Lab 3

Name:Anurag Chowdhury

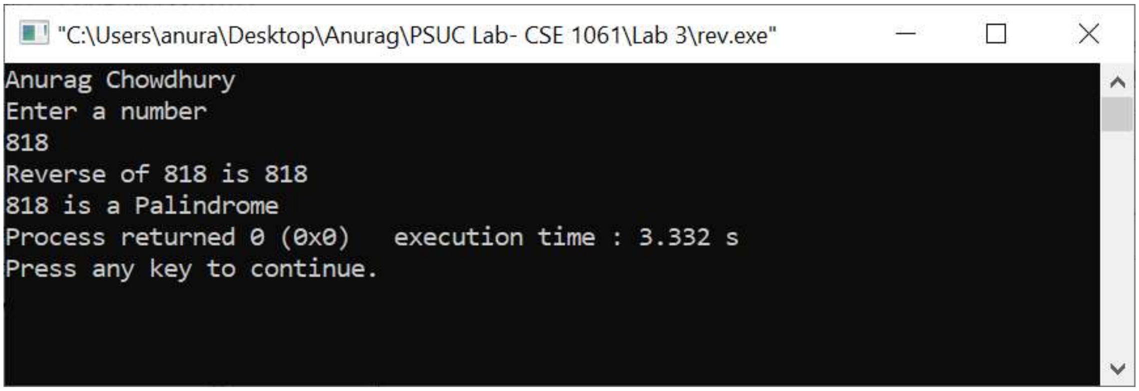
Section M: Roll No. 22

Reg No.:200905238

30/08/2021

1.Reverse a given number and check if it is a palindrome or not. (use while loop)

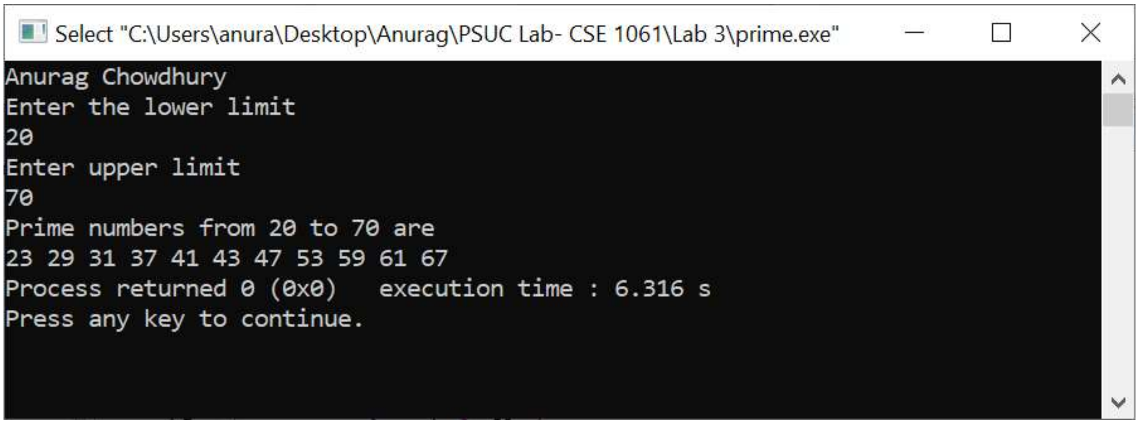
```
//Reverse a given number and check if it is a palindrome or not. (use while loop)
#include<stdio.h>
int main(){
    int n;
    printf("Anurag Chowdhury\n");
    printf("Enter a number\n");
    scanf("%d",&n);
    int temp=n;
    int rem,rev=0;
    while(temp>0){
        rem=temp%10;
        temp=temp/10;
        rev=rev*10+rem;
    }
    printf("Reverse of %d is %d\n",n,rev)
    if(rev==n)
        printf("%d is a Palindrome",n);
    else
        printf("%d is not a Palindrome",n);
    return 0;

}
```


"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 3\rev.exe"

```
Anurag Chowdhury
Enter a number
818
Reverse of 818 is 818
818 is a Palindrome
Process returned 0 (0x0)   execution time : 3.332 s
Press any key to continue.
```

