Assignment - 11

Problem Statement:

Write a program in C to accept a number from the user and compute the following:

a) Square root of the number

b) Square of the number

c) Cube of the number

d) Check whether the number is prime

e) Factorial of the number

f) Prime factors of the number

Code:

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

        case 3:
            printf("Cube = %d", n * n * n);
            break;

        case 4:
            if (n <= 1)
                isPrime = 0;

            for (i = 2; i <= n / 2; i++)
            {
                if (n % i == 0)
                {
                    isPrime = 0;
                    break;
                }
            }

            if (isPrime)
                printf("%d is a Prime Number", n);
            else
                printf("%d is not a Prime Number", n);
            break;

        case 5:
            if (n < 0)
            {
                printf("Factorial of negative number is not defined.");
            }
            else
            {
                for (i = 1; i <= n; i++)
                    fact *= i;
                printf("Factorial = %lld", fact);
            }
            break;
```

```c
76          case 6:
77              printf("Prime Factors of %d are: ", n);
78              for (i = 2; i <= n; i++)
79              {
80                  while (n % i == 0)
81                  {
82                      printf("%d ", i);
83                      n /= i;
84                  }
85              }
86              break;
87
88          default:
89              printf("Invalid Choice");
90          }
91
92          return 0;
93      }
94
```

Input & Output:

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```
Enter a number: 5

Menu:
1. Square Root
2. Square
3. Cube
4. Check Prime
5. Factorial
6. Prime Factors
Enter your choice: 2
Square = 25
D:\MIT\Sem2\FOP\Leap Year\x64\Debug\Leap Year.exe (process 13168) exited with code 0 (0x0
To automatically close the console when debugging stops, enable Tools->Options->Debugging
le when debugging stops.
Press any key to close this window . . .
```

```
Microsoft Visual Studio Debug    ×    +    ∨

Enter a number: 169

Menu:
1. Square Root
2. Square
3. Cube
4. Check Prime
5. Factorial
6. Prime Factors
Enter your choice: 1
Square Root = 13.00
D:\MIT\Sem2\FOP\Leap Year\x64\Debug\Leap Year.exe (process 17080) exited with code 0 (0x0).
To automatically close the console when debugging stops, enable Tools->Options->Debugging->A
le when debugging stops.
Press any key to close this window . . .
```

```
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Enter a number: 5

Menu:
1. Square Root
2. Square
3. Cube
4. Check Prime
5. Factorial
6. Prime Factors
Enter your choice: 3
Cube = 125
D:\MIT\Sem2\FOP\Leap Year\x64\Debug\Leap Year.exe (process 16476) exited
To automatically close the console when debugging stops, enable Tools->O
le when debugging stops.
Press any key to close this window . . .
```

```
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Enter a number: 5

Menu:
1. Square Root
2. Square
3. Cube
4. Check Prime
5. Factorial
6. Prime Factors
Enter your choice: 5
Factorial = 120
D:\MIT\Sem2\FOP\Leap Year\x64\Debug\Leap Year.exe (process 14852) exited with code 0
To automatically close the console when debugging stops, enable Tools->Options->Debug
le when debugging stops.
Press any key to close this window . . .
```

```
Enter a number: 3

Menu:
1. Square Root
2. Square
3. Cube
4. Check Prime
5. Factorial
6. Prime Factors
Enter your choice: 4
3 is a Prime Number
D:\MIT\Sem2\FOP\Leap Year\x64\Debug\Leap Year.exe (process 17124) exited with code
To automatically close the console when debugging stops, enable Tools->Options->Deb
le when debugging stops.
Press any key to close this window . . .
```

```
Enter a number: 10

Menu:
1. Square Root
2. Square
3. Cube
4. Check Prime
5. Factorial
6. Prime Factors
Enter your choice: 6
Prime Factors of 10 are: 2 5
D:\MIT\Sem2\FOP\Leap Year\x64\Debug\Leap Year.exe (process 892) exited with code 0 (0x0)
To automatically close the console when debugging stops, enable Tools->Options->Debugging
le when debugging stops.
Press any key to close this window . . .
```