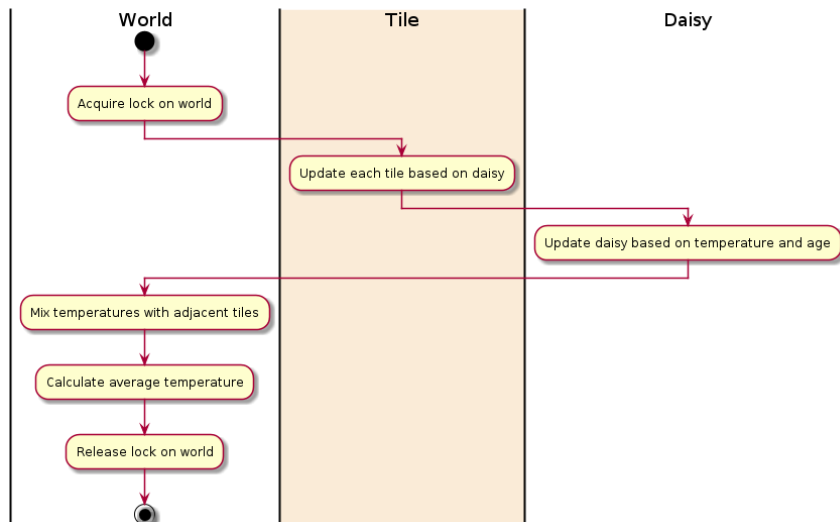- Week 8

  – ???

- Week 9

  – Profit!

5 Program design

5.1 Program architecture
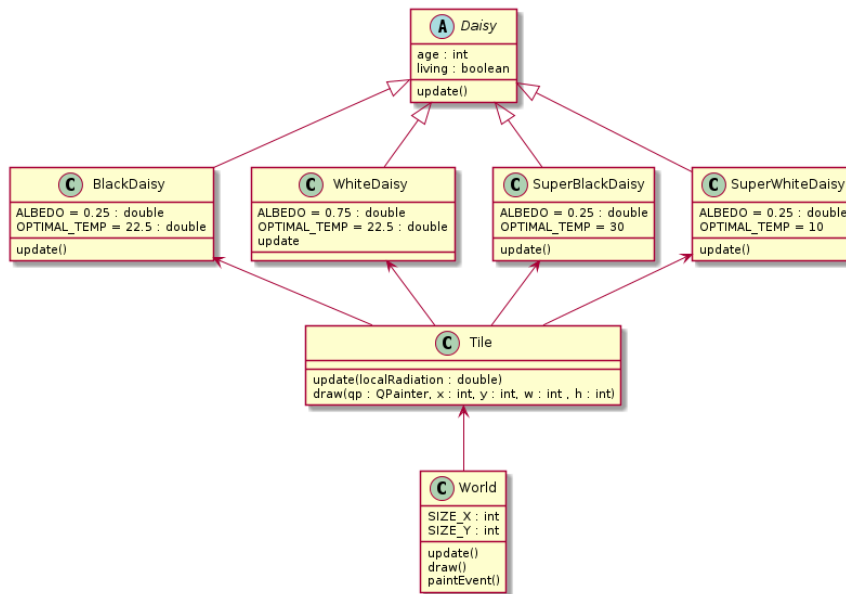
5.2 Basic program flow overview

5.3 Update world flow

6 References

7 Appendix