2. Generate prime numbers between 2 given limits. (use while loop)

```
//Generate prime numbers between 2 given limits.(use while loop)

#include<stdio.h>

#include<math.h>

#include<stdlib.h>

int main(){

    printf("Anurag Chowdhury\n");

    printf("Enter the lower limit\n");

    int l1,l2;

    scanf("%d",&l1);

    printf("Enter upper limit\n");

    scanf("%d",&l2);

    int temp=l1;

    while(temp<=l2){
        int i=2,fl=1;
        while(i<=sqrt(temp)){
            if(temp%i==0){
                fl=0;
                break;
            }
            i++;
        }
        if(fl==1)
            printf("%d ",temp);
        temp++;
    }
    return 0;
}
```

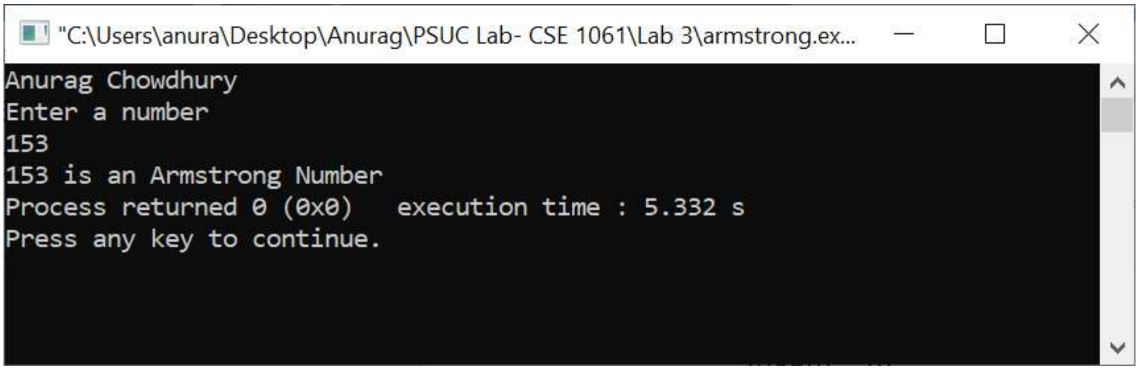

Select "C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 3\prime.exe"

```
Anurag Chowdhury
Enter the lower limit
20
Enter upper limit
70
Prime numbers from 20 to 70 are
23 29 31 37 41 43 47 53 59 61 67
Process returned 0 (0x0)   execution time : 6.316 s
Press any key to continue.
```

3. Check if the sum of the cubes of all digits of an inputted number equals the number itself (Armstrong Number). (use while loop)

```
/*Check if the sum of the cubes of all digits of an inputted number equals the
number itself (Armstrong Number). (use while loop)*/
```

```
#include<stdio.h>

int main(){

    printf("Anurag Chowdhury\n");

    int n;

    printf("Enter a number\n");

    scanf("%d",&n);

    int rem,temp=n,sum=0;

    while(temp>0){

        rem=temp%10;

        temp=temp/10;

        sum=sum+rem*rem*rem;

    }

    if(sum==n)

        printf("%d is an Armstrong Number",n);

    else

        printf("%d is not an Armstrong number",n);

    return 0;

}
```

