Engineering Notes No. 10.2

INFORMATION

NAME: Serena Conticello

DATE: 02/26/25 - 03/04/25

Sprint: 10

JIRA BACKLOG

Responsible for:

- Plan out AI and neuroevolution scope of project

Contributed to:

- Determine Final Requirements for End of Semester
- Work on detailed breakdown of test cases

RESOURCES & DOCUMENTS CONTRIBUTED TO

Table 1 - Contributions

Date	Resource/Document	Location	Contribution Description
n/a	Engineering Notes	GitHub	n/a
Sprint 10	NE Plan	OneDrive	Plan for NE implementation

COMPONENTS TESTED

Table 2 - Testing

Date Tested	Component	Result	Comments
02/27/25	Scenic-Sumo	Installed	Was able to install based on specifications from Quentin's repo

PROBLEMS SOLVED

Table 3 - Solutions

Date	Problem	Solution & Notes
n/a	n/a	n/a

PROBLEMS TO ADDRESS NEXT

Table 4 – Future Problems

Problem	Description
Increase font size on diagram	Serena needs to increase the font size for the flow chart diagram
AI model operational	Get it running.

MEETING NARRATIVE NOTES:

Table 5 – Meeting 1

02/27/25	**Meeting Type:** Class
Met with Product Owner(s): N	
Problems Brought Up:	
Problem	**Proposed Solution**
n/a	n/a
Other Items Updated on:	
Hannah and I will focus on getting the AI working with Scenic-Sumo. Isabella, Davian, and Will will be focusing on documentation and learning the Scenic-Sumo framework. Scenic is installed. Sumo is not installed. Scenic test simulation is working but showing up without proper mesh.	
Additional Notes:	
We have roughly 6 operational weeks left of classes, right now we are doing our best to get everything done in consideration of all the set backs we have experienced.	

Table 6 – Meeting 2

03/04/25	**Meeting Type:** Class
Met with Product Owner(s): Y	
Problems Brought Up:	
Problem	**Proposed Solution**

Other Items Updated on:

Got the NEAT AI package running

```
     2   24    45      3.0    0.528    11
     3   11    33      3.0    0.560     0
Total extinctions: 0
Generation time: 0.025 sec (0.040 average)

 ****** Running generation 33 ******

Population's average fitness: 2.37167 stdev: 0.48047
Best fitness: 3.56963 - size: (2, 5) - species 1 - id 4052
Average adjusted fitness: 0.536
Mean genetic distance 2.048, standard deviation 0.799
Population of 151 members in 3 species:
   ID   age  size  fitness  adj fit  stag
  ====  ===  ====  =======  =======  ====
     1   33    73      3.6    0.507     6
     2   25    45      3.0    0.540    12
     3   12    33      3.0    0.559     1
Total extinctions: 0
Generation time: 0.038 sec (0.041 average)

 ****** Running generation 34 ******

Population's average fitness: 2.35038 stdev: 0.49332
Best fitness: 3.91533 - size: (2, 5) - species 1 - id 5095

Best individual in generation 34 meets fitness threshold - complexity: (2, 5)

Best genome:
Key: 5095
Fitness: 3.9153315401452433
Nodes:
        0 DefaultNodeGene(key=0, bias=-0.9772017090016489, response=1.0, activation=sigmoid
, aggregation=sum)
        460 DefaultNodeGene(key=460, bias=-1.0176073304765927, response=1.0, activation=sig
moid, aggregation=sum)
Connections:
        DefaultConnectionGene(key=(-2, 0), weight=-3.124621946602609, enabled=True)
        DefaultConnectionGene(key=(-2, 460), weight=3.239180051474458, enabled=True)
        DefaultConnectionGene(key=(-1, 0), weight=-0.7996715722684561, enabled=True)
        DefaultConnectionGene(key=(-1, 460), weight=2.2219998285706026, enabled=True)
        DefaultConnectionGene(key=(460, 0), weight=4.2833171124499145, enabled=True)
```

Switching to 2D maps

Additional Notes:

NOTES:

None.