

Individual Diary of Abanob Tawfik

Z5075490

12 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE Worked on Assignment 2	NOTHING PROJECT WISE Finish up my code for a* and work on the heuristic	Assignment 2

14 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Starting thinking of design features for the project	Since I have no group members as I can't attend the tutorial due to my surgery I will try to at least pre-think of a design structure	Assignment 2

16 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE Worked all on assignment 2 very close to finishing have very few touch-ups and it should be good	NOTHING PROJECT WISE Try to finish up more of my A* have to fix my heuristic to give best path cost	Assignment 2

16 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Finished Assignment 2 WOOO, that was a long hard hurdle (NOTHING PROJECT WISE)	Look up more on algorithms that allow generation for grids, thinking up more on design I have a few ideas	Other immediate deadlines but I am dedicating time for this project

19 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Still recovering from surgery 😞 😞 but I thought up of a few design ideas I will expand on	Draw out how I want this game to work, try to visualise it before I code it, think of features to add, I have a few ideas I'm thinking of how I want to implement including, sounds on hitting a obstacle or making invalid move, a score system based on time taken to complete scaled on the difficulty, a algorithm to generate boards based on user difficulties, I want to also make the user choose their car if possible but this is all pre-design will vary greatly when I go to implement it	Recovery from surgery and immediate deadlines still no group as I could not attend the tutorial due to my recovery but hopefully I get one soon

19 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Got assigned into my group found my group mates!!! Created a group repository and a Facebook group and got to know my group. Started talking about project, nothing major just asked how everyone is going with the course and assignment 2 progress	NOTHING PROJECT WISE immediate deadlines for my other courses I can't currently commit time and I have a problem with assignment 2 I am putting full attention to finishing	Recovery from surgery and assignment 2 might need a complete re-coding

22 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE I was planning to put full focus on the project because I thought I finished assignment 2 and had nothing in the way but I need to do major revamping to assignment 2	NOTHING PROJECT WISE I have to remake my assignment 2 design completely as I did not follow A* algorithm and I did a greedy search based on a non-admissible heuristic and after a lot of reading decided to revamp entire assignment	Recovery from surgery and assignment 2 need to code the A* properly and think of an admissible heuristic

24 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE this redesign of assignment 2 has me stressing out and looking at screens too long causing eye pains, I'm trying to finish assignment 2 and understand the A* algorithm and lecture notes better	NOTHING PROJECT WISE I hope I can finish assignment 2 A* search working even without a heuristic just giving me the optimal path, but I'm having a bit of trouble understanding the lecture notes and the <n', p+e> stuff it's very hard to wrap my head around especially since my brain is still working with the old algorithm	Recovery from surgery and assignment 2 need to code the A* properly and making this algorithm work without infinitely looping 😞 😞

26 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE I FINALLY FINISHED MY A* IT WORKS AND GIVES ME THE BEST PATH, NO HEURISTIC BUT IT WORKS PRAISE THE LAWD, finally understand A* search which is a great relief as it is a very useful algorithm to know	NOTHING PROJECT WISE Making a heuristic so my costs for the path aren't over-estimated and my nodes expanded aren't a ridiculously high number something admissible and optimal.	Assignment 2 but after this and my COMP2121 work, I will put all my focus into this project I have a design structure I want to work on

27 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE documenting for assignment 2	NOTHING PROJECT WISE documenting for assignment 2	documenting for assignment 2

28 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE	Discussing with group how we are going to assign roles for the project	Assignment 2 documenting

29 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Discussing with group how we are going to assign roles for the project	NOTHING PROJECT WISE Assignment 2 documentation still need to do my project design	Assignment 2 documentation

30 April 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE Assignment 2 documentation almost finished	Start project source, classes and begin coding for assignment 2	Assignment 2 documentation want to create tests

1 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I started a source folder for the project, added grid class, car class, and began a skeleton construction of the project	NOTHING PROJECT WISE Assignment 2 documentation, need to fix up Javadoc	Assignment 2 documentation, need to fix up Javadoc