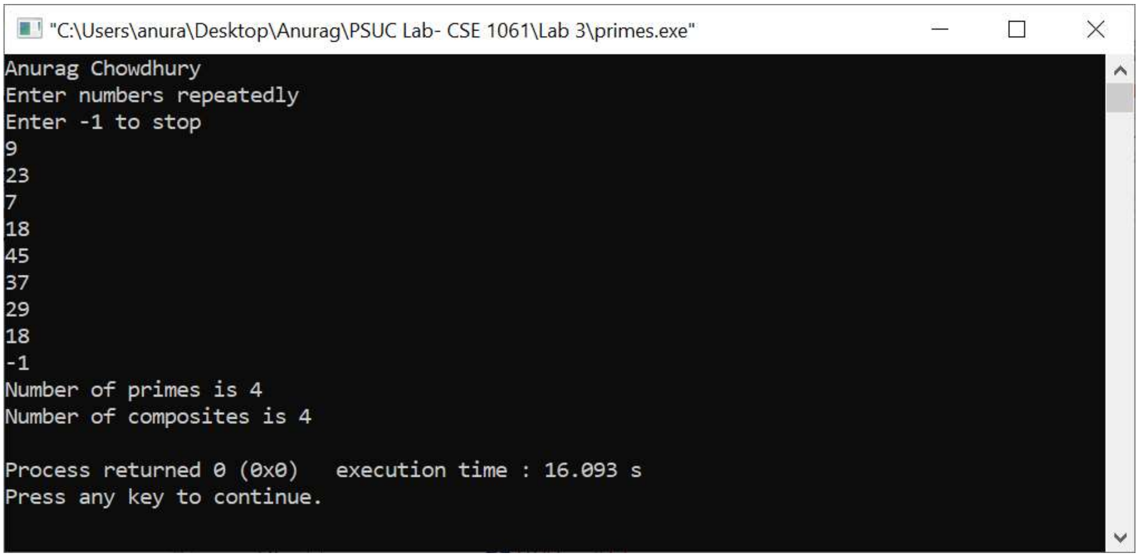


"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 3\armstrong.ex...

```
Anurag Chowdhury
Enter a number
153
153 is an Armstrong Number
Process returned 0 (0x0)   execution time : 5.332 s
Press any key to continue.
```

4. Write a program using do-while loop to read the numbers until -1 is encountered. Also count the number of prime numbers and composite numbers entered by user. [Hint: 1 is neither prime nor composite]

```
/*Write a program using do-while loop to read the numbers until -1 is encountered. Also
count the number of prime numbers and composite numbers entered by user. [Hint: 1
is neither prime nor composite]*/

#include<stdio.h>
#include<math.h>
int main(){
    int n,composite=0,prime=0;
    printf("Anurag Chowdhury\n");
    printf("Enter numbers repeatedly\nEnter -1 to stop\n");
    do{
        scanf("%d",&n);
        int i=2,fl=1;
        while(i<sqrt(n)){
            if(n%i==0){
                fl=0;
                break;
            }
            i++;
        }
        if(fl==1 && n>1)
            prime++;
        else if(fl==0 && n>1)
            composite++;
    }
    while(n!=-1);
    printf("Number of primes is %d\n",prime);
    printf("Number of composites is %d\n",composite);
    return 0;
}
```

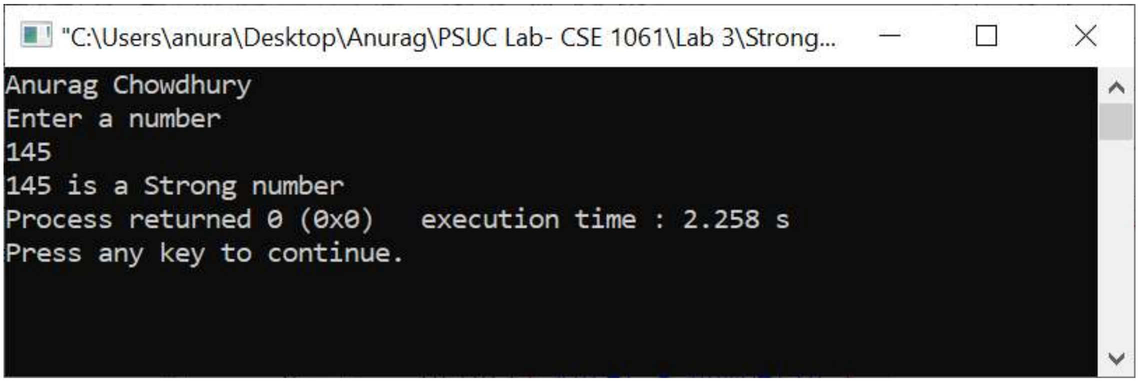


"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 3\primes.exe"

```
Anurag Chowdhury
Enter numbers repeatedly
Enter -1 to stop
9
23
7
18
45
37
29
18
-1
Number of primes is 4
Number of composites is 4

Process returned 0 (0x0)   execution time : 16.093 s
Press any key to continue.
```

