**11. Code Optimization Technique**

**1. Factorial of a number**

**Before Optimization:**

#include<stdio.h>

int main()

{

int i,n;

int fact=1;

printf("Enter a number: ");

scanf("%d",&n);

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

{

fact=fact\*i;

}

printf("The factorial value is %d",fact);

return 0;

}

**OUTPUT:**

Enter a number: 7

The factorial value is 5040

Process returned 0 (0x0) **execution time : 5.155 s**

Press any key to continue.

**After optimization:**

#include<stdio.h>

int main()

{

int n,fact;

fact=1;

printf("Enter the number: ");

scanf("%d",&n);

do{

fact=fact\*n;

n--;

}while(n>0);

printf("The factorial value is %d",fact);

return 0;

}

**OUTPUT:**

Enter the number: 7

The factorial value is 5040

Process returned 0 (0x0) **execution time : 2.075 s**

Press any key to continue.

**2. Area of a Circle**

**Before Optimization:**

#include<stdio.h>

#define x 3.147

void main()

{

float r,A;

printf("Enter the radius for the circle: ");

scanf("%f",&r);

A=x\*r\*r;

printf("\nArea of a circle:%f",A);

}

**OUTPUT:**

Enter the radius for the circle: 5

Area of a circle:78.675003

Process returned 27 (0x1B) **execution time : 4.883 s**

Press any key to continue.

**After Optimization:**

#include<stdio.h>

void main()

{

float r;

printf("Enter the radius for the circle: ");

scanf("%f",&r);

printf("\nArea of a circle:%f",3.147\*r\*r);

}

**OUTPUT:**

Enter the radius for the circle: 5

Area of a circle:78.675000

Process returned 27 (0x1B) **execution time : 4.800 s**

Press any key to continue.