C Programming

LAB Excercises

If else #1

- Any integer is input through the keyboard.
- Write a program to find out whether it is an odd number or even number.

- Try to write this logic using conditional operator.
- (condition) ? (statement1) : (statement2);

If Else #2

- Any character is entered through the keyboard, write a program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol.
- The following table shows the range of ASCII values for various characters.
- **Characters ASCII Values**

A – Z	65 – 90
a – z	97 – 122
0 – 9	48 – 57
special symbols	0 - 47, 58 - 64, 91 - 96, 123 - 127l

Loops #3

1. Calculator Program using if else condition.
2. Calculator Program using switch statement.
3. Repeat the calculator program up to n times.
4. Start giving calculator options as long as the user wants to continue.
5. Repeat the calculator program if the user wants to continue, otherwise, quit.

Hint : The operation needs to be given as a character ‘+’,’-’,’*’,’/’. Ask the user if he wants to continue, using ‘y’ or ‘n’.

Simple loop #4

- Write a program to print all numbers from 1 to 100.
- Write a program to print all odd numbers and even numbers from 1 to 100, seperately.

Loops # 5

- Write a program to input 10 numbers and print the largest and smallest numbers out of them.

- Eg., 3,23,56,34,78,45,26,90,68,77
- Biggest Number is 90
- Smallest Number is 3

Loops # 6

- Print the following pyramids :

```
*          1          1          1          5
* *        2 2        1 2        0 1        4 4
* * *      3 3 3      1 2 3      1 0 1      3 3 3
* * * *    4 4 4 4    1 2 3 4    0 1 0 1    2 2 2 2
* * * * *  5 5 5 5 5  1 2 3 4 5  1 0 1 0 1  1 1 1 1 1
```

```
5                1
5 4              2  3
5 4 3            4  5  6
5 4 3 2          7  8  9  10
5 4 3 2 1        11 12 13 14 15
```

#7

- Write a C program to print pascal triangle. The number of rows to be printed is to be entered by the user.
- Eg : number of rows : 4
- Output :

1

1 1

1 2 1

1 3 3 1

Loops # 22

- Write a program to input a number and count the digits in it.

- Eg.

  0 - number of digits 1

  12 – number of digits 2

  155 – number of digits 3

Functions # 8

- Write the calculator program using switch statement that calls functions to perform the below actions :
  - Addition (takes two integers and returns integer)
  - Subtraction (takes two integers and returns integer)
  - Multiplication (takes two integers and returns integer)
  - Division
    - Takes two integers and returns float
    - Before dividing check if the **divisor** is zero. If it is non zero then only perform the action, otherwise print error message.

Functions # 9

```
main()
{
    int a,b;

    a = 10;
    b = 35;

    printf("%d",ADD(a,b));
}
```

```
int ADD(int a , int b)
{
    a = 30;
    b = 40;
    return (a+b);
}
```

Functions # 10

```
//char display(); // Uncomment this and try
void main()
{
      char c;
      c = display();
      printf("%c\n",c);
}

char display()    // Function definition containing char return type.
{
       int i = 0;
       i++;
       printf("%d\n", i);
       return 'a';
}
```

Functions # 11

```
main( )
{
    printf ( "\nI am in main" ) ;
    italy( ) ;
    brazil( ) ;
    argentina( ) ;
}
italy( )
{
    printf ( "\nI am in italy" ) ;
}
```

```
brazil( )
{
    printf ( "\nI am in
    brazil" ) ;
}
argentina( )
{
    printf ( "\nI am in
    argentina" ) ;
}
```

Functions # 12

```
main( )
{
    printf ( "\nI am in main" ) ;
    italy( ) ;
    printf ( "\nI am finally back
    in main" ) ;
}
italy( )
{
    printf ( "\nI am in italy" ) ;
    brazil( ) ;
    printf ( "\nI am back in italy"
    ) ;
}
```

```
brazil( )
{
    printf ( "\nI am in brazil" )
    ;
    argentina( ) ;
}
argentina( )
{
    printf ( "\nI am in
    argentina" ) ;
}
```

Functions # 13

```
main( )
{
    message( ) ;
    message( ) ;
}
message( )
{
    printf ( "\nJewel Thief!!" ) ;
}
```

Functions # 14

```
main( )
{
    message1( ) ;
    message2( ) ;
}
message2( )
{
    printf ( "\nBut the butter was bitter" ) ;
}
message1( )
{
    printf ( "\nMary bought some butter" ) ;
}
```

Functions # 15

```
main( )
{
    printf ( "\nI am in main" ) ;
    argentina( )
    {
        printf ( "\nI am in argentina" ) ;
    }
}
```

Functions # 16

```
main( )
{
int a, b, c, sum ;
printf ( "\nEnter any three
numbers " ) ;
scanf ( "%d %d %d", &a, &b, &c ) ;
sum = calsum ( a, b, c ) ;
printf ( "\nSum = %d", sum ) ;
}
```

```
calsum ( x, y, z )
int x, y, z ;
{
int d ;
d = x + y + z ;
return ( d ) ;
}
```

Functions # 17

```
fun( )
{
    char ch ;
    printf ( "\nEnter any alphabet " ) ;
    scanf ( "%c", &ch ) ;
    if ( ch >= 65 && ch <= 90 )
    return ( ch ) ;
    else
    return ( ch + 32 ) ;
}
```

```
main( )
{
Int i;
For(i=0;i<=4;i++)
    printf(“%d”,fun());
}
```

Functions # 18

```
main( )
{
    int a = 30 ;
    fun ( a ) ;
    printf ( "\n%d", a ) ;
}
fun ( int b )
{
    b = 60 ;
    printf ( "\n%d", b ) ;
}
```

Functions # 19

```
main( )
{
    float a, b ;
    printf ( "\nEnter any number " ) ;
    scanf ( "%f", &a ) ;
    b = square ( a ) ;
    printf ( "\nSquare of %f is %f", a,
    b ) ;
}
```

```
square ( float x )
{
    float y ;
    y = x * x ;
    return ( y ) ;
}
```

Functions # 20

```
#include <stdio.h>
int sum(int x, in ty);
int main(void)
{
    int a = 10,b=20,k;
    k = sum(a,b);
    printf("%d\n",k);
    k = sum(4,5);
    printf("%d\n",k);
    k = sum(a+b,b*2);
    printf("%d\n",k);
    return 0;
}
```

```
int sum(int x, int y)
{
    int s;
    s = x+ y;
    return s;
}
```

Functions # 21

```
#include<stdio.h>
// Function Declaration
void drawline(void);
int main(void)
{
drawline(); // Function Call
printf("KernelMasters");
drawline(); // Function Call
printf("Your career is our
goal");
drawline(); // Function Call
printf("\n");
return 0;
}
```

```
// Function Definition
void drawline(void)
{
int i;
printf("\n");
for(i=1;i<=80;i++)
printf("-");
printf("\n");
}
```

Functions # 23

- Write the following program :
- Write a function that takes two integers as parameters and does swapping between them.
- The function will be called from main function, pass two integers to the swapping function.

```
Main()
 {
swap(a,b);
//print values of a ,b
}
```

```
void swap(int a,int b)
{
        //swap values of a & b
        //print values of a,b
}
```