

Lab 5

Q.1 Global Vs Local variables

a.

```
#include <stdio.h>
int main () {
    /* local variable declaration */
    int a, b;
    int c;
    /* actual initialization */
    a = 10;
    b = 20;
    c = a + b;
    printf ("value of a = %d, b = %d and c = %d\n", a, b, c);
    return 0;
}
```

Output: value of a = 10, b = 20 and c = 30

b.

```
#include <stdio.h>
/* global variable declaration */
int g;
int main () {
    /* local variable declaration */

    int a, b;
    /* actual initialization */
    a = 10;
    b = 20;
    g = a + b;
    printf ("value of a = %d, b = %d and g = %d\n", a, b, g);
    return 0;
}
```

Output: value of a = 10, b = 20 and g = 30

c.

```
#include <stdio.h>

/* global variable declaration */
int g = 20;

int main () {
    /* local variable declaration */
    int g = 10;
    printf ("value of g = %d\n", g);
    return 0;
}
```

Output: value of g = 10

Q.2 Enumerated Types (enum)

```
#include<stdio.h>

enum week{Mon=10, Tue, Wed, Thur, Fri=10, Sat=16, Sun};

enum day{Mond, Tues, Wedn, Thurs, Frid=18, Satu=11, Sund};

int main() {

    printf("The value of enum week: %d\t%d\t%d\t%d\t%d\t%d\t%d\n",Mon , Tue, Wed, Thur,
    Fri, Sat, Sun);

    printf("The default value of enum day: %d\t%d\t%d\t%d\t%d\t%d\t%d",Mond , Tues, Wedn,
    Thurs, Frid, Satu, Sund);

    return 0;
}
```

Output: The value of enum week: 10 11 12 13 10 16 17
The default value of enum day: 0 1 2 3 18 11 12

Q.3 Print the Integer max and min of your machine. Print their products with and without typecasting the variables into long int. Note you will have to change the format specifier of the print statement to “%li” see the difference.

Solution:

```
#include <stdio.h>
#include <limits.h>
int main()
{
    printf("%d ", INT_MIN);
    printf("%d ", INT_MAX);
    printf("%d ", INT_MIN*INT_MAX);
    printf("%li ", (long)INT_MIN*(long)INT_MAX);

    return 0;
}
```

```
-2147483648 2147483647 -2147483648 -4611686016279904256
```

Q.4 You need to make a program that increments the input if “Odd” and decrements if “Even”. However, you are not allowed to use if-else or switch.

Solution:

```
#include <stdio.h>
int main()
{
    int n;
    scanf("%d",&n);
    (n%2==0) ? printf("%d",--n):printf("%d",++n);
    return 0;
}
```

Q.5 Take 2 integer inputs, divide them and print the result in decimals. Eg. 5/4=1.25

Solution:

```
#include <stdio.h>
int main()
{
    int n,m;
    scanf("%d %d",&n,&m);
    printf("%f",(float)n/(float)m);
    return 0;
}
```

Tasks

(1) In the similar lines to practice problem 4, the following statement

(a>b)? printf("%d", a) : printf("%d", b);

prints the maximum number among two integers *a* and *b*.

Now extend the above statement to print the maximum among three integers *a*, *b*, and *c*.

(2) What is the output of the following program:

```
#include<stdio.h>
int main() {
    int i=100;
    for(int i=0; i<=10; i++)
    { i++;
      printf("%d ", i);
    }
    printf("%d", i);
}
```

Guess the correct output without executing the program. Then compile the program and verify your answer. Write the justification for the program's output as a comment inside the program and submit the program and output.

(3) Write a C program to get the IP address of your device(Laptop or mobile).

Hint : If you type find my ip or what's my ip on your mobile or laptop browser, you will be able to find the ip address of the device. "Ipconfig" is the keyword we can type on the command prompt of laptop or desktop and will help you to find out the ip address of the device.

(4) Write a C program to RESTART your computer.