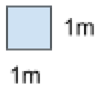
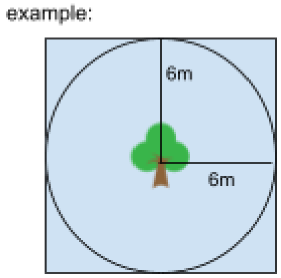
Team Members: Ben, Ash, Eliana, Caitlin

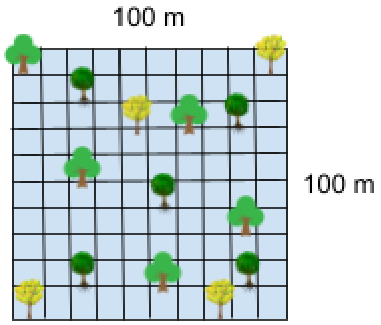
Design Plan

INITIAL DESIGN PLAN:

- 2d Model(grid) 100m x 100m
- Grid of area contains:
    - Plants represented as dots, shaded squares, or set id values
- Linked lists with trees -> throw in data





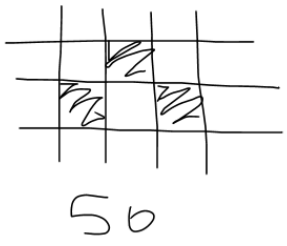


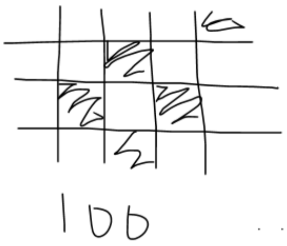
OUTPUTS PLAN

- What would be our outputs ?
    - Plants that survived in the year printed
    - Its location on a printed grid

Initial Output idea:

- Print (image or command print) grid of plants every 50 years until year 400
- Print a grid with shaded squares that represent that a plant resides in that space





.....etc…..

Final Output Idea:

- Number the different trees
- Print grid with the tree number in a location

3		1		4
	14		7	
				12

50

	3		4	
1		7		
	14			12

100

......etc…..

GENERAL CODE PLAN:

#include stuff

Struct
	Int …//initialize variables
	//set values for variables initialized
	//create structure of each plant type that contains:

Parameters

- Life Span
    - End of Life
    - Current Life
- Shade Tolerance
    - Max shade
    - Current shade
- Sead Radius
- Height -> width (⅓ of height)
- Temperature (each year)
- Growth Rate
    - Highest rate
- Seed Production
    - Life to seed (Counter)
    - Max Value (age of tree) -> Compare to amount of seed produced

General Code plan of STRUCT:
//initialize variables and type

Code Plan

```
struct plant {
   int age;
   int maxAge;
   float shade;
```

//state value of variables

Code Plan:

```
struct plant x;
```

```
   x.age = 0;
   x.maxAge = newmaxAge;
   x.shade = 0.0;

…. etc…. //include variable x ahead of codes..
//change variable x later
```

General code plan of PARAMETERS:

No syntax included in plan…

```
// initialization
Is year 0
    -   set initial year and current year to 0.
Trees not grown
    -   Set width to 0

//create a while loop for year less than 400
    -   Life of tree
            -   If the max lifespan life of tree = current year
                    -   Current year = 0

    -   Height //while loop if height is less than max height then…
            -   Height = height + growth rate
            -   Width = height/3
            -   // if statement (if the current year is the year of seed production)
                    -   Return seed amount

    -   Growth Rate
            -   Height = height + growth rate
```

//General Code Plan

Core Functions

GENERAL PRESENTATION IDEA

Slide 1: Introduction
Slide 2: Problem Statement
Slide 3: Output Ideas
Slide 4: Initial Conditions

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Slide 5: Initializing Values