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BS IN COMPUTER SCIENCE — **CMSC 21 – 2ND LONG EXAM**

I. TRUE OR FALSE

1. TRUE
2. FALSE
3. FALSE
4. TRUE
5. FALSE
6. TRUE
7. FALSE
8. TRUE
9. FALSE
10. TRUE
11. FALSE

II. PROVIDE THE ANSWER TO THE FOLLOWING

1. Because regardless if it will be specified or not, the compiler will just ignore it anyway.

2a. bool isPalindrome(*string);

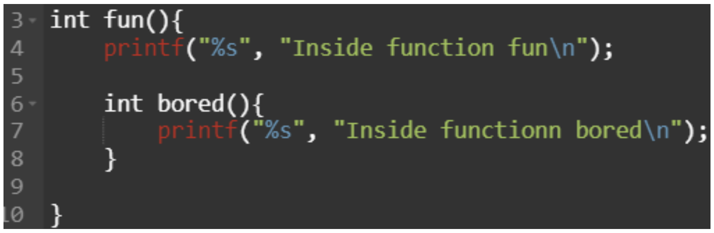
2b. float computeAverage(float array[20]);

2c. void reverseSentence();

2d. float squareRoot(int number);

3a.

- Invalid function nesting
- Missing quotation marks to some statements
- Should there be no parameters included



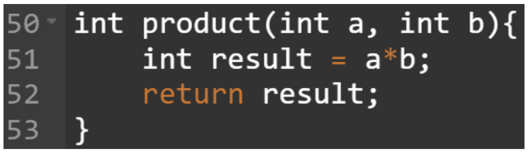
```
int fun(){
    printf("%s", "Inside function fun\n");

    int bored(){
        printf("%s", "Inside functionn bored\n");
    }

}
```

3b.

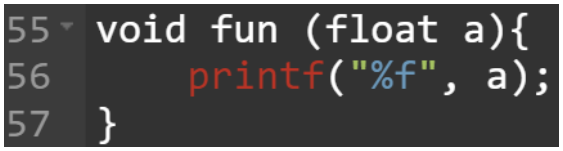
- No return value.



```
int product(int a, int b){
    int result = a*b;
    return result;
}
```

3c.

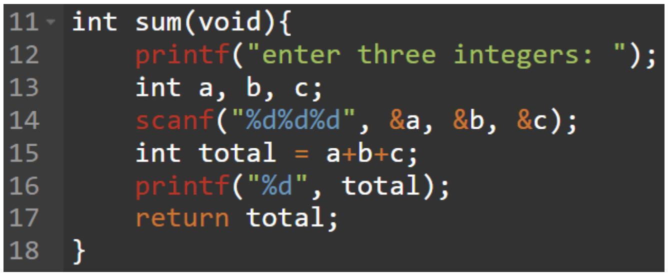
- Variable declaration repeated.
- Some syntax errors were observed (semi-colon placed before bracket)



```
void fun (float a){
    printf("%f", a);
}
```

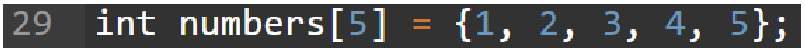
3d.

- Some syntax errors were observed (missing semi-colons).
- Inappropriate return type.



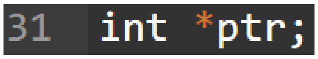
```
int sum(void){
    printf("enter three integers: ");
    int a, b, c;
    scanf("%d%d%d", &a, &b, &c);
    int total = a+b+c;
    printf("%d", total);
    return total;
}
```

4a.



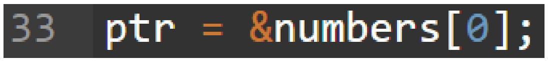
```
int numbers[5] = {1, 2, 3, 4, 5};
```

4b.



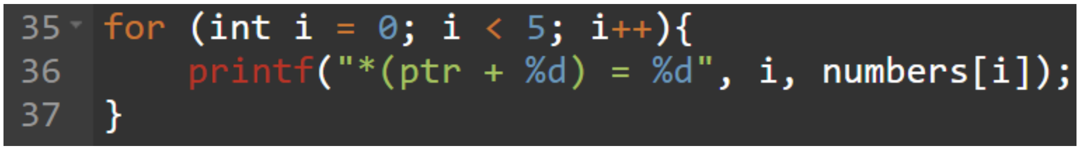
```
int *ptr;
```

4c.



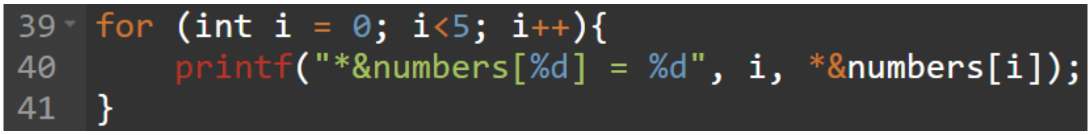
```
ptr = &numbers[0];
```

4d.



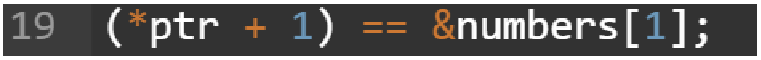
```
for (int i = 0; i < 5; i++){
    printf("*(ptr + %d) = %d", i, numbers[i]);
}
```

4e.

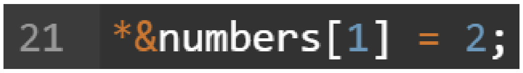


```
for (int i = 0; i<5; i++){
    printf("*&numbers[%d] = %d", i, *&numbers[i]);
}
```

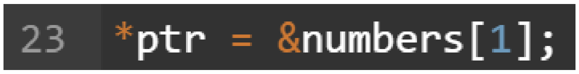
4f.1.



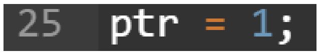
```
(*ptr + 1) == &numbers[1];
```

4f.2. 

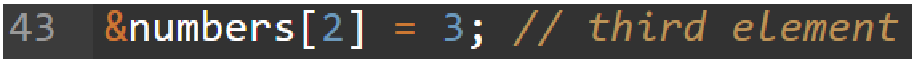
```
*&numbers[1] = 2;
```

4f.3. 

```
*ptr = &numbers[1];
```

4f.4. 

```
ptr = 1;
```

4g. 

```
&numbers[2] = 3; // third element
```

5a. no error

5b. should use pointer (*) since it refers to an array.

5c. xp is not an array, thus the utilization of [ ] is invalid.

5d.

III. APPLICATION

1. https://github.com/mackkk-n/CMSC-21-Lecture-/blob/master/Long%20Exam%202/LE2_Anagrams.c
2. https://github.com/mackkk-n/CMSC-21-Lecture-/blob/master/Long%20Exam%202/LE2_Pointers_Anagrams.c