Green University of Bangladesh Department of Computer Science and Engineering(CSE)

Faculty of Sciences and Engineering Semester: (Fall , Year:2022), B.Sc. in CSE (Day)

LAB REPORT NO : 06
Course Code : CSE 104
Course Title : Structured Programming Lab
Section : DC

Student Details

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Lab Date : 01-12-2022
Submission Date : 02-12-22
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[For Teachers use only: Don't Write Anything inside this box]

Lab Report Status

Marks:.....
Comments:

Signature:
Date:.....
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Problem 1:

•***Title:*** Write a C Program to print Perfect Numbers between given interval using function.

Objectives:

- To be familiar with scanf and printf functions.
- To be familiar with logical expression.
- To be familiar with for loop.
- To be familiar with user defined function.

Input & Output:

At first, the program read the range for find out all Perfect number . Then the program check all number in range are Perfect number or not. And print all Perfect Number in range.

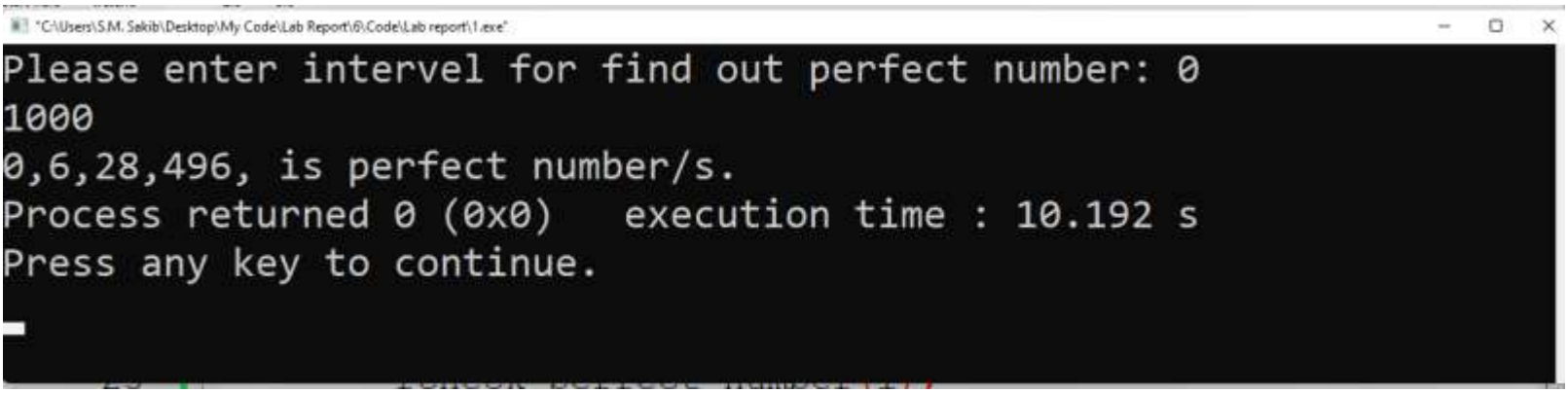
Implementation:

```c
//Write a C Program to print Perfect Numbers between given i

#include <stdio.h>
int perfect_number(int check)
{
    int sum=0;

    for(int i=1;i<check;i++){
        if(check%i==0){
            sum+=i;
        }
    }
    return sum;
}
int main(){
    int a,b,rcheck;
    printf("Please enter intervel for find out perfect number: ");
    scanf("%d %d",&a,&b);
    if(a>b){
        int temp;
        temp=a;a=b;
        b=temp;
    }
    for(int i=a;i<=b;i++){
        rcheck=perfect_number(i);
        if(rcheck==i){
            printf("%d,",i);
        }
    }
    printf(" is perfect number/s.");
    return 0;
}
```

Test Result:



Discussion: When I write the program I have to learn about Perfect Number. Then I apply logic and write the program…

Problem 2:

•***Title:*** Write a C program to create menu driven calculator that performs basic arithmetic operations (add, subtract, multiply and divide) using functions.

Objectives:

- To be familiar with scanf and printf functions.
- To be familiar with if else conditions.
- To be familiar with logical expression.
- To be familiar user-defined function.

Input & Output:

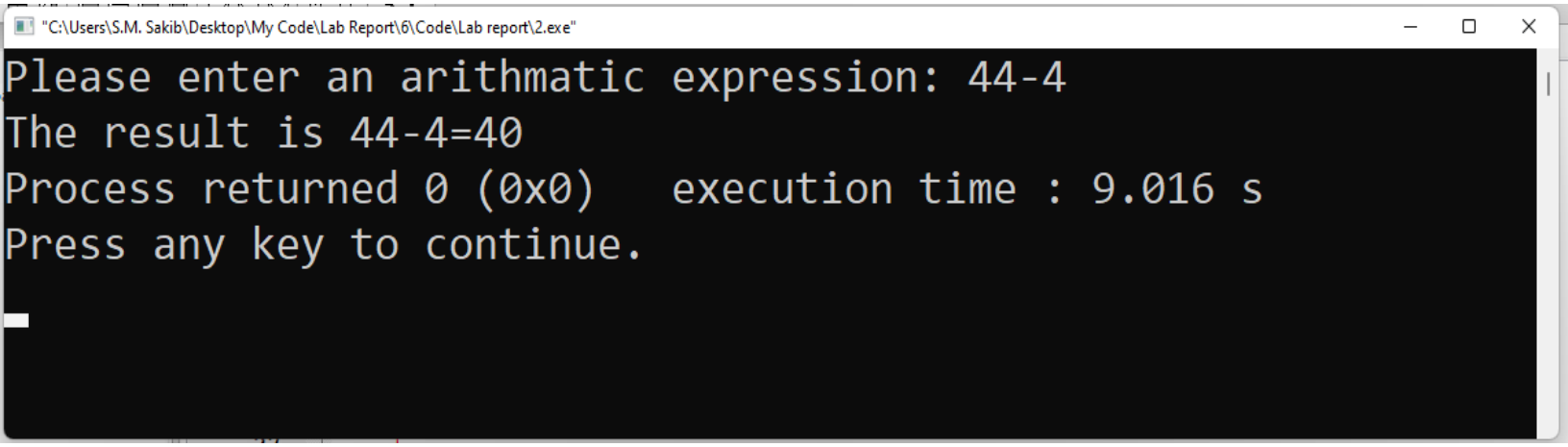
At first, the program read a basic arithmetic expression. Then the program checks the mathematical operator and shows the result..

