OOP with C++

Lab work - 02

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Semester - 4th

GitHub - https://github.com/rishabh-live/oop-w-cpp-4-sem/tree/main/Labs

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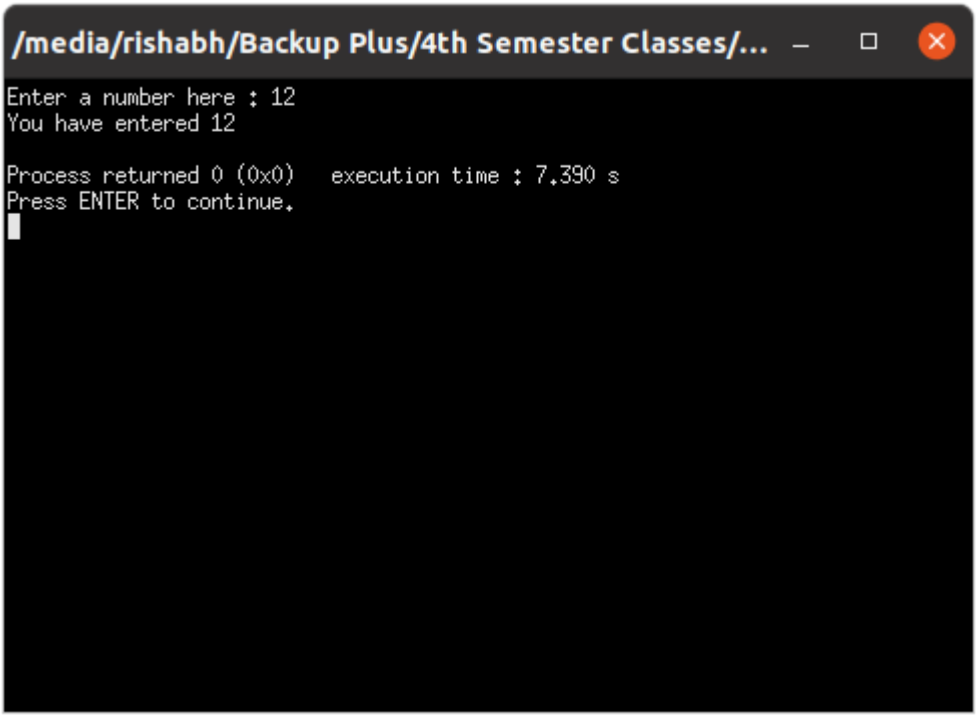
1) To use cin and cout

Source Code

```
//To use cin and cout

#include <iostream>

using namespace std;

int main(){
    int theInput;
    cout << "Enter a number here : ";
    cin >> theInput;
    cout << "You have entered " << theInput << "\n";

    return 0;
}
```

Output



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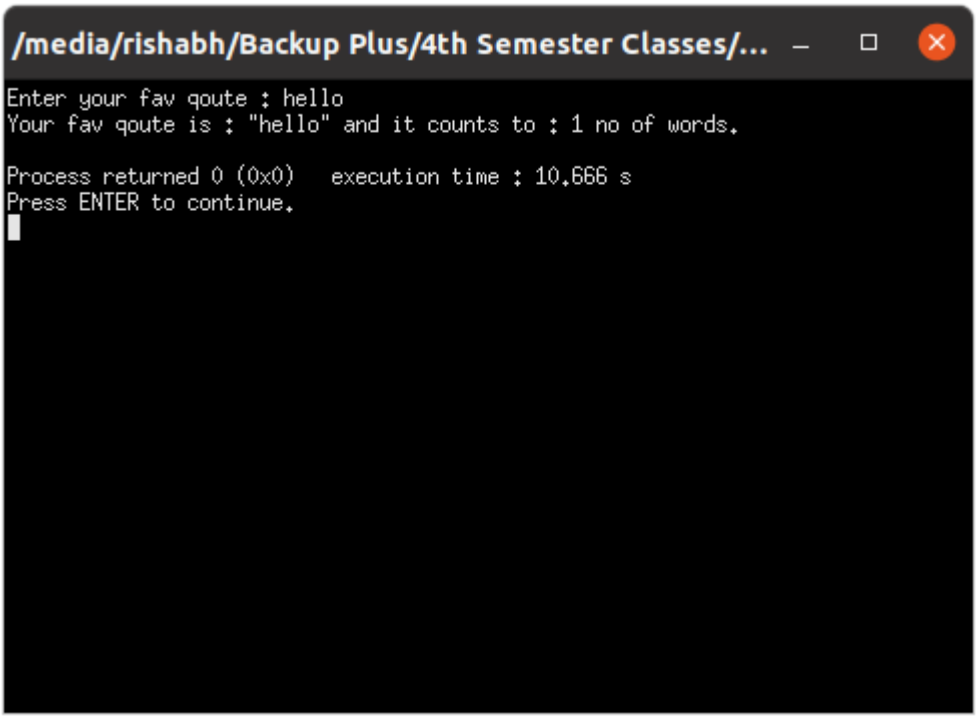
2) To use cin, strings and stringstream