5. Check whether the given number is strong or not.

```
//Check whether the given number is strong or not.
#include<stdio.h>
int main(){
    int n;
    printf("Anurag Chowdhury\n");
    printf("Enter a number\n");
    scanf("%d",&n);
    int temp=n,rem,sum=0,f=1;
    while(temp>0){
        rem=temp%10;
        temp=temp/10;
        f=1;
        int i=1;
        while(i<=rem){
          f=f*i;
          i++;
        }
        sum=sum+f;
      }
      if(sum==n)
        printf("%d is a Strong number",n);
      else
        printf("%d is Not a Strong number",n);
      return 0;
    }
```

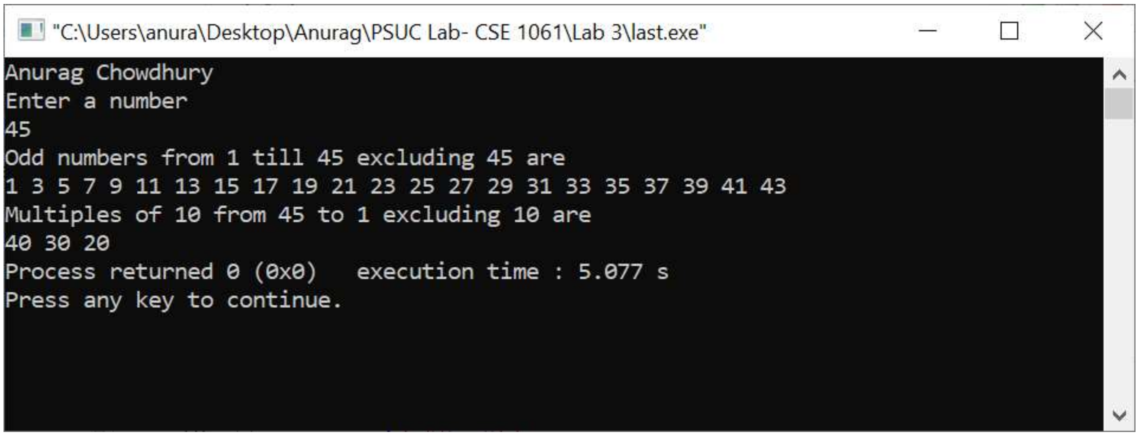

"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 3\Strong...

```
Anurag Chowdhury
Enter a number
145
145 is a Strong number
Process returned 0 (0x0)   execution time : 2.258 s
Press any key to continue.
```

6. Write a program to demonstrate use of break and continue statements in while and do-while loops.

```
/*Write a program to demonstrate use of break and continue statements in
while and do-while loops.*/
```

```
#include<stdio.h>
int main(){
    printf("Anurag Chowdhury\n");
    printf("Enter a number\n");
    int n;
    scanf("%d",&n);
    printf("Odd numbers from 1 till %d excluding %d are\n",n,n);
    int i=1;
    while(i<=n){
        if(i%2==0){
            i++;
            continue;
        }
        else if(i==n)
            break;
        else
            printf("%d ",i);
        i++;
    }
    printf("\nMultiples of 10 from %d to 1 excluding 10 are\n",n);
    i=n;
    do{
       if(i%10!=0){
         i--;
         continue;
       }
       else if(i==10)
          break;
        else

        printf("%d ",i);

        i--;


      }

      while(i>0);

      return 0;

  }
```


"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 3\last.exe"

```
Anurag Chowdhury
Enter a number
45
Odd numbers from 1 till 45 excluding 45 are
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43
Multiples of 10 from 45 to 1 excluding 10 are
40 30 20
Process returned 0 (0x0)   execution time : 5.077 s
Press any key to continue.
```

