

National Institute of Technology, Patna



EE lab CSL (2601)

Assignment no 7

Name : Sudhanshu Ranjan

Batch : 2020-2024

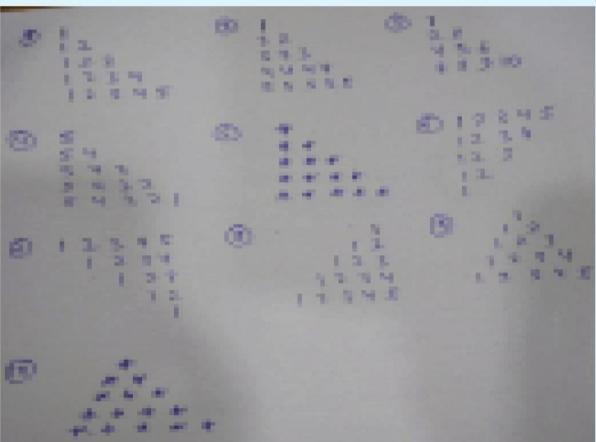
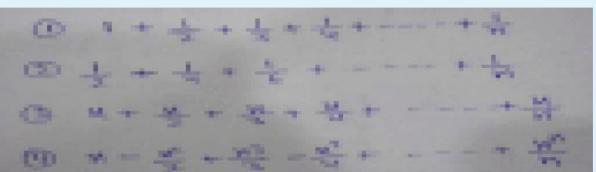
Roll no : 2002006

Class : BTECH EE

Instructor : Dr. Neha Mam



INDEX

Serial No.	Contents	Date	Remarks
1	WAP in C to convert Decimal Number to Binary Number.	02.06.2021	
2	WAP in C to convert Binary Number to Decimal Number.	02.06.2021	
3	WAP in C to check whether a number is prime or not.	02.06.2021	
4	WAP in C to check whether a number is palindrome or not.	02.06.2021	
5	WAP in C to print the following Patterns. 	02.06.2021	
6	WAP in C to print the result of the following series.. 	09.06.2021	

Q.1. WAP in C to convert Decimal number to Binary Number.

```
#include <stdio.h>
```

```
int main() {
```

```
    int a, remainder = 0, tens = 1;  
    long binary;
```

```
    printf("----- DECIMAL TO BINARY CONVERTER -----");
```

```
    printf("Enter the decimal number to convert it to binary:");  
    scanf("%d", &a);
```

```
    while (a != 0) {
```

```
        remainder = a % 2;
```

```
        a = a / 2;
```

```
        binary = binary + remainder * tens;
```

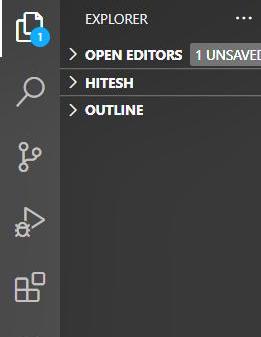
```
        tens = tens * 10;
```

```
}
```

```
    printf("The number in binary is : %ld\n", binary);
```

```
    return 0;
```

```
}
```



C: > Users > Sudhanshu Ranjan > Desktop > snake game > C decimal_binary.c > main()

```
1 #include<stdio.h>
2 int main(){
3     int a,remainder=0,tens=1;
4     long binary=0;
5     printf(" ----- DECIMAL TO BINARY CONVERTER ----- \n");
6     printf("Enter the decimal number to convert it to binary :");
7     scanf("%d",&a);
8     while(a!= 0){
9         remainder = a % 2;
10        a = a/2;
11        binary = binary + remainder*tens;
12        tens = tens * 10;
13    }
14    printf("The number in binary is : %ld \n",binary);
15    return 0;
16 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game\" ; if ($?) { gcc decimal_binary.c -o decimal_binary } ; if ($?) { ./decimal_binary }
----- DECIMAL TO BINARY CONVERTER -----
Enter the decimal number to convert it to binary :10
The number in binary is : 1010
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game\" ; if ($?) { gcc decimal_binary.c -o decimal_binary } ; if ($?) { ./decimal_binary }
----- DECIMAL TO BINARY CONVERTER -----
Enter the decimal number to convert it to binary :5
The number in binary is : 101
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game> []
```