Source Code

```
////To use cin , strings and stringstreams

#include <iostream>
#include <bits/stdc++.h>
using namespace std;

int countWords(string str)
{

    stringstream s(str);
    string word;

    int count = 0;
    while (s >> word)
    {
        count++;
    }
    return count;
}

int main()
{

    string theInput;

    cout << "Enter your fav qoute : ";
    cin >> theInput;
```

```
    cout << "Your fav qoute is : \"" << theInput << "\"";
    cout << " and it counts to : " << countWords(theInput) << " no of
words.\n ";

    return 0;
}
```

Output



> 3.a) Read a list of five numbers and counts the number of threes and sevens in the data.

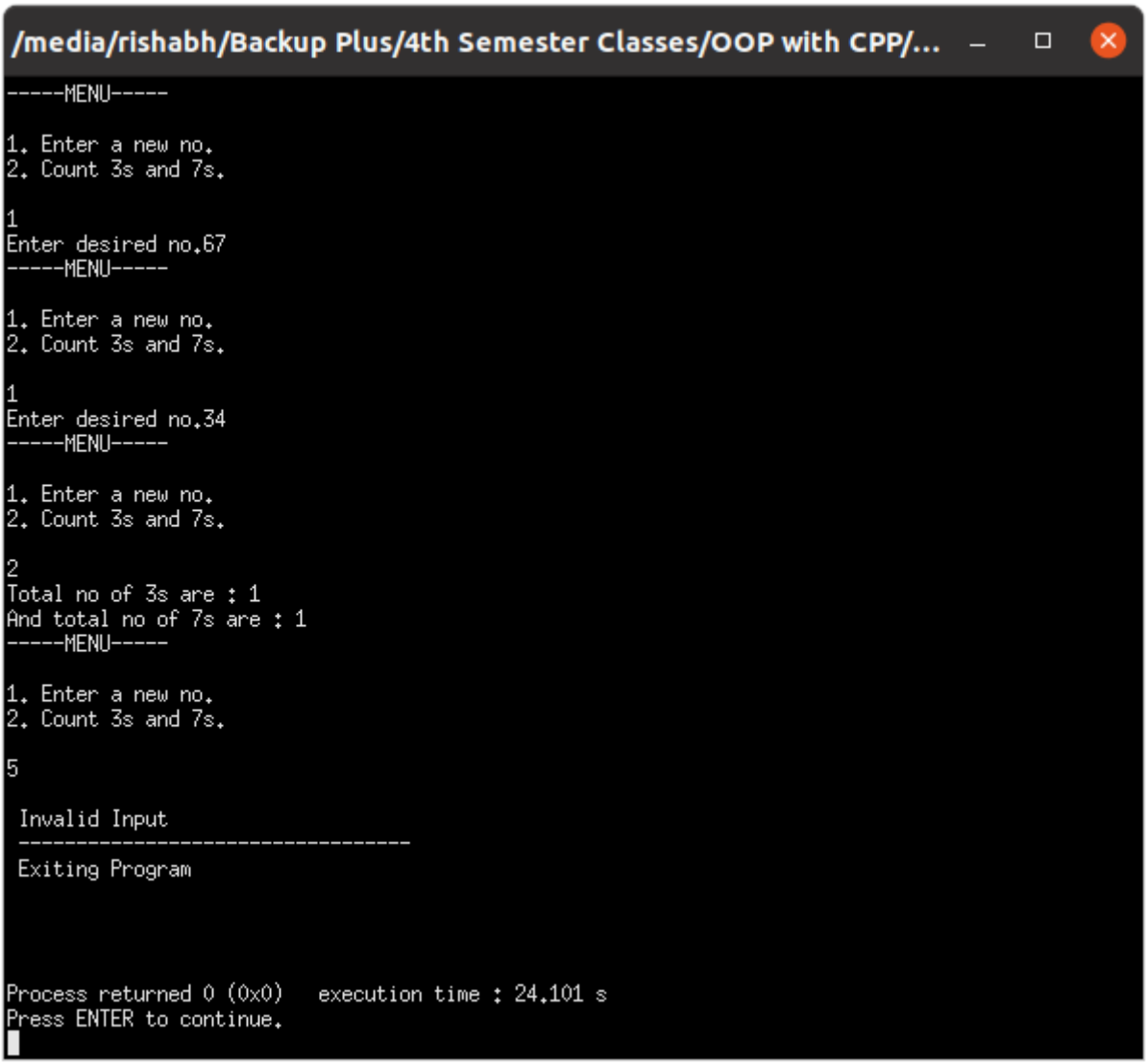
Source Code

```
//read a list of five numbers and counts the number of three and sevens in
the data

#include <iostream>
#include <sstream>

using namespace std;

int countT(string thNum)
{
    stringstream numStream(thNum);

    int num;
    numStream >> num;
```

```
    int ctr = 0;
    int remainder;

    while (num > 0)
    {
        remainder = num % 10;
        num /= 10;

        if (remainder == 3)
            ctr++;
    }

    return ctr;
}

int countS(string thNum)
{
    stringstream numStream(thNum);

    int num;
    numStream >> num;
    int ctr = 0;
    int remainder;

    while (num > 0)
    {
        remainder = num % 10;
        num /= 10;

        if (remainder == 7)
            ctr++;
    }

    return ctr;
}

int main()
{

    string no;
    string input;
    int val = 1;

    while (val == 1 || val == 2)
    {
        cout << "-----MENU-----\n\n1. Enter a new no. \n2. Count 3s and
7s.\n\n";

        cin >> val;

        if (val == 1)
        {
            cout << "Enter desired no.";
            cin >> input;
```

```
            no = no + input;
        }
        else if (val == 2)
        {
            cout << "Total no of 3s are : "
                 << countT(no) << "\n"
                 << "And total no of 7s are : "
                 << countS(no) << "\n";
        }
        else
        {
            cout << "\n Invalid Input \n ---------------------------------
 \n Exiting Program\n";
        }
    }
    cout << "\n\n\n";
    return 0;
}
```