Lab 4

Name:Anurag Chowdhury

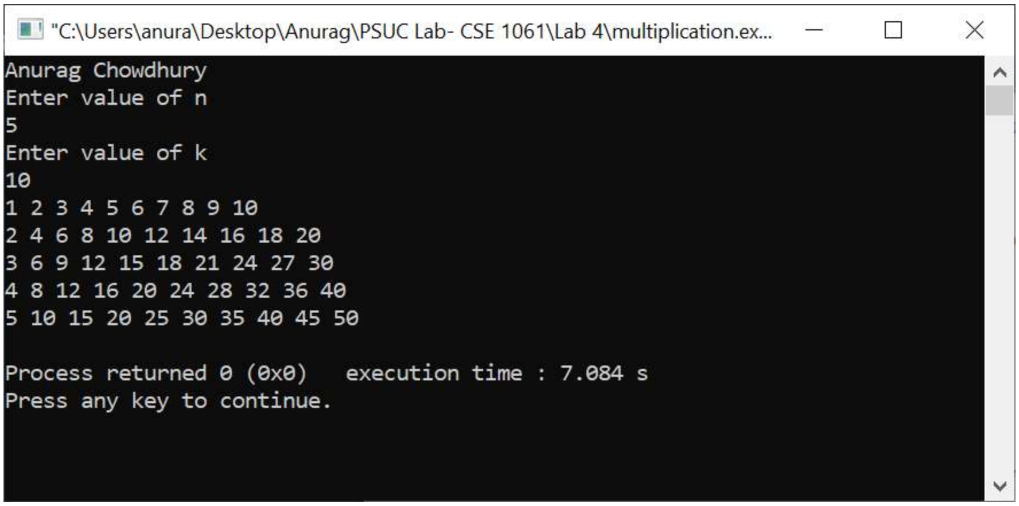
Section M: Roll No. 22

Reg No.:200905238

30/08/2021

1. Generate the multiplication table for ‘n’ numbers up to ‘k’ terms (using nested for loops)

```
 /*1. Generate the multiplication table for ‘n’ numbers up to ‘k’ terms (using
nested for loops)*/

#include<stdio.h>
int main(){
   printf("Anurag Chowdhury\n");
   int n,k;
   printf("Enter value of n\n");
   scanf("%d",&n);
   printf("Enter value of k\n");
   scanf("%d",&k);
   for(int i=1;i<=n;i++){
      for(int j=1;j<=k;j++){
         printf("%d ",i*j);
      }
      printf("\n");
   }
   return 0;
}
```

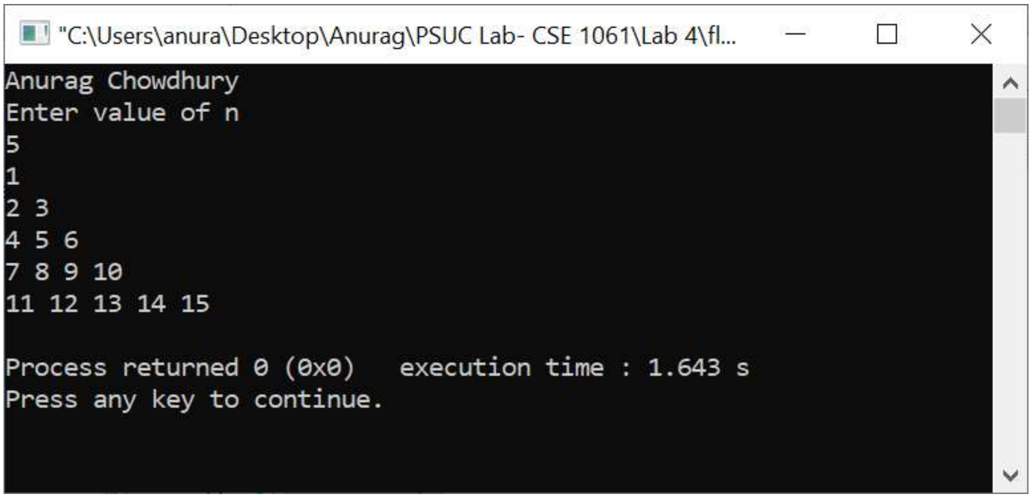


"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 4\multiplication.ex...

```
Anurag Chowdhury
Enter value of n
5
Enter value of k
10
1 2 3 4 5 6 7 8 9 10
2 4 6 8 10 12 14 16 18 20
3 6 9 12 15 18 21 24 27 30
4 8 12 16 20 24 28 32 36 40
5 10 15 20 25 30 35 40 45 50

Process returned 0 (0x0)   execution time : 7.084 s
Press any key to continue.
```

