CA ASSIGNMENT

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Introduction About the program

➢ This program is about to create a c program which gives square of user defined number ,which display system time, count values, given numbers and all.
➢ In here the used IDE is Codeblocks 20.03.

➢ The 1st program is about to calculate the square value of any given number by the user with the system date & time.
➢ Then the 2nd one is improved to 20 times from a for loop.
➢ Then the 3rd one is about to create a txt file.
➢ The final program shows a program to read previously saved text file from the hard disk and display the count, Given number, Square Value and the System time and display again with the current system time.

Different Technology and Codes

In here the used technology is the C programming language. (Software- Code Blocks)

There were few several new codes used to create this program.

Ex:-

1. System time generating for every program at the end.

```
#include <time.h>

    int  t;

    time(&t);
```

2. Entering a file path to txt file and displaying of txt file information was aslo a new technique that gained from this program.

```
fpointer=fopen("c:\\temp\\1.txt","w");
```

In here "w" was used to write and "r" was used to read the data in the source code.

Source Code

Program 1

Objective:

To calculate the square value of any given number by the user. Print the given number and square value of the number in front of the given number with the system time.

```c
main.c  X
1     #include <stdio.h>
2     #include <stdlib.h>
3     #include <time.h>
4
5     int main()
6     {
7         int user_input_number, squre_value,t;
8
9         printf("Input a number:");
10        scanf("%d",&user_input_number);
11
12        squre_value=user_input_number*user_input_number;
13
14        printf("%d* %d=%d \n\n",user_input_number,user_input_number,squre_value);
15
16        time(&t);
17        printf("System Data & Time: %s",ctime(&t));
18        |
19        return 0;
20    }
21
```

Program 2, 3

Objective:-

To Improve the program to with while or for loop to do the above task for 20 times. Print the count before the given number and the square value of it.

Improve the program to write above information in to a txt file (text file).

```c
#include <stdio.h>
#include <stdlib.h>
#include <time.h>

int main()
{
    FILE* fpointer;
    fpointer=fopen("c:\\temp\\1.txt","w");
    int user_input_number, squre_value;

    for(int i=1;i<=20;i++)
    {
    printf("\n %d \n",i);
    printf("Input a number:");
    scanf("%d",&user_input_number);

    squre_value=user_input_number*user_input_number;

    printf("%d * %d=%d \n",user_input_number,user_input_number,squre_value);

    fprintf(fpointer,"\n%d \n %d * %d=%d \n",i,user_input_number,user_input_number,squre_value);
```

```c
       printf("\n %d \n",i);
       printf("Input a number:");
       scanf("%d",&user_input_number);

       squre_value=user_input_number*user_input_number;

       printf("%d * %d=%d \n",user_input_number,user_input_number,squre_value);

       fprintf(fpointer,"\n%d \n %d * %d=%d \n",i,user_input_number,user_input_number,squre_value);
       }
       time_t System_time;
       time(&System_time);
       printf("\n\n%s",ctime(&System_time));

       fprintf(fpointer,"\n\n %s",ctime(&System_time));
       fclose(fpointer);
       return 0;
}
```

