

## Assignment-2

- 1) C program to display the n terms of odd natural numbers and their sum

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

//Write a C program to display the n terms of odd natural numbers and their sum//
int main() {
    int n, i, sum = 0;

    printf("Input number of terms: ");
    scanf("%d", &n);

    printf("The odd numbers are:");
    for (i = 1; i <= n; i++) {
        int oddNumber = 2 * i - 1;
        printf(" %d", oddNumber);
        sum += oddNumber;
    }

    printf("\nThe Sum of odd Natural Numbers up to %d terms: %d\n", n, sum);

    return 0;
}
```

Output

```
Input number of terms: 23
The odd numbers are: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45
The Sum of odd Natural Numbers up to 23 terms: 529
```

2) Write a program in C to make a pyramid pattern with numbers increased by 1.

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

```
#include <conio.h>
```

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

```
//Write a program in C to make a pyramid pattern with numbers increased by 1.//
```

```
int main() {
```

```
    int n, num = 1;
```

```
    printf("Enter the number of rows for the pyramid: ");
```

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

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

```
        for (int j = 1; j <= i; j++) {
```

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

```
            num++;
```

```
        }
```

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

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

```
    }
```

```
    return 0;
```

```
}
```

```
Enter the number of rows for the pyramid: 5
1
2   3
4   5   6
7   8   9   10
11  12  13  14  15
```

3) Write a program in C to convert a decimal number into octal without using an array

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

```
#include <conio.h>
```

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

```
//Write a program in C to convert a decimal number into octal without using an array//
```

```
int main() {
```

```
    int decimalNumber, quotient, octalNumber = 0, place = 1;
```

```
    printf("Enter a number to convert: ");
```

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

```
    quotient = decimalNumber;
```

```
    while (quotient > 0) {
```

```
        int remainder = quotient % 8;
```

```
        octalNumber += remainder * place;
```

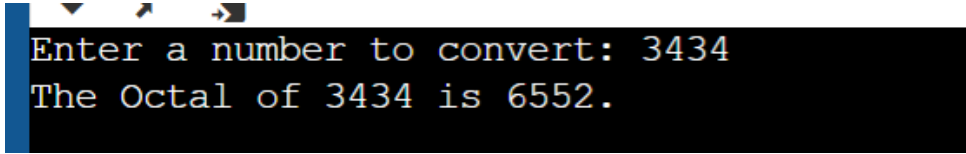
```
        place *= 10;
```

```
        quotient /= 8;
```

```
    }
```

```
    printf("The Octal of %d is %d.\n", decimalNumber, octalNumber);
```

```
    return 0;
}
```



```
Enter a number to convert: 3434
The Octal of 3434 is 6552.
```

4) Write a program in C to calculate and print the electricity bill of a given customer. The customer ID, name, and unit consumed by the user should be captured from the keyboard to display the total amount to be paid to the customer.

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

int main() {
    int customerID, unitConsumed;
    char customerName[50];
    float totalAmount, surcharge = 0.0;

    printf("Enter Customer ID: ");
    scanf("%d", &customerID);

    printf("Enter Customer Name: ");
    scanf("%[^\n]s", customerName);

    printf("Enter Units Consumed: ");
    scanf("%d", &unitConsumed);

    if (unitConsumed <= 199)
```

```
    totalAmount = unitConsumed * 1.20;
else if (unitConsumed >= 200 && unitConsumed < 400)
    totalAmount = unitConsumed * 1.50;
else if (unitConsumed >= 400 && unitConsumed < 600)
    totalAmount = unitConsumed * 1.80;
else
    totalAmount = unitConsumed * 2.00;

if (totalAmount > 400)
    surcharge = totalAmount * 0.15;

if (totalAmount < 100)
    totalAmount = 100;

totalAmount += surcharge;

printf("Customer IDNO: %d\n", customerID);
printf("Customer Name: %s\n", customerName);
printf("Unit Consumed: %d\n", unitConsumed);
printf("Amount Charges @Rs. %.2f per unit: %.2f\n", totalAmount / unitConsumed, totalAmount -
surcharge);
printf("Surcharge Amount: %.2f\n", surcharge);
printf("Net Amount Paid By the Customer: %.2f\n", totalAmount);

return 0;
}
```

```
Enter Customer ID: 24324
Enter Customer Name:
Piyush
Enter Units Consumed: 790
Customer IDNO: 24324
Customer Name: Piyush
Unit Consumed: 790
Amount Charges @Rs. 2.30 per unit: 1580.00
Surcharge Amount: 237.00
Net Amount Paid By the Customer: 1817.00
```