2. Generate Floyd’s triangle using natural numbers for a given limit N. (using for loops)

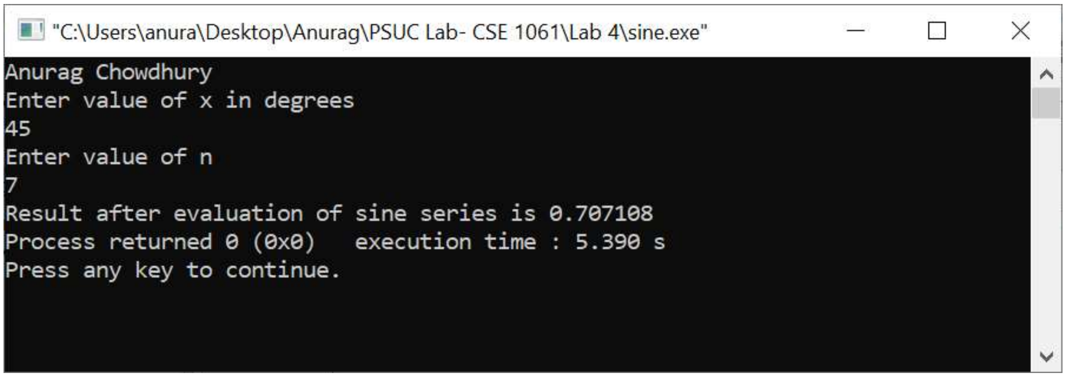
```
 /*Generate Floyd’s triangle using natural numbers for a given limit N. (using
for loops)*/
#include<stdio.h>
int main(){
  printf("Anurag Chowdhury\n");
  printf("Enter value of n\n");
  int n,k=1;
  scanf("%d",&n);
  for(int i=1;i<=n;i++){
    for(int j=1;j<=i;j++){
      printf("%d ",k);
      k++;
    }
    printf("\n");
    }
    return 0;
}
```


"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 4\fl...

```
Anurag Chowdhury
Enter value of n
5
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

Process returned 0 (0x0)   execution time : 1.643 s
Press any key to continue.
```

3. Evaluate the sine series, sin(x)= x- x 3 /3! + x5 /5!–x 7 /7!+ ……… to n terms.

```
/*Evaluate the sine series, sin(x)= x- x3/3! + x5/5!–x7/7!+ ……… to n terms.*/
#include<stdio.h>
#include<math.h>
#include<stdlib.h>
int main(){
    int n;
    float x;
    printf("Anurag Chowdhury\n");
    printf("Enter value of x in degrees \n");
    scanf("%f",&x);
    printf("Enter value of n \n");
    scanf("%d",&n);
    x=x*(3.1416/180.0); //converting to radians
    float t=x;
    float sine=x;
    for(int i=1;i<=n;i++){
      t=(-1*t*pow(x,2))/(2*i*(2*i+1));
      sine=sine+t;
    }
    printf("Result after evaluation of sine series is %f",sine);
    return 0;
}
```