Output

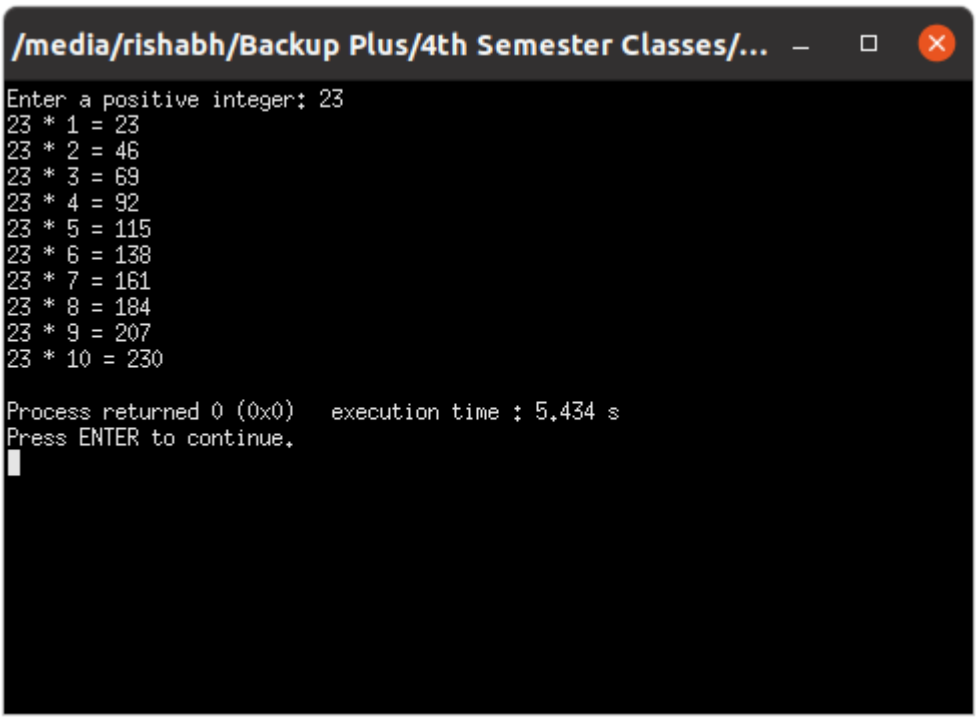


> 3.b) Write a program to print out the multiplication table.