Program 4

```c
1       #include <stdio.h>
2       #include <stdlib.h>
3
4
5       int main()
6       {
7           int number, SquareRoot;
8           int i;
9
10          FILE * fPointer;
11          fPointer = fopen("Square of number.txt", "w");
12
13          for(i=0; i<20; i++)
14          {
15              size_t Time;
16              time(&Time);
17
18              printf("\nEnter number %d to find the square value :", i+1);
19              scanf("%d", &number);
20
21              SquareRoot = number * number;
```

```c
20
21              SquareRoot = number * number;
22
23
24              printf("\nThe Square value of the number is : %d ^ %d = %d  %s\n", number, number, SquareRoot,ctime(&Time));
25
26
27              fprintf(fPointer, "\nThe Square value of the number is : %d ^ %d = %d  %s\n" , number, number, SquareRoot,ctime(&Time));
28          }
29
30          fclose(fPointer);
31          FILE * fp;
32          char info[250];
33
34          fp = fopen("Square of number.txt", "r");
35
36          if(fp ==NULL)
37          {
38              printf("Unable to open the file\n");
39          }
40          else
```

```c
37          {
38              printf("Unable to open the file\n");
39          }
40          else
41          {
42              while(!feof(fp))
43              {
44                  fgets(info,250,fp);
45                  printf("%s", info);
46              }
47          }
48
49          system("getmac");
50          system("ipconfig/all");
51          getch();
52
53          return 0;
54      }
55
56
57
```
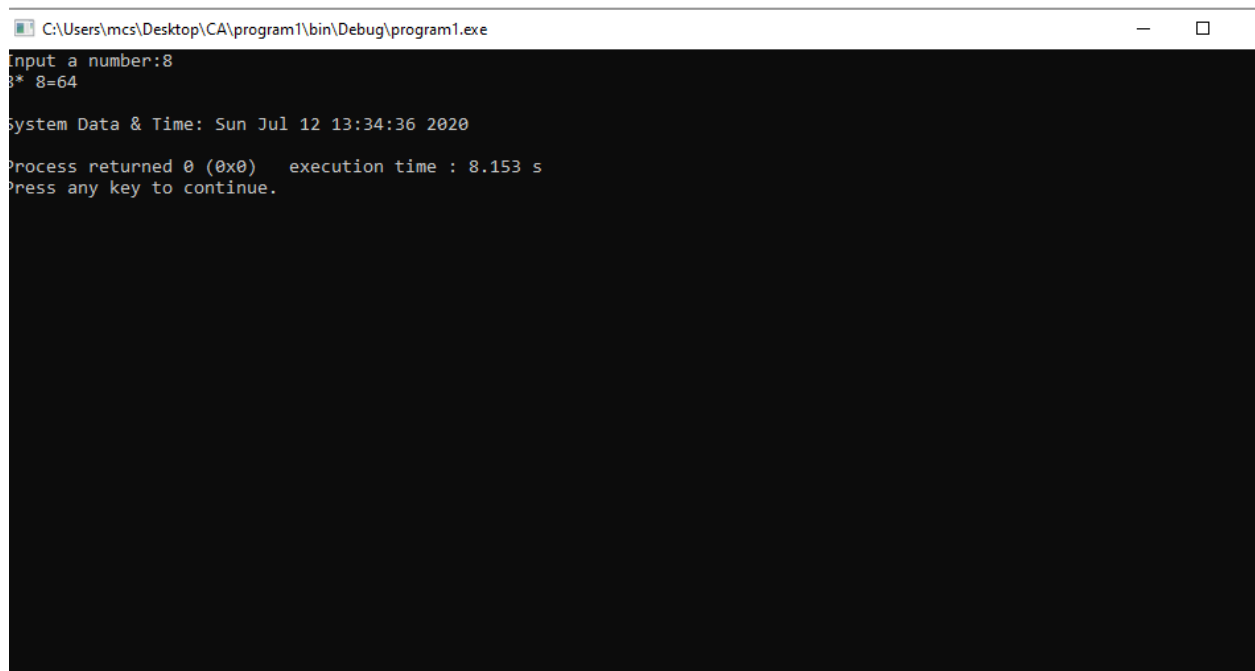
Output of each program

Program1

Only 1 mathematical answer will be given, with current system Date & Time.


```
C:\Users\mcs\Desktop\CA\program1\bin\Debug\program1.exe

Input a number:8
8* 8=64

System Data & Time: Sun Jul 12 13:34:36 2020

Process returned 0 (0x0)   execution time : 8.153 s
Press any key to continue.
```

Program 2,3

```
1
Input a number:1
1 * 1 =1

2
Input a number:2
2 * 2 =4

3
Input a number:3
3 * 3 =9

4
Input a number:4
4 * 4 =16

5
Input a number:5
5 * 5 =25

6
Input a number:6
6 * 6 =36

7
Input a number:7
7 * 7 =49

8
Input a number:8
8 * 8 =64

9
Input a number:9
9 * 9 =81

10
Input a number:10
10 * 10 =100

11
Input a number:11
11 * 11 =121
```

```
 12
Input a number:12
12 * 12 =144

 13
Input a number:13
13 * 13 =169

 14
Input a number:14
14 * 14 =196

 15
Input a number:15
15 * 15 =225

 16
Input a number:16
16 * 16 =256

 17
Input a number:17
17 * 17 =289

 18
Input a number:18
18 * 18 =324

 19
Input a number:19
19 * 19 =361

 20
Input a number:20
20 * 20 =400


Sun Jul 12 15:07:49 2020

Process returned 0 (0x0)   execution time : 40.775 s
Press any key to continue.
```

```
Enter number 1 to find the square value :1

The Square value of the number is : 1 ^ 1 = 1  Sun Jul 12 15:27:47 2020


Enter number 2 to find the square value :2

The Square value of the number is : 2 ^ 2 = 4  Sun Jul 12 15:27:49 2020


Enter number 3 to find the square value :3

The Square value of the number is : 3 ^ 3 = 9  Sun Jul 12 15:27:50 2020


Enter number 4 to find the square value :4

The Square value of the number is : 4 ^ 4 = 16  Sun Jul 12 15:27:51 2020


Enter number 5 to find the square value :5

The Square value of the number is : 5 ^ 5 = 25  Sun Jul 12 15:27:52 2020


Enter number 6 to find the square value :6

The Square value of the number is : 6 ^ 6 = 36  Sun Jul 12 15:27:52 2020


Enter number 7 to find the square value :7

The Square value of the number is : 7 ^ 7 = 49  Sun Jul 12 15:27:53 2020


Enter number 8 to find the square value :8

The Square value of the number is : 8 ^ 8 = 64  Sun Jul 12 15:27:55 2020


Enter number 9 to find the square value :9

The Square value of the number is : 9 ^ 9 = 81  Sun Jul 12 15:27:57 2020
```