Implementation:

```c
//Write a C program to create menu driven calculator that performs basic arithmetic o
#include <stdio.h>
int add(int a,int b){
int result;
result=a+b;
printf("The result is %d+%d=%d",a,b,result);
}

int subtract(int a,int b){
int result;
result=a-b;
printf("The result is %d-%d=%d",a,b,result);
}
int multiply(int a,int b){
int result;
result=a*b;
printf("The result is %d*%d=%d",a,b,result);
}
int divide(int a,int b){
int result;
result=a/b;
printf("The result is %d/%d=%d",a,b,result);
}
int main(){
   int a,b;
   char c;
   printf("Please enter an arithmatic expression: ");
    scanf("%d %c %d ",&a,&c,&b);
    if(c=='+'){
       add(a,b);
    }
        else if(c=='-'){
        subtract(a,b);
    }
     else if(c=='*'){
        multiply(a,b);
    }
     else if(c=='/'){
        add(a,b);
    }
    return 0;
}
```

Test Result:



Discussion: When I solve the problem I don't face any problem….

Problem 3:

•***Title:*** Write a C Program to print Strong Numbers between given interval using function.

Objectives:

- To be familiar with scanf and printf function.
- To be familiar with for loop.
- To be familiar with if else condition.
- To be familiar with user defined function.

Input & Output:

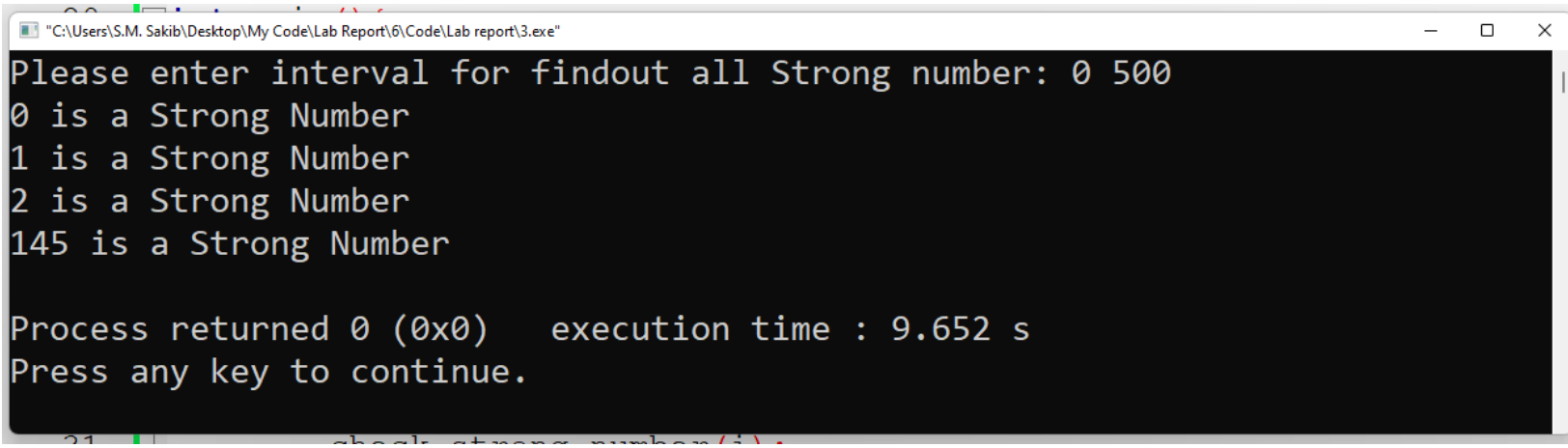
This program are input the the interval for find out the range of strong number. Then appling some mathmethical logic the program find out the number is strong number or not.

Implementation:

```c
//Write a C Program to print Strong Numbers between given interval using
#include <stdio.h>
int strong_number(int i){
    int rem,sum=0;
    while(i>0){
        rem=i%10;
        i/=10;
        sum+=factorial(rem);
    }
    return sum;

}
int factorial(int i){
    int fact=1;
    for(int j=1;j<=i;j++){
       fact*=j;
    }
    return fact;
}
int main(){
    int a,b,check;
    printf("Please enter interval for findout all Strong number: ");
    scanf("%d %d",&a,&b);
    if(a>b){
        int temp;
        temp=a;
        a=b;
        b=temp;
    }
    for(int i=a;i<=b;i++){
        check=strong_number(i);
        if(check==i){
            printf("%d is a Strong Number\n",i);
        }
    }
}
```

Test result:



Discussion: When I solve this programme I have to learn about strong number then I apply logic and solve this problem.