

6MIDSI9

Midterm Review

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SOC-54989153

1. Given a vector **v** and an array **a**, both with a size of 5, which one always generates an error?

A `a[0] = v.at(2);`

B `v.at(5) = a[10];`

C `v[3] = 30;`

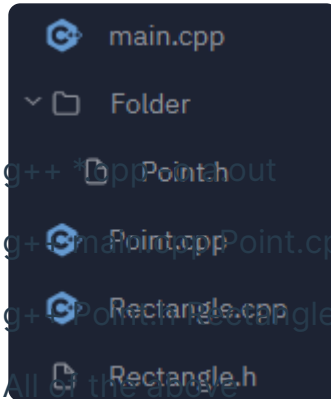
D `v[0] = a[4];`



i Out of range; a list of size 5 has indices 0-4

2. Which of the following will not successfully compile a runnable program with the following files?





- A g++ *.cpp Point.h
- B g++ *.cpp Point.cpp Rectangle.cpp
- C g++ *.cpp Rectangle.cpp
- D All of the above

i Compiling multiple files should be done with **.cpp** files
*.cpp compiles ALL .cpp files

3. What is the correct way to declare an array **a**?

- A array a;
- B int a;
- C int a[3];
- D array<int> a;



4. Given this code, what is the correct way to declare an object?

```
class Rectangle {  
private:  
    ...  
public:  
    Rectangle();  
    explicit Rectangle(int);  
    explicit Rectangle(int, int);  
};
```



- A** Rectangle r = 3;
- B** Rectangle r(3, 4);
- C** Rectangle r = {3,4};
- D** Rectangle r = new r;

i **explicit** specifier requires the object be created like you would normally (no A or B)
D is an attempted, and incorrect, declaration of a dynamic object.

5. Which line of code is the correct way to overload the unary operator ++ ?

- A** void operator++();
- B** operator operator++();
- C** int ++();
- D** Point operator+(Point);



6. Which line of code is the **best** code for declaring a good input string stream?

A `istringstream ssout(name);`

B `ostringstream ssin(name);`

C `ssin(name);`

D `istringstream ssin(name);`



i The question asks for the **best** code, this means it must have a good variable name as well; thus, D is better than A.

7. When we're done reading/writing a file, what is the best thing to do with the file?

A Delete it

B Close it

C Open it

D None of the above



8. What is the difference between Classes and Structs in C++?

A Structs cannot have member functions.



- B** A class is private by default while a struct is public by default
- C** Classes can have structs as member variables, but structs cannot have classes as member variables.
- D** All of the above



9. Which set of code is a valid header guard?

A `#ifndef POINT_H`
...
`#endif`



B `#ifndef POINT_H`
`#define POINT_H`
...
`#endif`



C `#define POINT_H`
`#ifndef POINT_H`
...
`#endif`

D `#ifndef point.h`
`#define point.h`
...
`#endif`

10. What does the following code do?

```
vector<vector<Point>> Graphs;
```

- A** Create a vector of Point objects labeled Graphs
- B** Create a vector of graphs (i.e. has multiple points) labeled Graphs
- C** Create a 2D vector holding graph objects labeled Graphs
- D** Generate a syntax error



i C could've been right if it was Graph in the vector rather than Point

11. What type of function is the following code?

```
Point::Point (int x, int y) : x(x), y(y) {}
```

- A** A destructor for the Point class
- B** An overloaded constructor for the Point class
- C** A helper function for the Point class
- D** A object function for the Point class



12. Which code is the correct way to get the length of an array **a**

- A** a.size()
- B** len(a)
- C** a.length()



- D** len(a.size())
- E** none of the above
- i** Arrays do not have functions... oof



13. Given the code and compilation below, which option will run the code without errors?

```
main(int argc, char** argv) {  
    if (argc > 3) {  
        ...  
    }  
    else  
        throw std::run_time("Bad Use");  
}
```

```
~/root/: g++ main.cpp -o a.out
```

- A** ./a.out grades.txt students.csv test.txt
- B** ./a.out students.csv test.txt
- C** ./a.out grades.txt test.txt students.csv schools.csv
- D** a.exe grades.txt test.txt
- E** Both A and C
- F** All of the above



- i** Different look, but does the same thing-- it checks to make sure there's enough arguments

14. Does this code work properly?

```
void Point::setPoints(int x, int y) {  
    x = x;  
    y = y;  
}
```

- A** Yes
- B** No, the function does not compile as there are syntax errors
- C** No, this→should be appended to the rhs of x and y in the function.
- D** No, this→should be appended to the lhs of x and y in the function.
- E** No, this→should be appended to the x and y in the parameter of the function.

**15.** Given the code below, what would be stored in **Name** after the function ends?

```
const name Student::foo(const string& name) const {  
    name = name;  
    name = "\t\"Bob Ross\""  
  
    return name;  
}
```

- A** Unknown
- B** "Bob Ross"



- C** "Bob Ross"
- D** Bob Ross
- E**
- F** Error

i Question asks for Name, we don't know what Name is as it does not appear in this code

16. Which pseudo code should replace `/* HELP */` for this algorithm to perform its task?

Algorithm UnknownAlg (vector<double>& v)

sz = v size

for i=0 **to** sz-1

min = i

for j=i+1 **to** sz-1

`/* HELP */`

end

temp = v[i]

v[i] = v[min]

v[min] = temp

end

end

- A** **if** v.at(min) < v[j]
min = j
- B** **if** v.at(j) < v[min]
j = min



C if $v.at(j) < v[min]$
 $min = j$

D $temp = v[i]$
 $v[i] = v[min]$
 $v[min] = temp$

E $temp = v[i]$
 $v[temp] = v[min]$
 $v[min] = v[i]$

i Fun fact: Selection sort has a worst case run-time of $O(n^2)$

17. Bonus: What might be a reason to use namespaces

A To avoid variable name conflicts

B To avoid class name conflicts

C To organize class and function uses into more groups

D If you feel like it

E All of the above



i Don't worry, no optional readings will be on the test, although its syntax might be used, you won't be tested on it.

18. Coding Portion: <https://docs.google.com/document/d/18eM1sNLwHuae5Pz->

IMRCTKyYFtKtOSISMkZXOznLVNW/edit?usp=sharing

Note: The grading breakdown is not the same as your actual midterm (to my knowledge), it is simply a way for you to grade yourself and see a potential score.

A Got it

B Don'ts Gots Its



Add a Question

Multiple Choice

True / False

Short Answer

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