2 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE ASSIGNMENT 2 IS OFFICIALLY COMPLETE AND SUBMITTED FINALLY	Begin familiarising myself with the javaFX library to try get the grid done today	COMP2121 project + labs and other course work

3 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Yesterday I began learning the javaFX library essentials such as grid pane, buttons, scene, stages and launching applications	I will try to get the 2d grid displaying the 6x6 game board as required. Try to also program the cars onto the grid if I can	Nothing in my way related to the project

4 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I created a 6x6 grid with line separators that appears when program runs, created a scene with a grid pane.	Program the cars on top of the grid pane keep it simplistic with just rectangle	Nothing in my way related to the project

5 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I tried to get the cars onto the grid pane on top, with layering, but that didn't seem to work, trying to redesign	I'm going to try and use two grid panes in one pane and program both the grid and car in one pane.	Understand javafx programming in layers, can't seem to get the cars on top of the grid I created

6 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I got the cars onto the grid pane but they are not placed where I want them to be placed, I'm going to try to properly get my grid correct with cars	Fix the car position on the grid so the cars aren't placed off the board or in random places.	Nothing in my way related to the project

7 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I got the cars on the board in the right position using translate, but I don't think translate is good, I will reconsider re-doing it with relocate Instead of two grid panes in a canvas, I used a group and a grid pane, and the group were the vehicles.	Try to get the cars to move on click and drag	COMP2121 lab and project

8 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I got the cars to move on the grid based on click and drag, but they aren't sticking to a column and row on release and are able to collide	I'm going to try and get car collision sorted, and also try to get the cars to snap to a grid position on release quite a lot but don't think I can get it all done today	Nothing in my way related to the project

9 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I got the cars to snap into a grid position on release, but I can't seem to get the collisions to work properly,	I'm going to try and get the blocks to not collide together, but I am almost certain I need to redesign the car movement	Using translation to move the car rather than relocation made it complicated to keep track of the car position on the grid

10 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
<p>Complete overhaul, redesigned movement with relocate, simplified the move function to only move it.</p> <p>With a much-simplified move function it made checking collisions simple. It also made snapping more intuitive.</p> <p>The drag function now checks the last valid x and y coordinate the block can move in, and on release snaps to that coordinate</p> <p>To check for collisions, I have a list of x and y coordinates stored for each block showing where they are on the grid, and when the block is attempted to move if there is a obstruction in the way, the last valid x and y coordinate are the ones before that block. This means it will not jump back to where it was initially dragged allowing for collisions to visually make more sense, I also used a flag to make sure that once the initial collision is detected, the block cannot move, as this stops the bug over dragging over the blocks. Instead of offset to simplify it I used a variable to keep track of the initial click position, to work out offset in one variable much simpler.</p>	<p>Comment on the code and add documentation</p>	<p>Need currently to finish</p> <ul style="list-style-type: none">- Victory screen (medium)- Menu (medium)- Level generator (hard)- Sound on collision (easy)- Score system (easy) <p>Easy medium hard refer to priority, easy being lowest priority and hard being highest.</p>

11 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE Full day at university yesterday got home and slept	NOTHING PROJECT WISE I need to begin work on COMP2121 project at the same time	COMP2121 Project

12 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE	Try and implement a board generation algorithm	COMP2121 Project

13 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Yesterday I implemented a board generation algorithm that doesn't work but the plan is to have blocks randomly placed around the board with the goal car always being in the goal row, and then performing Astar to check if the given configuration is solvable. If the configuration is solvable we will generate that board	Fixing up my Astar currently, all my grids have same memory address because of shallow copying, going to try figure out how to make deep copies	COMP2121 Project

14 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I added a trymove function which attempts to move a vehicle either left/right/up/down in order to move the vehicles around, but my A* is still not yielding any desired result	NOTHING PROJECT WISE I need to get on COMP2121 project and atleast get the basis	COMP2121 Project

15 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE	NOTHING PROJECT WISE I need to get on COMP2121 project and atleast get the basis	COMP2121 Project

