Project Plan - Applications of Cellular Automata (James,Fin,Hongyu,Yuki)

Group Number _____21_____

	Requirement	Implementation Task
1	Represent unburnt, burning for each type of terrain (3 types) as well as a lake.	Need to adapt the representation of possible states in the possible CAs from 0 and 1 to include 8 total states
2	Locations of points on the map must be accurate to fit as given in the assignment.	Decided on 200*200 grid size as smallest required would be 40*40 but spread of fire would be too rough
3	Creation of map.	Call set_initial_grid function to assign 2d array to the grid
4	Give different properties to different terrain eg burning time.	Done inside the transition function method. Will be done with probability that varies for different terrain types
5	Factor of wind direction	Using transition functions also. Probability of transition will increase in the direction of prevailing wind and decrease against it.
6	The relative time for a fire starting at the power plant and incinerator to reach the town assuming a prevailing wind direction.	Will be measured via generations at the point of fire reaching town.
6	A study on how time to reach the town from the incinerator would. change depending on the wind direction.	Same use of measurement as above.
7	The planning of short-term intervention in the case of a fire starting at the incinerator.	Cells will be picked at random and then adjacent cells will be filled until it reaches 12.5km. Process repeated until fastest one is found
8	Longer term interventions to stop fire. Eg Adding more dense forest, controlled burning, fire breaks,	Another state will need to be added for fire breaks/ controlled burning

Time Plan

Week 6	Week 7	Week 8	Week 9
1. Understanding the workings of previous lab code.	1. Setting up a map. 2. Look at transition functions. 3. Write Project Plan.	1. Finish off map design. 4. Determine and Implement transition functions.	1. Run Tests 2. Implement possible long term interventions eg extra state for fire break terrain