Code
Code



Q.2. INAP in C to convert Binary Number to Decimal Number.

```
#include <stdio.h>
#include <math.h>
int main () {
```

```
    int decimal = 0, remainder ; n=0 ;
    long binary ;
```

```
    printf ("----- BINARY TO DECIMAL CONVERTER -----");
    printf (" Enter the binary number to convert it to decimal:");
    scanf ("%d", &binary);
```

```
    while (binary != 0) {
```

```
        remainder = binary % 10;
```

```
        binary = binary / 10;
```

```
        decimal = decimal + remainder * pow(2,n);
        ++ n;
```

```
}
```

```
    printf ("The number in decimal is : %d \n", decimal);
```

```
    return 0;
```

```
}
```



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C binary_to_decimal.c > main()
1 #include<stdio.h>
2 #include<math.h>
3 int main(){
4     int decimal = 0,remainder ,n = 0;
5     long binary;
6     printf(" ----- BINARY TO DECIMAL CONVERTER ----- \n");
7     printf("Enter the binary number to convert it to decimal :");
8     scanf("%d",&binary);
9     while(binary != 0){
10         remainder = binary % 10;
11         binary = binary / 10;
12         decimal = decimal + remainder * pow(2,n);
13         ++n;
14     }
15     printf("The number in decimal is : %ld \n",decimal);
16     return 0;
17 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game\" ; if ($?) { gcc binary_to_decimal.c -o binary_to_decimal } ; if ($?) { .\binary_to_decimal }
----- BINARY TO DECIMAL CONVERTER -----
Enter the binary number to convert it to decimal :101
The number in decimal is : 5
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game> []
```

Code
Code



Q.3 WAP to find whether a number is prime or not.

```
#include <stdio.h>
```

```
int main() {
```

```
    int i, n;
```

```
    int prime = 1;
```

```
    printf("Enter a number to find whether a number  
          is prime or not \n");
```

```
    scanf("%d", &n);
```

```
    for (i = 2; i < n; i++) {
```

```
        if ((n % i) == 0) {
```

```
            prime = 0;
```

```
}
```

```
}
```

```
if (prime == 1)
```

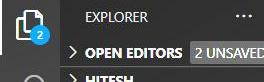
```
    printf("%d is prime number", n);
```

```
else
```

```
    printf("%d is not a prime number", n);
```

```
return 0;
```

```
}
```



C:\> Users > Sudhanshu Ranjan > Desktop > snake game > PRIME.C > main.c

```
1 #include<stdio.h>
2 int main() {
3     int i, n;
4     int prime = 1;
5     printf("Enter a number to find whether a number is prime or not\n");
6     scanf("%d", &n);
7
8     for(i= 2; i < n; i++) {
9         if((n % i) == 0) {
10             prime = 0;
11         }
12     }
13     if (prime == 1)
14         printf("%d is prime number.", n);
15     else
16         printf("%d is not a prime number.", n);
17     return 0;
18 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game\" ; if (\$?) { g++ PRIME.C -o PRIME } ; if (\$?) { .\PRIME }

Enter a number to find whether a number is prime or not

23

23 is prime number.

PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

Code

Code



Type here to search



Q.4. WAP in C to check whether the number is Palindrome or not ?

```
#include <stdio.h>
#include <math.h>
int main () {
```

```
    int remainder, number, new_num = 0, given_number;
```

```
    printf ("-----Palindrome checker ----- \n");
```

```
    printf ("Enter the number to check whether a number  
is palindrome or not : ");
```

```
    scanf ("%d", &number);
```

```
    given_number = number;
```

```
    while (number != 0) {
```

```
        remainder = number % 10;
```

```
        number = number / 10;
```

```
        new_num = new_num * 10 + remainder;
```

```
}
```

```
if (given_number == new_num)
```

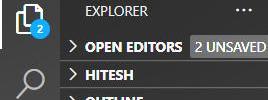
```
    printf ("The number %d is palindrome \n", number);
```

```
else
```

```
    printf ("The number %d is not Palindrome \n", number);
```

```
return 0;
```

```
}
```



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C palindrome.c > main()
1 #include<stdio.h>
2 #include<math.h>
3 int main(){
4     int remainder ,number, new_num = 0,given_number;
5     printf(" ----- Palindrome Checker ----- \n");
6     printf("Enter the number to check whether a number is palindrome or not :");
7     scanf("%d",&number);
8     given_number = number ;
9     while( number != 0){
10         remainder = number % 10;
11         number = number / 10;
12         new_num = new_num*10 + remainder;
13     }
14     if( given_number == new_num)
15     printf("The number %d is palindrome \n",number);
16     else
17     printf("The number %d is not palindrome \n",number);
18 return 0;
19 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if (\$?) { gcc palindrome.c -o palindrome } ; if (\$?) { .\palindrome }

