

OOPs lab

FALL2024



Assignment #1

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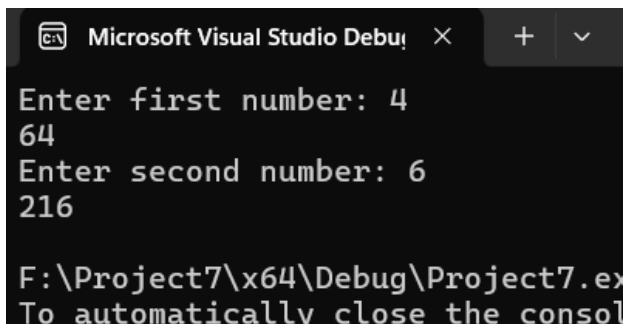
DEPARTMENT OF SOFTWARE ENGINEERING
BAHRIA UNIVERSITY ISLAMABAD CAMPUS

Q1. Write a program to implement the cube root with the help of function overloading.

Code:

```
#include <iostream>
using namespace std;
int cube(float a)
{
    return a * a * a;
}
int cube(int b)
{
    return b * b * b;
}
int main()
{
    int num1, num2;
    cout << "Enter first number: ";
    cin >> num1;
    cout << cube(num1) << endl;
    cout << "Enter second number: ";
    cin >> num2;
    cout << cube(num2) << endl;
    return 0;
}
```

Screenshot:



```
Microsoft Visual Studio Debug Console
Enter first number: 4
64
Enter second number: 6
216
F:\Project7\x64\Debug\Project7.exe
To automatically close the console window, click the 'x' button in the top right corner.
```

Q2. Write a program that uses function overloading for adding the two given integer and double precision values separately.

Code:

```
#include<iostream>
using namespace std;
```

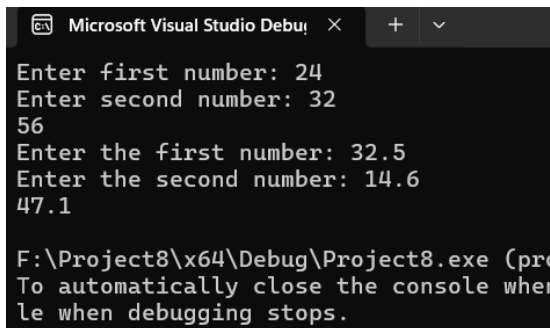
```

int add(int, int);
int add(int x, int y)
{
    return x + y;
}
double add(double, double);
double add(double b, double c)
{
    return b + c;
}
int main() {
    int num1, num2;
    double num3, num4;
    cout << "Enter first number: ";
    cin >> num1;
    cout << "Enter second number: ";
    cin >> num2;
    cout << add(num1, num2) << endl;

    cout << "Enter the first number: ";
    cin >> num3;
    cout << "Enter the second number: ";
    cin >> num4;
    cout << add(num3, num4) << endl;
}

```

Screenshot:



```

Microsoft Visual Studio Debug Console
Enter first number: 24
Enter second number: 32
56
Enter the first number: 32.5
Enter the second number: 14.6
47.1
F:\Project8\x64\Debug\Project8.exe (proj
To automatically close the console when
le when debugging stops.

```

Q3. Create a structure called time. Its three members, all type int, should be called hours, minutes, and seconds. Write a program that prompts the user to enter a time value in hours, minutes, seconds. This can be in 12:59:59 format, or each number

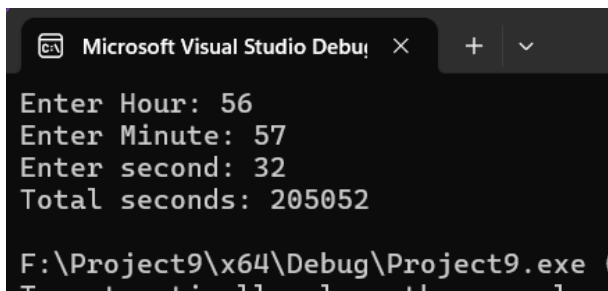
can be entered at a separate prompt ("Enter hours:", and so forth). The program should then store the time in a variable of type struct time, and finally print out the total number of seconds represented by this time value:

```
long totalsecs = t1.hours*3600 + t1.minutes*60 + t1.seconds
```

Code:

```
#include <iostream>
using namespace std;
struct time {
    int hours;
    int minutes;
    int seconds;
}current;
int main()
{
    cout << "Enter Hour: ";
    cin >> current.hours;
    cout << "Enter Minute: ";
    cin >> current.minutes;
    cout << "Enter second: ";
    cin >> current.seconds;
    double totalSeconds = current.hours * 3600 + current.minutes * 60 +
current.seconds;
    cout << "Total seconds: " << totalSeconds << endl;
    return 0;
}
```

Screenshot:

A screenshot of the Microsoft Visual Studio Debug Console window. The window title is "Microsoft Visual Studio Debug Console". The console output shows the following text: "Enter Hour: 56", "Enter Minute: 57", "Enter second: 32", and "Total seconds: 205052". At the bottom, the file path "F:\Project9\x64\Debug\Project9.exe" is visible.

```
Enter Hour: 56
Enter Minute: 57
Enter second: 32
Total seconds: 205052
F:\Project9\x64\Debug\Project9.exe
```

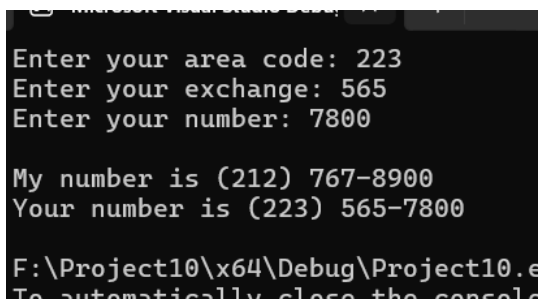
Q4. A phone number, such as (212) 767-8900, can be thought of as having three parts: the area code (212), the exchange (767), and the number (8900). Write a program that uses a structure to store these three parts of a phone number separately. Call the structure phone. Create two structure variables of type phone.

Initialize one, and have the user input a number for the other one. Then display both numbers.

Code:

```
#include <iostream>
using namespace std;
struct phone {
    int areacode;
    int exchange;
    int number;
};
int main()
{
    phone mine = { 212,767,8900 };
    phone yours;
    cout << "Enter your area code: ";
    cin >> yours.areacode;
    cout << "Enter your exchange: ";
    cin >> yours.exchange;
    cout << "Enter your number: ";
    cin >> yours.number;
    cout << endl;
    cout << "My number is (" << mine.areacode << ") " << mine.exchange << "-" <<
mine.number << endl;
    cout << "Your number is (" << yours.areacode << ") " << yours.exchange << "-"
<< yours.number << endl;
    return 0;
}
```

Screenshot:



```
Enter your area code: 223
Enter your exchange: 565
Enter your number: 7800

My number is (212) 767-8900
Your number is (223) 565-7800

F:\Project10\x64\Debug\Project10.e
To automatically close the console
```