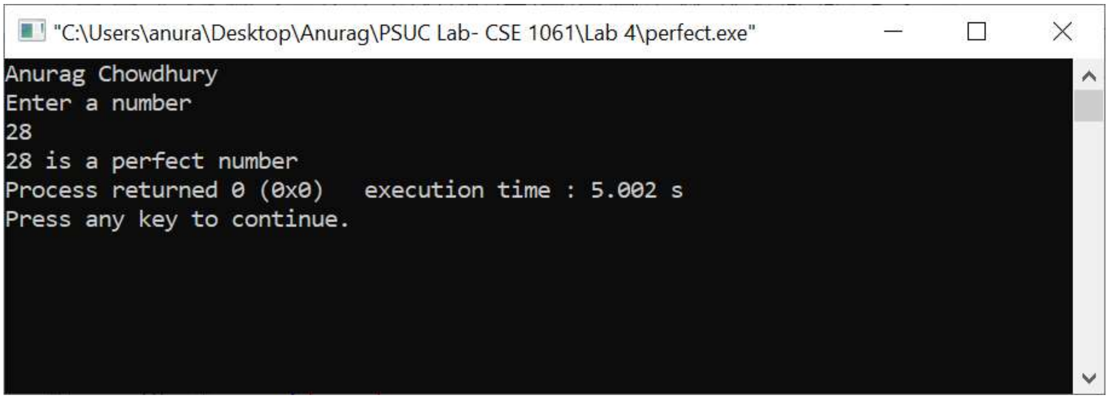

"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 4\sine.exe"

```
Anurag Chowdhury
Enter value of x in degrees
45
Enter value of n
7
Result after evaluation of sine series is 0.707108
Process returned 0 (0x0)   execution time : 5.390 s
Press any key to continue.
```

4. Check whether a given number is perfect or not.

```
//Check whether a given number is perfect or not.
#include<stdio.h>
int main(){
    printf("Anurag Chowdhury\n");
    int n,s=0;
    printf("Enter a number\n");
    scanf("%d",&n);
    for(int i=1;i<=n/2;i++){
        if(n%i==0)
```

```
            s=s+i;
        }
        if(s==n)
          printf("%d is a perfect number",n);
        else
          printf("%d is not a perfect number",n);
        return 0;
      }
```

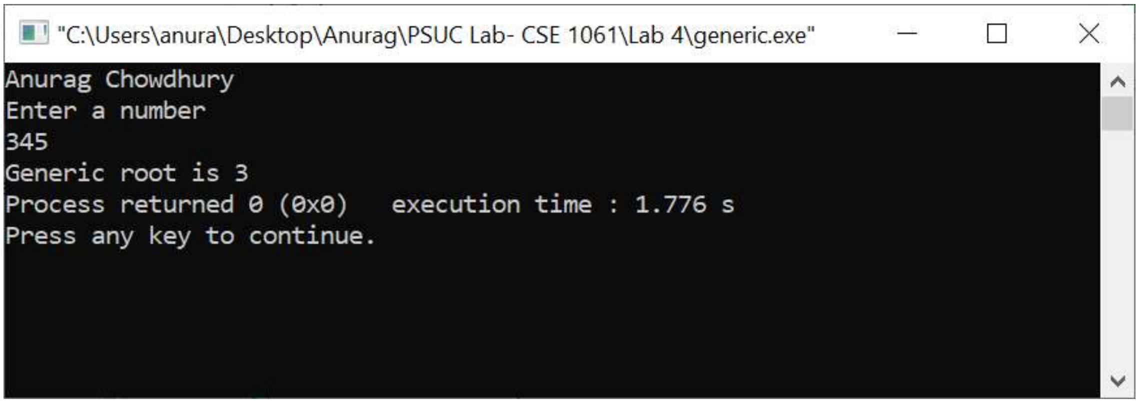


"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 4\perfect.exe"

```
Anurag Chowdhury
Enter a number
28
28 is a perfect number
Process returned 0 (0x0)   execution time : 5.002 s
Press any key to continue.
```

5. Find out the generic root of any number.
   //Program to find out generic root of a number

```
       #include<stdio.h>
      int main(){
        printf("Anurag Chowdhury\n");
        printf("Enter a number\n");
        int n,s=0,rem;
        scanf("%d",&n);
        for(;n>0;){
          rem=n%10;
          s=s+rem;
        n=n/10;

        if(n==0 && s>9){

           n=s;

           s=0;

        }

        else if(n==0 && s<10)

           break;

     }

     printf("%d",s);

  }
```