----- Palindrome Checker -----

Enter the number to check whether a number is palindrome or not :10101

The number 0 is palindrome

PS C:\Users\Sudhanshu Ranjan\Desktop\snake game> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if (\$?) { gcc palindrome.c -o palindrome } ; if (\$?) { .\palindrome }

----- Palindrome Checker -----

Enter the number to check whether a number is palindrome or not :1011

The number 0 is not palindrome

PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

Code

Code



Q.5. WAP in C to Print the following Patterns:-

① 1

1 2

1 2 3

1 2 3 4

1 2 3 4 5



```
#include <stdio.h>
```

```
int main () {
```

```
    int n=5 , i, k ;
```

```
    for ( i=1 ; i<=n ; i++ ) {
```

```
        for ( k=1 ; k <= i ; k++ )
```

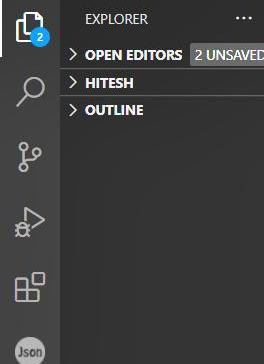
```
            printf ("%d", k);
```

```
            printf ("\n");
```

```
}
```

```
return 0;
```

```
}
```



C:\> Users > Sudhanshu Ranjan > Desktop > snake game > C question5_1.c > main()

```
1 #include<stdio.h>
2 int main(){
3     int n=5,i,k;
4     for( i = 1; i<=n;i++){
5         for( k = 1; k<=i;k++)
6             printf("%d",k);
7             printf("\n");
8     }
9 }
10 return 0;
11 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_1.c -o question5_1 }
; if ($?) { .\question5_1 }
1
12
123
1234
12345
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

Code
Code



5. ii>

1

2 2

3 3 3

4 4 4 4

5 5 5 5 5

#include <stdio.h>

int main() {

int n=5, i, k;

for (i=1 ; i<=n; i++) {

for (k=1 ; k<=i ; k++)

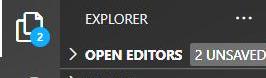
printf("%d", i);

printf("\n");

}

return 0;

}



...

alindrome.c

C PRIME.C

C half_pyramid.c

C opposite_pyramid.c

C armstrong_number.c

C question5_1.c

C question5_2.c X

C Hcf.c

C lcm.c



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C question5_2.c > main()
1 #include<stdio.h>
2 int main(){
3     int n=5,i,k;
4     for( i = 1; i<=n;i++){
5         for( k = 1; k<=i;k++)
6             printf("%d",i);
7             printf("\n");
8     }
9 }
10 return 0;
11 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL



Windows PowerShell

Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_2.c -o question5_2 }
; if ($?) { .\question5_2 }
```

1

22

333

4444

55555

PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

Code

Code



Type here to search



5.) ③

1
2 3
4 5 6
7 8 9 10

#include <stdio.h>

int main () {

int n=4, i, k, l=0;

for (i=1; i<=n; i++) {

 for (k=1; k<=i; k++) {
 ++l;

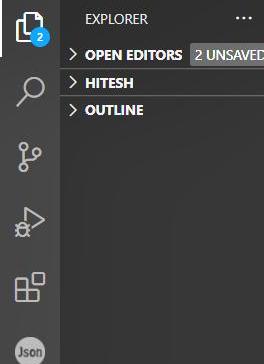
printf ("%d", l); }

printf ("\n");

}

return 0;

{



C:\> Users > Sudhanshu Ranjan > Desktop > snake game > C:\question5_3.c > main()

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

Press + G keys to start

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_3.c -o question5_3 }
; if ($?) { .\question5_3 }
1
2 3
4 5 6
7 8 9 10
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

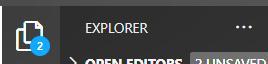
Code
Code



5.) ④

5
5 4
5 4 3
5 4 3 2
5 4 3 2 1

```
#include <stdio.h>
int main() {
    int i, l=0;
    for( i=5; i>=1; i--) {
        for( int t=5; t>=i; t--) {
            printf("%d", l);
        }
        printf("\n");
    }
    return 0;
}
```



e.c PRIME.C half_pyramid.c opposite_pyramid.c armstrong_number.c question5_1.c question5_2.c question5_3.c question5_4.c