Source Code

```cpp
//Write a program to print out the multiplication table.
#include <iostream>
using namespace std;

int main()
{
    int n;

    cout << "Enter a positive integer: ";
    cin >> n;

    for (int i = 1; i <= 10; ++i) {
        cout << n << " * " << i << " = " << n * i << endl;
    }

    return 0;
}
```

Output

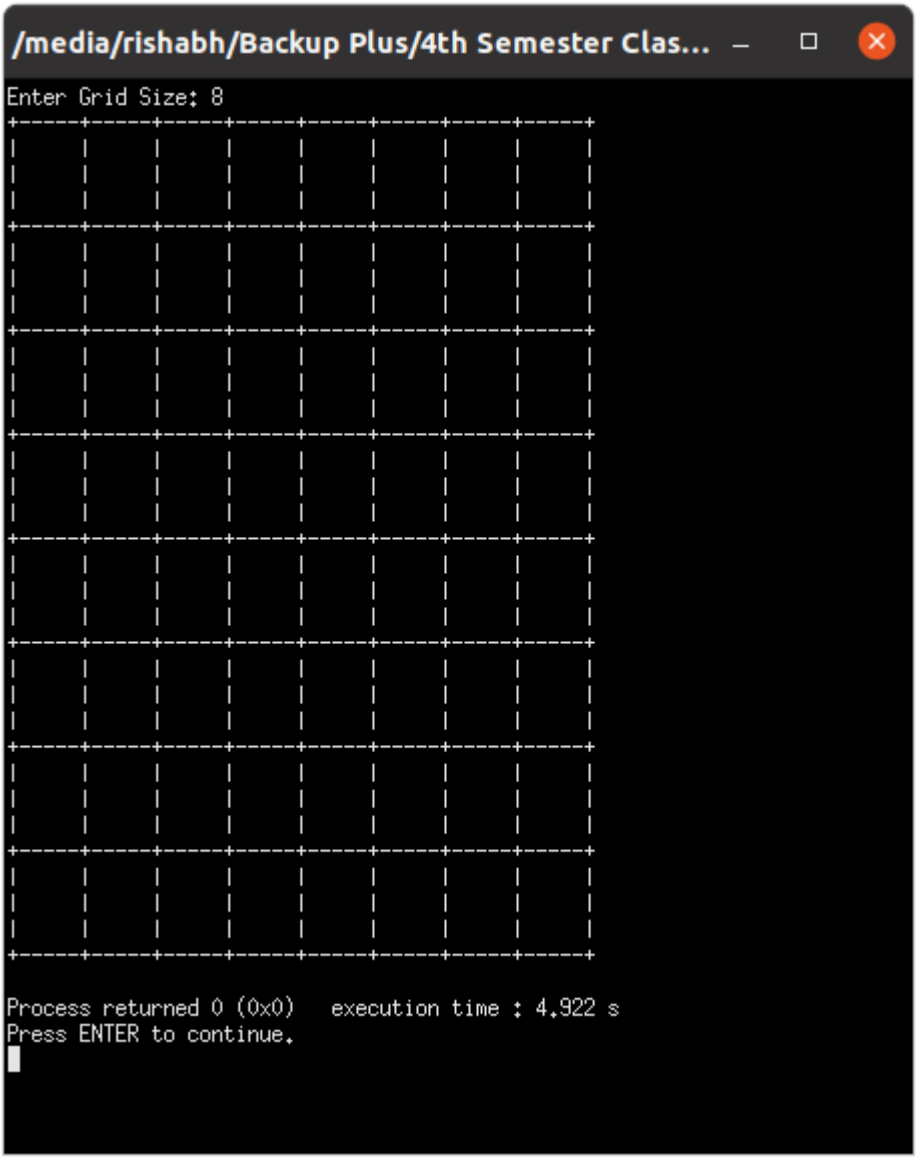


> 3.c) Print a checkerboard (8-by-8 grid). Each square should be 5-by-3 characters wide.

Source Code

```cpp
//Print a checkerboard (8-by-8 grid)
#include <iostream>
using namespace std;
int main()
{
    int n;
    cout<<"Enter Grid Size: ";
    cin>>n;
    for(int i=0;i<n;i++)
    {
        for(int j=1;j<=n;j++)
        {
            cout<<"+-----";
        }
        cout<<"+"<<endl;
        for(int j=1;j<=3;j++)
        {
            for(int k=1;k<=n;k++)
            {
                cout<<"|     ";
            }
            cout<<"|"<<endl;
        }
    }
    for(int j=1;j<=n;j++)
        {
            cout<<"+-----";
        }
        cout<<"+"<<endl;
    return 0;
}
```

Output


/media/rishabh/Backup Plus/4th Semester Clas...
Enter Grid Size: 8
Process returned 0 (0x0)   execution time : 4.922 s
Press ENTER to continue.