16 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
NOTHING PROJECT WISE I got the basis of my COMP2121 project and now have time to commit to finishing gridlock, the only thing in the way is board generation but it's a lot more challenging than thought	Try to redo from A* search to a simpler search such as BFS, the grids added to open aren't unique, share same address need to make hard copies but this is complicated as with my re-implementation, each gridvehicle needs a grid and each grid needs a list of gridvehicles so it causes problems	COMP2121 Project

17 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
Have major issues in my BFS when creating deep copies due to the nested nature, it caused my pc to freeze and 100% cpu usage, I need to find a way to represent the grid and alter it	Try to find a method to represent my grid differently so I can finish my BFS, currently the trymove function works and it will change the state of the board, however it will also change the state of the parent board aswell, I will also be implementing a searchnode for the search in order to be able to retrace the path, one extension which I will try to do is add a show solution button when enough points are earned. And it will play the solution by unwinding the searchNodes state, maybe just string format, not sure yet	COMP2121 Project

18 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I represented the board in a more primitive state, but the search still doesn't work. I am trying to solve the hard example board with my search but it is currently returning no solution	I want to keep working on the solver as it is the key to my board generation returning SOLVABLE boards	The board generation algorithm, im completely stuck I cant figure out how to fix it

19 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I found the issue to the cloning method, the grid also contains grid vehicle which contains a grid and this causes non unique states to be made, so I created a class to represent the state in a primitive form of just ints and list of primitive vehicles. The new class is very easily clonable and the search is fast. Currently it is returning the hard example is unsolvable, however it is atleast adding new states, but I think this is an issue in not exploring all possible states	Fix the algorithm to properly search ALL states	Comp2121 project

20 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
I fixed the issue it is now able to solve the difficulty example! And it also can solve any board passed in.	I want to fix the user interface to display a dashboard for the user and maybe even add a menu for the user	COMP2121

21 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
FINISHED! The buttons on the main menu links to the game, and the main menu is able to be re-accessed. I fixed the positioning issues to be relative to screen size rather than absolute. The game works in every aspect however it is currently too slow at loading levels, the ui delay when loading a hard board is frustratingly bad.	I want to try and test the boards generated in every way shape and form so that there is no weird issues.	COMP2121

22 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
HUGE bug found, where sometimes the list of vehicles on the grid is different to the vehicles in the group. This would cause the vehicles displayed to not be able to move and this only happens sometimes when loading boards? Trying to fix this asap	Fix the bug and try to also increase performance! I will try to multi-thread it so that boards can be generated WHILE the user is playing, so no ui delay.	COMP2121

23 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
The bug was an easy fix, I just made the group of vehicles be the list in the grid so It is always consistent, the major thing I did yesterday was got multi-threading to actually work pretty well, there are 3 threads used to generate boards in a while loop using an arrayblocking queue to store the states generated. Once the user finishes a level it will pop a state from the queue at the difficulty the user has chosen, so a state is instantly loaded. I had to redo a majority of my grid generation algorithm to support this, and also made a class to store each state created (grid + the group of vehicles)	I really need to fix the cpu usage issue, my laptop almost crashed, it works but I need to stop generating, or make thread pause when the queue is full, and only generate when the queue is not full. I also want to slow the search down so the cpu usage is drastically reduced but it is still generating boards at a reasonable rate	THREAD KNOWLEDGE

24 May 2018

What Did I Do Yesterday?	What will I Do Today?	Is anything in my way?
<p>THREAD.SLEEP ONLY PUTS THE CURRENT THREAD TO SLEEP NOT THE MAIN THREAD, I added Thread.sleep of different sizes in all the searches, and also used the proper put method so the queue locks and the proper take method associated with the arrayblocking queue. Since the main thread now just contains Thread.sleep(time) and generate board function, and the generate board function returns if the queue is full when the queue is full the thread will essentially just sleep. CPU usage is so much more efficient. I also documented and finished project design document, and got the zip working with run and compile its all over. Been a long journey!</p>	<p>Submit! Finished been a nice journey</p>	<p>nothing</p>