C: > Users > Sudhanshu Ranjan > Desktop > snake game > question5_4.c > main()

```
1 #include<stdio.h>
2 int main(){
3     int i,l=0;
4     for( i = 5; i>=1;i--){
5         for(int l = 5; l >= i;l--){
6             printf("%d ",l);
7         }
8         printf("\n");
9     }
10    return 0;
11 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_4.c -o question5_4 }
; if ($?) { .\question5_4 }
5
5 4
5 4 3
5 4 3 2
5 4 3 2 1
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

Code
Code



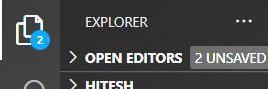
Type here to search



5.) ⑤

*
**


```
#include <stdio.h>
int main() {
    int n=5,i,k;
    for (i=1 ; i<=n ; i++) {
        for (int k=1 ; k<=i ; k++)
            printf ("* ");
        printf ("\n");
    }
    return 0;
}
```



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C half_pyramid.c > main()
1 #include<stdio.h>
2 int main(){
3     int n=5,i,k;
4     for( i = 1; i<=n;i++){
5         for(int k = 1; k<=i;k++)
6             printf("* ");
7             printf("\n");
8     }
9 }
10 return 0;
11 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

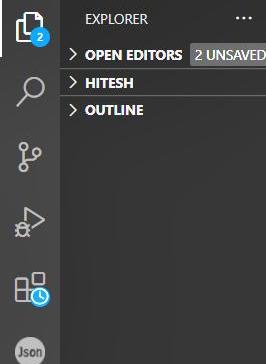
```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc half_pyramid.c -o half_pyramid
} ; if ($?) { .\half_pyramid }
*
*
*
*
*
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

Code
Code



5. > ⑥ 1 2 3 4 5
1 2 3 4
1 2 3
1 2
1

```
#include <stdio.h>
int main() {
    int i, l = 0;
    for (i = 5; i >= 1; i--) {
        for (int l = 1; l <= i; l++) {
            printf ("%d", l);
        }
        printf ("\n");
    }
    return 0;
}
```



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > question5_6.c > main()
1 #include<stdio.h>
2 int main(){
3     int i,l=0;
4     for( i = 5; i>=1;i--){
5         for(int l = 1; l <= i;l++){
6             printf("%d ",l);
7         }
8         printf("\n");
9     }
10    return 0;
11 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code + ^ x

Windows PowerShell

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_6.c -o question5_6 } ; if ($?) { .\question5_6 }
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```



5.) ⑦

1	2	3	4	5
1	2	3	4	
1	2	3		
1	2			
1				

```
#include <stdio.h>
```

```
int main() {
```

```
    int n = 5, i, k, l;
```

```
    for (i = 5; i >= 1; i--) {
```

```
        for (k = 1; k <= 5 - i; k++)
```

```
    {
```

```
        printf(" ");
```

```
}
```

```
        for (l = 1; l <= i; l++) {
```

```
            printf("%d", l);
```

```
}
```

```
        printf("\n");
```

```
}
```

```
    return 0;
```

```
}
```



EXPLORER ... C palindrome.c G PRIME.C C half_pyramid.c C question5_6.c C question5_7.c X C opposite_pyramid.c C armstrong_number.c C question5_1.c C quest > [] ...

C: > Users > Sudhanshu Ranjan > Desktop > snake game > C question5_7.c > main()

```
1 #include<stdio.h>
2 int main(){
3     int n=5,i,k,l;
4     for( i = 5; i>=1;i--){
5         for ( k = 1; k<=5-i; k++)
6         {
7             printf(" ");
8         }
9         for(l=1;l<=i;l++){
10            printf("%d",l);
11        }
12        printf("\n");
13    }
14    return 0;
15 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_7.c -o question5_7 }
: if ($?) { .\question5_7 }
12345
1234
123
12
1
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

[] Code
[] Code

5) 8)
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

```
#include <stdio.h>
int main() {
    int i, k, l;
    for (i = 1; i <= 5; i++) {
        for (k = 5; k > i; k--) {
            printf("%");
        }
        for (l = 1; l <= i; l++) {
            printf("%d", l);
        }
        printf("\n");
    }
    return 0;
}
```

 EXPLORER ... : series1.c ● C full_pyramid.c C question5_8.c X C decimal_binary.c C binary_to_decimal.c ● C palindrome.c C PRIME.C C half_pyramid.c C question5_6.c D □ ...
OPEN EDITORS 2 UNSAVED
HITESH
OUTLINE