Type here to search

```
Enter number 10 to find the square value :10

The Square value of the number is : 10 ^ 10 = 100  Sun Jul 12 15:29:08 2020


Enter number 11 to find the square value :11

The Square value of the number is : 11 ^ 11 = 121  Sun Jul 12 15:29:10 2020


Enter number 12 to find the square value :12

The Square value of the number is : 12 ^ 12 = 144  Sun Jul 12 15:29:11 2020


Enter number 13 to find the square value :13

The Square value of the number is : 13 ^ 13 = 169  Sun Jul 12 15:29:12 2020


Enter number 14 to find the square value :14

The Square value of the number is : 14 ^ 14 = 196  Sun Jul 12 15:29:13 2020


Enter number 15 to find the square value :15

The Square value of the number is : 15 ^ 15 = 225  Sun Jul 12 15:29:14 2020


Enter number 16 to find the square value :16

The Square value of the number is : 16 ^ 16 = 256  Sun Jul 12 15:29:15 2020


Enter number 17 to find the square value :17

The Square value of the number is : 17 ^ 17 = 289  Sun Jul 12 15:29:19 2020


Enter number 18 to find the square value :18

The Square value of the number is : 18 ^ 18 = 324  Sun Jul 12 15:29:22 2020
```

Enter number 19 to find the square value :19

The Square value of the number is : 19 ^ 19 = 361 Sun Jul 12 15:29:23 2020

Enter number 20 to find the square value :20

The Square value of the number is : 20 ^ 20 = 400 Sun Jul 12 15:29:24 2020

The Square value of the number is : 1 ^ 1 = 1 Sun Jul 12 15:28:59 2020

The Square value of the number is : 2 ^ 2 = 4 Sun Jul 12 15:29:01 2020

The Square value of the number is : 3 ^ 3 = 9 Sun Jul 12 15:29:03 2020

The Square value of the number is : 4 ^ 4 = 16 Sun Jul 12 15:29:04 2020

The Square value of the number is : 5 ^ 5 = 25 Sun Jul 12 15:29:05 2020

The Square value of the number is : 6 ^ 6 = 36 Sun Jul 12 15:29:05 2020

The Square value of the number is : 7 ^ 7 = 49 Sun Jul 12 15:29:06 2020

The Square value of the number is : 8 ^ 8 = 64 Sun Jul 12 15:29:07 2020

The Square value of the number is : 9 ^ 9 = 81 Sun Jul 12 15:29:08 2020

The Square value of the number is : 10 ^ 10 = 100 Sun Jul 12 15:29:08 2020

The Square value of the number is : 11 ^ 11 = 121 Sun Jul 12 15:29:10 2020

The Square value of the number is : 12 ^ 12 = 144 Sun Jul 12 15:29:11 2020

Type here to search

```
Enter number 19 to find the square value :19

The Square value of the number is : 19 ^ 19 = 361  Sun Jul 12 15:29:23 2020


Enter number 20 to find the square value :20

The Square value of the number is : 20 ^ 20 = 400  Sun Jul 12 15:29:24 2020


The Square value of the number is : 1 ^ 1 = 1  Sun Jul 12 15:28:59 2020


The Square value of the number is : 2 ^ 2 = 4  Sun Jul 12 15:29:01 2020


The Square value of the number is : 3 ^ 3 = 9  Sun Jul 12 15:29:03 2020


The Square value of the number is : 4 ^ 4 = 16  Sun Jul 12 15:29:04 2020


The Square value of the number is : 5 ^ 5 = 25  Sun Jul 12 15:29:05 2020


The Square value of the number is : 6 ^ 6 = 36  Sun Jul 12 15:29:05 2020


The Square value of the number is : 7 ^ 7 = 49  Sun Jul 12 15:29:06 2020


The Square value of the number is : 8 ^ 8 = 64  Sun Jul 12 15:29:07 2020


The Square value of the number is : 9 ^ 9 = 81  Sun Jul 12 15:29:08 2020


The Square value of the number is : 10 ^ 10 = 100  Sun Jul 12 15:29:08 2020


The Square value of the number is : 11 ^ 11 = 121  Sun Jul 12 15:29:10 2020
```

```
Physical Address      Transport Name
===================   =============================================================
40-B8-9A-F3-A8-FD     \Device\Tcpip_{9C1D38C8-208A-4132-B070-83A460A01BA8}
20-47-47-30-6D-91     Media disconnected