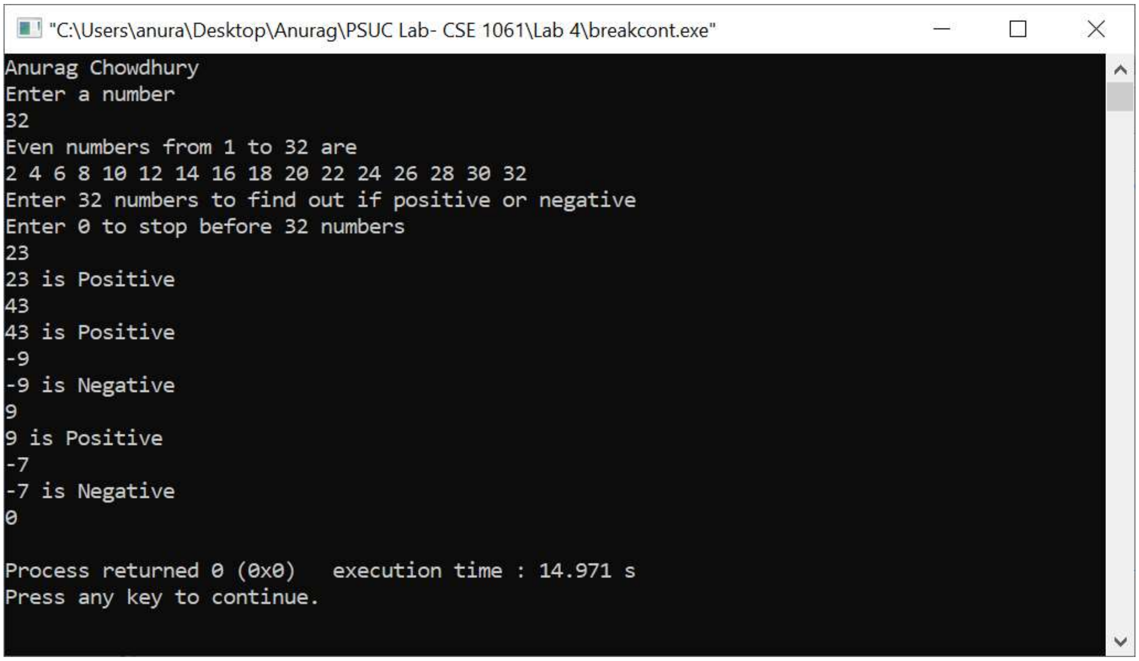
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 4\generic.exe"

```
Anurag Chowdhury
Enter a number
345
Generic root is 3
Process returned 0 (0x0)   execution time : 1.776 s
Press any key to continue.
```

6. Write a program to demonstrate use of break and continue statements in for loop.

```
//Write a program to demonstrate use of break and continue
statements in for loop

#include<stdio.h>
```

```
int main(){
    printf("Anurag Chowdhury\n");
    int n,x;
    printf("Enter a number\n");
    scanf("%d",&n);
    printf("Even numbers from 1 to %d are\n",n);
    for(int i=1;i<=n;i++){
        if(i%2!=0)
            continue;
        else
            printf("%d ",i);
    }
    printf("\n");
    printf("Enter %d numbers to find out if positive or negative\nEnter 0 to stop before %d numbers\n",n,n);
    for(int i=1;i<=n;i++){
        scanf("%d",&x);
        if(x==0)
            break;
        else{
            if(x>0)
                printf("%d is Positive\n",x);
            else if(x<0)
                printf("%d is Negative\n",x);
        }
    }
}
```



"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 4\breakcont.exe"

```
Anurag Chowdhury
Enter a number
32
Even numbers from 1 to 32 are
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32
Enter 32 numbers to find out if positive or negative
Enter 0 to stop before 32 numbers
23
23 is Positive
43
43 is Positive
-9
-9 is Negative
9
9 is Positive
-7
-7 is Negative
0

Process returned 0 (0x0)   execution time : 14.971 s
Press any key to continue.
```