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A-28

LAB Assignment 6

1. WAP to print the following pattern for n rows. Ex. for n=5 rows

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

Program:-

```c
#include <stdio.h>

int main(){
    int i3439 ,j3439 ,n3439;
    printf("\n\nEnter the number of rows :");
    scanf("%d", &n3439);
    if (n3439 < 1){
        printf("Invalid Input");
    }
    for (i3439 = 1 ; i3439 <= n3439 ; i3439++){
        for(j3439=1 ; j3439 <= i3439 ; j3439++){
            printf("* ");
        }
        printf("\n");
    }
    printf("\n");
    return 0;
}
```

Output:

```
Enter the number of rows :5
*
* *
* * *
* * * *
* * * * *

PS C:\Users\Prasanna Dhungana\OneDrive\Des
```

2. WAP to print the following pattern for n rows. Ex. for n=6 rows

0
1 0
0 1 0
1 0 1 0
0 1 0 1 0
1 0 1 0 1 0

Program:-

```c
#include <stdio.h>

int main(){
    //program to display binary patterns.
    int i3439 ,j3439 ,n3439;
    printf("\n\nEnter the number of rows :");
    scanf("%d", &n3439);
    if (n3439 < 1){
        printf("Invalid Input");
    }
    for (i3439 = 1 ; i3439 <= n3439 ; i3439++){
        for(j3439 = i3439 ; j3439 >= 1 ; j3439--){
            if (j3439 % 2 ==0){
                printf("1 ");
            }
            else{
                printf("0 ");
            }
        }
        printf("\n");
    }
    return 0;
}
```

Output:-

```
Enter the number of rows :6
0
1 0
0 1 0
1 0 1 0
0 1 0 1 0
1 0 1 0 1 0
PS C:\Users\Prasanna Dhungana\O
ktop\2nd sem\21053439_A28\LAB06
```

3. WAP to print the following pattern for n rows. Ex. for n=5 rows

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

Program:-

```
#include <stdio.h>

int main(){
    //program to display spaced * pattern.
    int i3439 , j3439 , k3439 , n3439;
    printf("\n\nEnter the number of rows :");
    scanf("%d", &n3439);
    if (n3439 < 1){
        printf("Invalid Input");
    }
    for (i3439 = 1 ; i3439 <= n3439 ; i3439++){
        for(k3439 = (n3439-i3439) ; k3439 >= 1 ; k3439--){
        printf(" ");
        }
        for(j3439=1 ; j3439 <= i3439 ; j3439++){
            printf("* ");
        }
        printf("\n");
    }
    printf("\n");
    return 0;
}
```

Output:-

```
Enter the number of rows :5
    *
   * *
  * * *
 * * * *
* * * * *

PS C:\Users\Prasanna Dhungana\On
```

4. WAP to check whether a number n is a prime number or not.

Program:-

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

int main(){
    //program to display whether the input program is prime or not.
    int i3439 ,j3439 ,n3439 ,flag3439 = 0;
    printf("\n\nEnter the number :");
    scanf("%d", &n3439);
    if (n3439 <= 1){
        printf("%d is neither prime nor composite.\n\n",n3439);
        flag3439 = 1;
    }
    if (n3439 ==2){
        printf("2 is a prime number.\n\n");
        flag3439 = 1;
    }
    for (i3439 = 2 ; i3439 <= sqrt(n3439) ; i3439++){
        if (n3439 %i3439 == 0){
            printf("%d is a composite number.\n\n",n3439);
            flag3439 = 1;
            break;
            return 0;
        }
        }
        if (flag3439 == 0){
            printf("%d is prime number.\n\n",n3439);
        }
    return 0;
}
```

Output:-

```
esktop\2nd sem\21053439_A28\LAB06\" ; if (
prime.c -o LA6_4_prime } ; if ($?) { .\LA6


Enter the number :4
4 is a composite number.

PS C:\Users\Prasanna Dhungana\OneDrive\Des
53439_A28\LAB06> cd "c:\Users\Prasanna Dhu
esktop\2nd sem\21053439_A28\LAB06\" ; if (
deRunnerFile.c -o tempCodeRunnerFile } ; i
odeRunnerFile }


Enter the number :5
5 is prime number.

PS C:\Users\Prasanna Dhungana\OneDrive\Des
53439_A28\LAB06> cd "c:\Users\Prasanna Dhu
esktop\2nd sem\21053439_A28\LAB06\" ; if (
deRunnerFile.c -o tempCodeRunnerFile } ; i
odeRunnerFile }


Enter the number :101
101 is prime number.