40-B8-9A-F3-A8-FE     Media disconnected

Windows IP Configuration

   Host Name . . . . . . . . . . . . : DESKTOP-HNR0Q1N
   Primary Dns Suffix  . . . . . . . :
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No
   DNS Suffix Search List. . . . . . : nsbm.lk

Ethernet adapter Ethernet:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Realtek PCIe FE Family Controller
   Physical Address. . . . . . . . . : 20-47-47-30-6D-91
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
   Physical Address. . . . . . . . . : 42-B8-9A-F3-A8-FD
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 2:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
   Physical Address. . . . . . . . . : 42-B8-9A-F3-A0-FD
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:
```

Type here to search

```
The Square value of the number is : 11 ^ 11 = 121  Sun Jul 12 15:29:10 2020


The Square value of the number is : 12 ^ 12 = 144  Sun Jul 12 15:29:11 2020


The Square value of the number is : 13 ^ 13 = 169  Sun Jul 12 15:29:12 2020


The Square value of the number is : 14 ^ 14 = 196  Sun Jul 12 15:29:13 2020


The Square value of the number is : 15 ^ 15 = 225  Sun Jul 12 15:29:14 2020


The Square value of the number is : 16 ^ 16 = 256  Sun Jul 12 15:29:15 2020


The Square value of the number is : 17 ^ 17 = 289  Sun Jul 12 15:29:19 2020


The Square value of the number is : 18 ^ 18 = 324  Sun Jul 12 15:29:22 2020


The Square value of the number is : 19 ^ 19 = 361  Sun Jul 12 15:29:23 2020


The Square value of the number is : 20 ^ 20 = 400  Sun Jul 12 15:29:24 2020



Physical Address     Transport Name
=================== =============================================================
40-B8-9A-F3-A8-FD    \Device\Tcpip_{9C1D38C8-208A-4132-B070-83A460A01BA8}
20-47-47-30-6D-91    Media disconnected
40-B8-9A-F3-A8-FE    Media disconnected

Windows IP Configuration

   Host Name . . . . . . . . . . . . : DESKTOP-HNR0Q1N
   Primary Dns Suffix  . . . . . . . :
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
```

C:\Users\mcs\Desktop\CA\program4\bin\Debug\program4.exe

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix . : nsbm.lk
   Description . . . . : Dell Wireless 1704 802.11b/g/n (2.4GHz)
   Physical Address. . . . . : 40-B8-9A-F3-A8-FD
   DHCP Enabled. . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::bda0:5370:6e12:c397%14(Preferred)
   IPv4 Address. . . . . : 10.10.72.20(Preferred)
   Subnet Mask . . . . : 255.255.224.0
   Lease Obtained. . . . . : Saturday, July 11, 2020 6:50:24 PM
   Lease Expires . . . . : Sunday, July 12, 2020 11:13:06 PM
   Default Gateway . . . . : 10.10.64.1
   DHCP Server . . . . : 10.10.10.12
   DHCPv6 IAID . . . . : 104904858
   DHCPv6 Client DUID. . . . . : 00-01-00-01-26-73-FD-03-20-47-47-30-6D-91
   DNS Servers . . . . : 10.10.10.11
                                       8.8.8.8
   NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

   Media State . . . . : Media disconnected
   Connection-specific DNS Suffix . :
   Description . . . . : Bluetooth Device (Personal Area Network)
   Physical Address. . . . . : 40-B8-9A-F3-A8-FE
   DHCP Enabled. . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Discussion and knowledge gained

➢ In this assignment I've found out, how to insert the current Data and time to a program.

➢ I also improved my knowledge on the usage of basic c programming skills.

➢ Entering, Storing and Retrieving data from txt file was a new thing I've learnt from this assignment.

➢ The MAC address representation to a program is also a new thing that I learnt from this assignment.

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