

CS334A-S24-HW0-Write-up:

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1. Did you complete all required sections and does your solution have all required functionality stated in this assignment. If not, state what functionality you successfully implemented and what is missing.
 - Yes, all required sections have been completed, and the solution includes the specified functionality.
2. Draw a picture of what the array of points looks like (as a datastructure). Please initialize and show the value of each variable in each of the point structs.
 1. [point**]-->[point*]-->[point]-->{x: 0, y: 10, c: 0}
 - [point*]-->[point]-->{x: 3, y: 7, c: 0}
 - [point*]-->[point]-->{x: 4, y: 6, c: 0}
 - [point*]-->[point]-->{x: 5, y: 5, c: 0}
 - [point*]-->[point]-->{x: 6, y: 4, c: 0}
 - [point*]-->[point]-->{x: 7, y: 3, c: 0}
 - [point*]-->[point]-->{x: 8, y: 2, c: 0}
 - [point*]-->[point]-->{x: 9, y: 1, c: 0}
 - // the [point**] is pointing to each of the [point*]'s but not visualized
3. Run your code through valgrind, copy and paste the very end of the valgrind output that shows the memory allocation/frees/leaks (your program should be free of memory leaks).
 - \$ valgrind --leak-check=yes --log-file=valgrind.rpt ./output 10
 - 10
 - done with allocations
 - Orig Pts: x:0, y:10, c:0
 - Orig Pts: x:1, y:9, c:0
 - Orig Pts: x:2, y:8, c:0
 - Orig Pts: x:3, y:7, c:0
 - Orig Pts: x:4, y:6, c:0
 - Orig Pts: x:5, y:5, c:0
 - Orig Pts: x:6, y:4, c:0
 - Orig Pts: x:7, y:3, c:0
 - Orig Pts: x:8, y:2, c:0
 - Orig Pts: x:9, y:1, c:0
 - poly-line resized
 - Orig Pts: x:10, y:0, c:0
 - size: 1
4. If your program would include /usr/include/math.h header file:
 - What functionality does this module implement? (use cat or man commands)

```
mathematical operations
```
 - Copy and paste 5 sample functions/methods defined in this module? (function signature only)

```
inline int issignaling(float val){
return issignalingf(val);
}

is zero(float val){
return fpclassifyf(val) == FP_ZERO;
}

inline int issignaling(Float128 val){
return issignalingf128(val);
}

(extension({typeof(x) x = (x); typeof(y) y = (y);\
!isunordered(x,y) && x > y;}))

(extension({typeof(x) x = (x); typeof(y) y = (y);\
!isunordered(x,y) && x >= y;}))
```
 - Using CLI, how do you find the content of the math.h file?
 - primarily man because that was what I have used more in the past
5. Shortly describe the function of the libraries with the headers included in the /usr/include/linux folder.
 - They interface the OS and our C programs.