5) C program to find the third angle of a triangle if two angles are given.

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

```
#include <conio.h>
```

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

```
//C program to find the third angle of a triangle if two angles are given.//
```

```
int main()
```

```
{
```

```
    float a,b,c;
```

```
    printf("enter both angles ");
```

```
    scanf("%f,%f",&a,&b);
```

```
    c=180-(a+b);
```

```
    printf("Third angle is %.2f",c);
```

```
    return 0;
```

```
enter both angles 23,67
```

```
Third angle is 90.00
```

```
...Program finished with exit code 0
```

```
Press ENTER to exit console.
```

6) Write a C program to find the sum of an A.P. series

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

```
#include<conio.h>
```

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

```
//Write a C program to find the sum of an A.P. series.//
```

```
int main()
```

```
{
```

```
    int start,stop,jump,sum=0;
```

```
    printf("Enter Start Value : ");
```

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

```
        printf("Enter Stop Value : ");
```

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

```
        printf("Enter jump Value : ");
```

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

```
    for(int i=start;i<=stop;i=jump+i)
```

```
    {
```

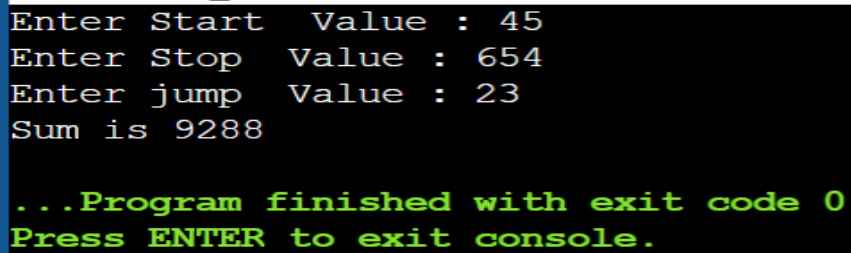
```
        sum=sum+i;
```

```
    }
```

```
printf("Sum is %d",sum);
```

```
return 0;
```

```
}
```

A screenshot of a console window with a black background and white and green text. The text shows the program's execution flow: it prompts for 'Start Value' (45), 'Stop Value' (654), and 'jump Value' (23), then displays 'Sum is 9288'. At the end, it shows a green message: '...Program finished with exit code 0' and 'Press ENTER to exit console.'

```
Enter Start Value : 45
Enter Stop Value : 654
Enter jump Value : 23
Sum is 9288

...Program finished with exit code 0
Press ENTER to exit console.
```

7) Write a program in C to display a pattern like a diamond.

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

```
#include<conio.h>
```

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

```
//Write a program in C to display a pattern like a diamond.//
```

```
int main() {
```

```
    int n, i, j;
```

```
    printf("Enter the number of rows for the diamond pattern: ");
```

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

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

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

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

```
        }
```

```
        for (j = 1; j <= 2 * i - 1; j++) {
```

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

```
        }
```

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

```
    }
```

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

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



```

        printf(" ");
    }
    for (j = 1; j <= 2 * i - 1; j++) {
        printf("*");
    }
    printf("\n");
}
return 0;
}

```

The screenshot shows a terminal window with a black background and a blue vertical bar on the left. The text in the terminal is as follows:

```

Enter the number of rows for the diamond pattern: 7
      *
     ***
    *****
   *********
  ***********
 *****
*****
*****
 *****
  *****
   *****
    *****
     ***
      *

```

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