```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C question5_8.c > main()
1 #include<stdio.h>
2 int main(){
3     int i,k,l;
4     for(i=1;i<=5;i++){
5         for(k=5;k>i;k--){
6             printf(" ");
7         }
8         for(l=1;l<=i;l++){
9             printf("%d",l);
10        }
11        printf("\n");
12    }
13    return 0;
14 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_8.c -o question5_8 }
; if ($?) { .\question5_8 }
1
12
123
1234
12345
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

powershell
Code

5.) ⑨

```
    1  
   1 2  
  1 2 3  
1 2 3 4  
1 2 3 4 5
```

```
#include <stdio.h>
```

```
int main() {
```

```
    int i, k, l;
```

```
    for (i=1; i<=5; i++) {
```

```
        for (k=5; k>i; k--) {
```

```
            printf(" ");
```

```
        }
```

```
        printf("%d", k); printf("ad ", l);
```

```
}
```

```
    printf("\n");
```

```
}
```

```
return 0;
```

```
}
```



EXPLORER ... C star1.c C series1.c ● C full_pyramid.c C question5_8.c C question5_9.c X C decimal_binary.c C binary_to_decimal.c ● C palindrome.c G PRIME.C > □ ...

C: > Users > Sudhanshu Ranjan > Desktop > snake game > C question5_9.c > main()

```
1 #include<stdio.h>
2 int main(){
3     int i,k,l;
4     for(i=1;i<=5;i++){
5         for(k=5;k>i;k--){
6             printf(" ");
7         }
8         for(l=1;l<=i;l++){
9             printf("%d ",l);
10        }
11    }
12    printf("\n");
13 }
14 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc question5_9.c -o question5_9 }
; if ($?) { .\question5_9 }
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

powershell
Code

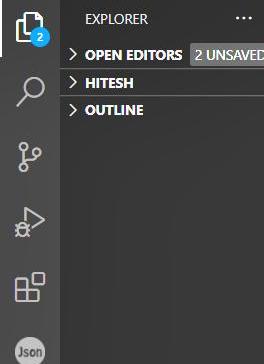


5.) (D)

*

* * * *
* * * * * *
* * * * * *

```
#include <stdio.h>
int main() {
    int n=5, i, k;
    for (i=1; i<=n; i++) {
        for (int j=5; j>=i; j--)
            printf(" ");
        for (k=1; k<=i; k++)
            printf("*");
        for (int m=2; m<k; m++)
            printf("*");
        printf("\n");
    }
    return 0;
}
```



C: > Users > Sudhanshu Ranjan > Desktop > snake game > full_pyramid.c > main()

```
1 #include<stdio.h>
2 int main(){
3     int n=5,i,k;
4     for( i = 1; i<=n;i++){
5         for(int j = 5; j >= i; j--)
6             printf(" ");
7             for( k= 1;k<=i;k++)
8                 printf("#");
9                 for( int m = 2; m<k;m++)
10                     printf("*");
11                     printf("\n");
12     }
13     return 0;
14 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell

Copyright (c) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc full_pyramid.c -o full_pyramid
} ; if ($?) { .\full_pyramid }
```

```
*
 ***
 ****
 *****
 ******
 *****
```

```
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

Code

Code



Q. 6. WAP in C to Print the result of following series.

$$\textcircled{1} \quad 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots + \frac{1}{n}$$

```
#include <stdio.h>
```

```
int main() {
```

```
    int n;
```

```
    double sum = 0.0, i;
```

```
    printf("Enter the number n : ");
```

```
    scanf("%d", &n);
```

```
    for (i = 1; i <= n; i++) {
```

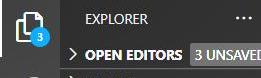
```
        sum = sum + 1/i;
```

```
}
```

```
    printf("Sum is : %f", sum);
```

```
    return 0;
```

```
}
```



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C pattern_1.c > main()
1 #include<stdio.h>
2 int main(){
3     int n;
4     double sum = 0.0,i;
5     printf("Enter the number n :");
6     scanf("%d",&n);
7
8     for( i =1;i<=n;i++){
9         sum = sum + 1/i;
10    }
11    printf("sum is : %f ",sum);
12    return 0;
13 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc pattern_1.c -o pattern_1 } ; if ($?) { .\pattern_1 }
Enter the number n :5
sum is : 2.28333
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

