October 20, 2017 Friday

Lab 8

Functions in C

Marks: 5

Question 01:

Read a positive integer value, and compute the following sequence: If the number is even, halve it; if it's odd, multiply by 3 and add 1. Repeat this process until the value is 1, printing out each value. Finally print out how many of these operations you performed.

```
Initial value is 9

Next value is 28
Next value is 14
Next value is  7
Next value is 22
Next value is 11
Next value is 34
Next value is 17
Next value is 52
Next value is 26
Next value is 13
Next value is 40
Next value is 20
Next value is 10
Next value is  5
Next value is 16
Next value is  8
Next value is  4
Next value is  2
Final value 1, number of steps 19

If the input value is less than 1, print a message containing the word
    Error
```

Question 02:

Write a program in which user enters his NTS and Intermediate marks and your function will help student in selection of university. Based on these marks Student will be allocated a seat at different department of different university.

University Of Karchi

IT: Above 70% in Fsc. and 70 % in NTS Electronics: Above 70% in Fsc. and 60 % in NTS Telecommunication Above 70% in Fsc. and 50 % in NTS

IQRA University:

IT: 70% - 60 % in Fsc. and 50 % in NTS Chemical: 59% – 50 % in Fsc. and 50 % in NTS Computer: Above 40% and below 50 % in Fsc. and 50 % in NTS

Question 03:

Hasham is a student of computer science. He is currently self-studying programming in C language. He wants to develop a program for the purpose of reusability, in which he is performing mathematical operations like addition, subtraction, production, and division. Keep in mind, He wants to perform these mathematical operations in different programs since he may need to use any of these operations in any of the developed programs.

Question 04:

Point out the errors, if any, in the following programs:

(a)
```
main( ) {
int i = 3, j
= 4, k, l ;      k =
addmult ( i, j ) ;
l =
addmult ( i, j ) ;
printf (
"\n%d %d", k, l ) ;
}

addmult ( int ii, int jj )
{  int kk, ll ;
   kk = ii + jj ;
   ll = ii * jj ;
   return ( kk,
ll ) ;
}
```

(b)
```
main( )
{  int a ;  a =
message( ) ;
}

message( ) {
```

```
        printf ( "\nViruses are written in C" ) ;
        return ;
    }
```

(c)

```
main( ) {
float a =
15.5 ; char ch =
'C' ; printit ( a,
ch ) ;
    }

    printit ( a, ch )
    {
        printf ( "\n%f %c", a, ch ) ;
    }
```

(d)

```
main( )
    {
        message( ) ;
        message( ) ;
    }

    message( ) ; {
        printf ( "\nPraise worthy and C worthy are synonyms" ) ;
    }
```

(e)

```
main( )
    {
        let_us_c( )
        {
                printf ( "\nC is a Cimple minded language !" ) ;
                printf ( "\nOthers are of course no match !" ) ;
        }
    }
```

(f)

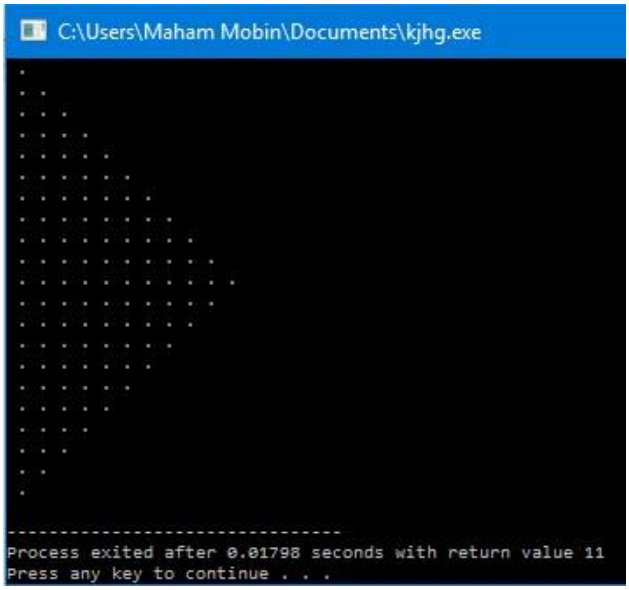
```
main( ) {
        message( message ( ) ) ;
    }

    void message( )
    {
        printf ( "\nPraise worthy and C worthy are synonyms" ) ; }
```

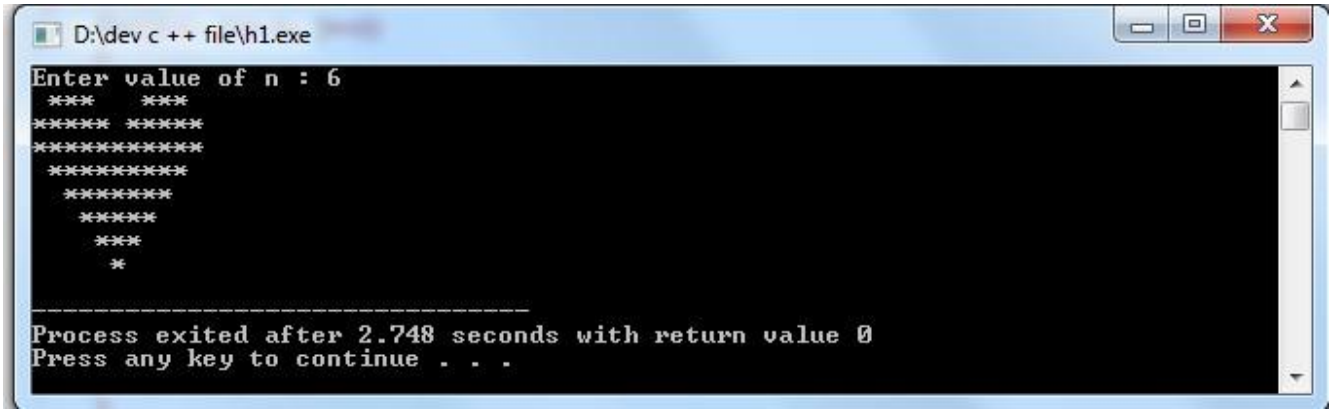
Question 05:

Write a function that takes N as argument and print shapes. Shape A) should have 2N+1 rows as shown below here N=10.

A)



B) Write a function in C Program to print heart star pattern



C) Write a function in C print half pyramid using numbers.