PS C:\Users\Prasanna Dhungana\OneDrive\Des
53439_A28\LAB06>
```

5. WAP to check whether a number n is a prime number or not.

Program:-

```c
#include <stdio.h>

int main(){
    //program to display fibonacci sequence.
    int i3439, n3439, a3439 = 1, b3439 = 1, temp3439;
    printf("\n\nEnter the number of terms in the sequence :");
    scanf("%d", &n3439);
    if (n3439 < 2){
        printf("Invalid Input");
    }
    else{
        printf("1, 1");
    }
    for (i3439 = 2 ; i3439 <= n3439 ; i3439++){
        temp3439 = b3439;
        b3439 = a3439 + b3439;
        a3439 = temp3439;
        printf(", %d" ,b3439);
    }
    return 0;
}
```

Output:-

```
Enter the number of terms in the sequence :10
1, 1, 2, 3, 5, 8, 13, 21, 34, 55
PS C:\Users\Prasanna Dhungana\OneDrive\Desktop\2nd sem\2105
```

6.WAP to sum the following series S=1+(1+2)+(1+2+3)+...+(1+2+3+...+n)

Program:-

```c
#include <stdio.h>

int main(){
    //program to display the sum of the series.
    int i3439 ,j3439 ,n3439 , sum3439 = 0;
    printf("\n\nEnter the last term of the series :");
    scanf("%d", &n3439);
    if (n3439 < 0){
        printf("Invalid Input");
    }
    for (i3439 = 1 ; i3439 <= n3439 ; i3439++){
        for(j3439=1 ; j3439 <= i3439 ; j3439++){
            sum3439 += j3439 ;
        }
    }
    printf("The sum of series upto %d is %d .\n\n", n3439, sum3439);
    return 0;
}
```

Output:-

```
PS C:\Users\Prasanna Dhungana\OneDrive\Desktop\2nd sem\21053439_A28> cd
pCodeRunnerFile.c -o tempCodeRunnerFile } ; if ($?) { .\tempCodeRunnerFi


Enter the last term of the series :5
The sum of series upto 5 is 35 .

PS C:\Users\Prasanna Dhungana\OneDrive\Desktop\2nd sem\21053439_A28\LAB0
cc tempCodeRunnerFile.c -o tempCodeRunnerFile } ; if ($?) { .\tempCodeRu


Enter the last term of the series :10
The sum of series upto 10 is 220 .

PS C:\Users\Prasanna Dhungana\OneDrive\Desktop\2nd sem\21053439_A28\LAB0
```

7.WAP to display the reverse of a number entered through keyboard

Program:-

```c
#include <stdio.h>

int main(){
    //program to display the reverse of the number.
    int n3439, out3439 = 0, temp3439 =0;
    printf("\n\nEnter the number to be reversed :");
    scanf("%d", &n3439);
    while (n3439 != 0){
        temp3439 = (n3439 % 10);
        out3439 = (out3439 * 10) + temp3439 ;
        n3439 /= 10;
    }
    printf("The reversed number is %d. \n\n",out3439);
    printf("\n\n");
    return 0;
}
```

Output:-

```
Enter the number to be reversed :2569
The reversed number is 9652.



cc LA6_7_ReverseOfTheNum.c -o LA6_7_Reverse


Enter the number to be reversed :5298
The reversed number is 8925.



PS C:\Users\Prasanna Dhungana\OneDrive\Desk
```

8.WAP to check whether an integer number is an Armstrong number or not! Note that, an Armstrong Number is a number that is the sum of its own digits each raised to the power of the number of digits in that number.
Example: 153 = $1^3 + 5^3 + 3^3$, 1634 = $1^4 + 6^4 + 3^4 + 4^4$, etc.

Program:-

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

int main(){
    //program to display whether the number is an armstrong number or not.
    int n3439, out3439 = 0 , count3439 =0, temp3439=0, temp23439 =0 ,
o3439=0;
    printf("\n\nEnter the number to be checked for :");
    scanf("%d", &n3439);
    temp3439 = n3439;
    o3439 = n3439;
    while (n3439 != 0){
        count3439 +=1 ;
        n3439 /= 10;
    }
    while (temp3439 != 0){
        temp23439 = (temp3439 % 10);
        out3439 += pow(temp23439,count3439) ;
        temp3439 /= 10;
    }
    if (out3439 == o3439){
       printf("The number %d is an armstrong  number. \n\n",o3439);
    }
    else{
        printf("The number %d is not an armstrong  number. \n\n",o3439);
    }
    return 0;
}
```

Ouput:-

```
_8_ArmstrongNumber.c -o LA6_8_ArmstrongNumber } ; if ($?) { .\


Enter the number to be checked for :1634
The number 1634 is a armstrong  number.

PS C:\Users\Prasanna Dhungana\OneDrive\Desktop\2nd sem\2105343
cc LA6_8_ArmstrongNumber.c -o LA6_8_ArmstrongNumber } ; if ($?


Enter the number to be checked for :235
The number 235 is not a armstrong  number.

PS C:\Users\Prasanna Dhungana\OneDrive\Desktop\2nd sem\2105343
```