Code

Code



$$Q.6. \textcircled{a} \quad \frac{1}{2} + \frac{1}{4} + \frac{1}{6} + \dots + \frac{1}{n}$$

```
#include <stdio.h>
```

```
int main() {
```

```
    int n;
```

```
    double sum = 0.0, i;
```

```
    printf ("Enter the number n : ");
```

```
    scanf ("%d", &n);
```

```
    for (i=1 ; i<=n ; i++) {
```

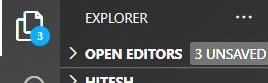
```
        sum = sum + 1/(2*i);
```

```
}
```

```
    printf ("sum is : %f", sum);
```

```
    return 0;
```

```
}
```



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C pattern_2.c > main()
1 #include<stdio.h>
2 int main(){
3     int n;
4     double sum = 0.0,i;
5     printf("Enter the number n :");
6     scanf("%d",&n);
7
8     for( i =1;i<=n;i++){
9         sum = sum + 1/ (2 * i);
10    }
11    printf("sum is : %f ",sum);
12    return 0;
13 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell <https://aka.ms/pscore6>
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if (\$?) { gcc pattern_2.c -o pattern_2 } ; if (\$?) { .\pattern_2 }
Enter the number n :5
sum is : 1.141667
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

Code
Code



$$\text{Q.6. } \textcircled{3} \quad x + \frac{x}{2} + \frac{x}{3} + \frac{x}{4} + \dots + \frac{x}{n}$$

```
#include <stdio.h>
```

```
int main() {
```

```
    int n, x;
```

```
    double sum = 0.0, i;
```

```
    printf ("Enter the number - n : ");
```

```
    scanf ("%d", &n);
```

```
    printf ("Enter the number x : ");
```

```
    scanf ("%d", &x);
```

```
    for (i=1; i<=n; i++) {
```

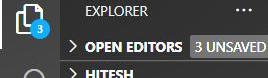
```
        sum = sum + x/i;
```

```
}
```

```
    printf ("sum is : %f", sum);
```

```
    return 0;
```

```
}
```



C: > Users > Sudhanshu Ranjan > Desktop > snake game > C pattern_3.c > main()

```
1 #include<stdio.h>
2 int main(){
3     int n,x;
4     double sum = 0.0,i;
5     printf("Enter the number n :");
6     scanf("%d",&n);
7     printf("Enter the number x :");
8     scanf("%d",&x);
9
10    for( i =1;i<=n;i++){
11        sum = sum + x/i;
12    }
13    printf("sum is : %f ",sum);
14    return 0;
15 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc pattern_3.c -o pattern_3 } ; if ($?) { .\pattern_3 }
Enter the number n :5
Enter the number x :2
sum is : 4.566667
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

Code
Code

$$\text{Q.6. } (4) \quad r = \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \dots + \frac{x^n}{n}$$

```
#include <stdio.h>
```

```
#include <math.h>
```

```
int main() {
```

```
    int n, x;
```

```
    double sum = 0.0, i;
```

```
    printf ("Enter the number n : ");
```

```
    scanf ("%d", &n);
```

```
    printf ("Enter the number x : ");
```

```
    scanf ("%d", &x);
```

```
    for (i=1; i<=n; i++) {
```

```
        sum = sum - pow (-1, i) * pow (x, i) / i;
```

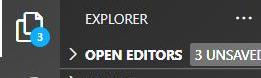
```
}
```

```
    printf ("sum is : %f", sum);
```

```
    return 0;
```

```
}
```

your writing partner



```
C: > Users > Sudhanshu Ranjan > Desktop > snake game > C pattern_4.c > main()
1 #include<stdio.h>
2 #include<math.h>
3 int main(){
4     int n,x;
5     double sum = 0.0,i;
6     printf("Enter the number n :");
7     scanf("%d",&n);
8     printf("Enter the number x :");
9     scanf("%d",&x);
10
11    for( i =1;i<=n;i++){
12        sum = sum + pow(-1,i)*pow(x,i)/i;
13    }
14    printf("sum is : %f ",sum);
15    return 0;
16 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS D:\C++Full course\hitesh> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if ($?) { gcc pattern_4.c -o pattern_4 } ; if ($?) { .\pattern_4 }
Enter the number n :5
Enter the number x :2
sum is : 5.066667
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>
```

Code

Code

