

## Homework Assignment 4

### Part A (15%)

1. What is the output of this program? Why?

```
1  #include<stdio.h>
2  int main(){
3      int a=2,b=7,c=10;
4      c=a==b;
5      printf("%d",c);
6      return 0;
7  }
```

2. What would this code print? Why?

```
1  #include <stdio.h>
2
3  int main()
4  {
5
6      for(int i = 0; i < 3; i = i + 1)
7
8          printf("a\n");
9          printf("b\n");
10
11         printf("c\n");
12     }
```

3. Where are the valid places to have keyword “Break”?

### Part B (85%) Programming Exercises:

1. Write a C Program to check **if** a number is odd or even.
  - a. The program should ask the user to enter an integer via the terminal.
  - b. The expected output (*You can customize your own display*):

```
Please enter an integer number: 89
89 is an odd number
```

## c. Extra questions:

(Optional, but try to solve this question if you have programming experience)

```
Please enter an integer number: 89.8
89.8 is not an integer number, please re-enter:
```

2. Write a program to find out how many of the numbers from 1 to 100 are greater than 31, and find the sum of the natural numbers that are greater than 31.

- a. The program should have a **loop** which steps one variable (probably named **i**) over the 100 numbers.
- b. **Hint:** Inside the loop, **if i** is greater than 31, add **1** to a **second** variable (probably named **count**) which keeps track of total number of integers that are greater than 31, and add **i** to a **third** variable which keeps track of the **sum** (probably named **sum**). At the end of the program, after the loop has finished, print out the **count** and **sum**.
- c. The expected output (The sum might be wrong):

```
There are 69 numbers from 1 to 100 are greater than 31.
The sum of these 79 number is 1234.
```

3. Write a program to **read** a grade letter from user and display the equivalent description by using **switch** statement.

```
If grade is S, then print SUPER
If grade is A, then print VERY GOOD
If grade is B, then print FAIR
If grade is Y, then print ABSENT
If grade is F, then print FAILS
```

- a. The expected output:

```
Input the grade: A
You have chosen: VERY GOOD
```

*Please reference the assignment submission guide on the iLearn for submission.*