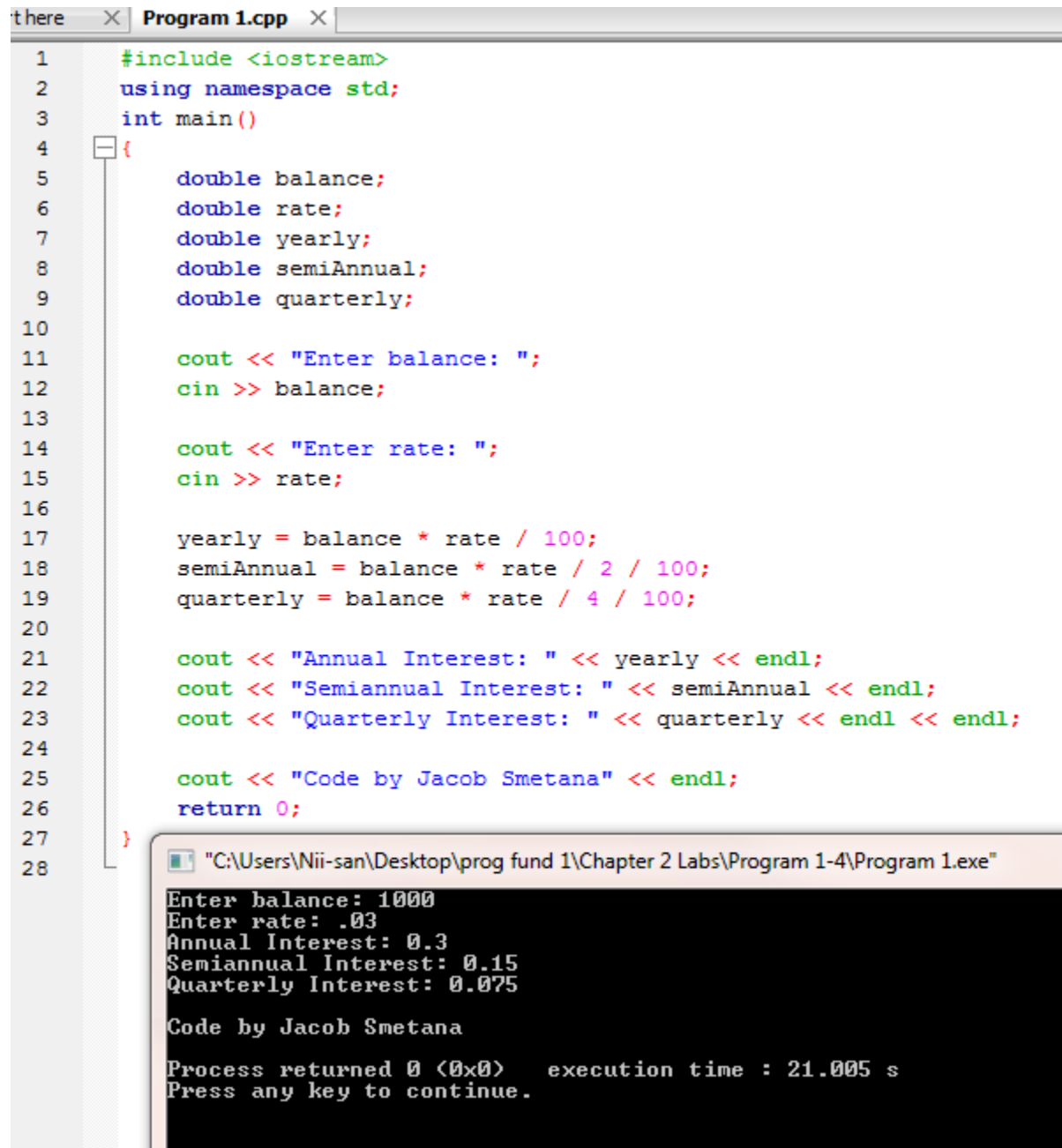


Programs 1-4

Program 1.



The image shows a code editor window titled "Program 1.cpp" with a line number margin on the left. The code is a C++ program that calculates interest. It includes `<iostream>`, uses the `std` namespace, and defines a `main` function. Inside `main`, it declares five `double` variables: `balance`, `rate`, `yearly`, `semiAnnual`, and `quarterly`. It then prompts the user to enter a balance and a rate. After input, it calculates the yearly interest as `balance * rate / 100`, the semiannual interest as `balance * rate / 2 / 100`, and the quarterly interest as `balance * rate / 4 / 100`. The results are printed with `cout` and `endl`. A final message "Code by Jacob Smetana" is printed before returning 0. Below the code editor, a console window titled "C:\Users\Nii-san\Desktop\prog fund 1\Chapter 2 Labs\Program 1-4\Program 1.exe" shows the program's execution. It displays the prompts and user input, followed by the calculated interest values and the author's name. At the end, it shows "Process returned 0 (0x0) execution time : 21.005 s" and "Press any key to continue."

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      double balance;
6      double rate;
7      double yearly;
8      double semiAnnual;
9      double quarterly;
10
11     cout << "Enter balance: ";
12     cin >> balance;
13
14     cout << "Enter rate: ";
15     cin >> rate;
16
17     yearly = balance * rate / 100;
18     semiAnnual = balance * rate / 2 / 100;
19     quarterly = balance * rate / 4 / 100;
20
21     cout << "Annual Interest: " << yearly << endl;
22     cout << "Semiannual Interest: " << semiAnnual << endl;
23     cout << "Quarterly Interest: " << quarterly << endl << endl;
24
25     cout << "Code by Jacob Smetana" << endl;
26     return 0;
27 }
28
```

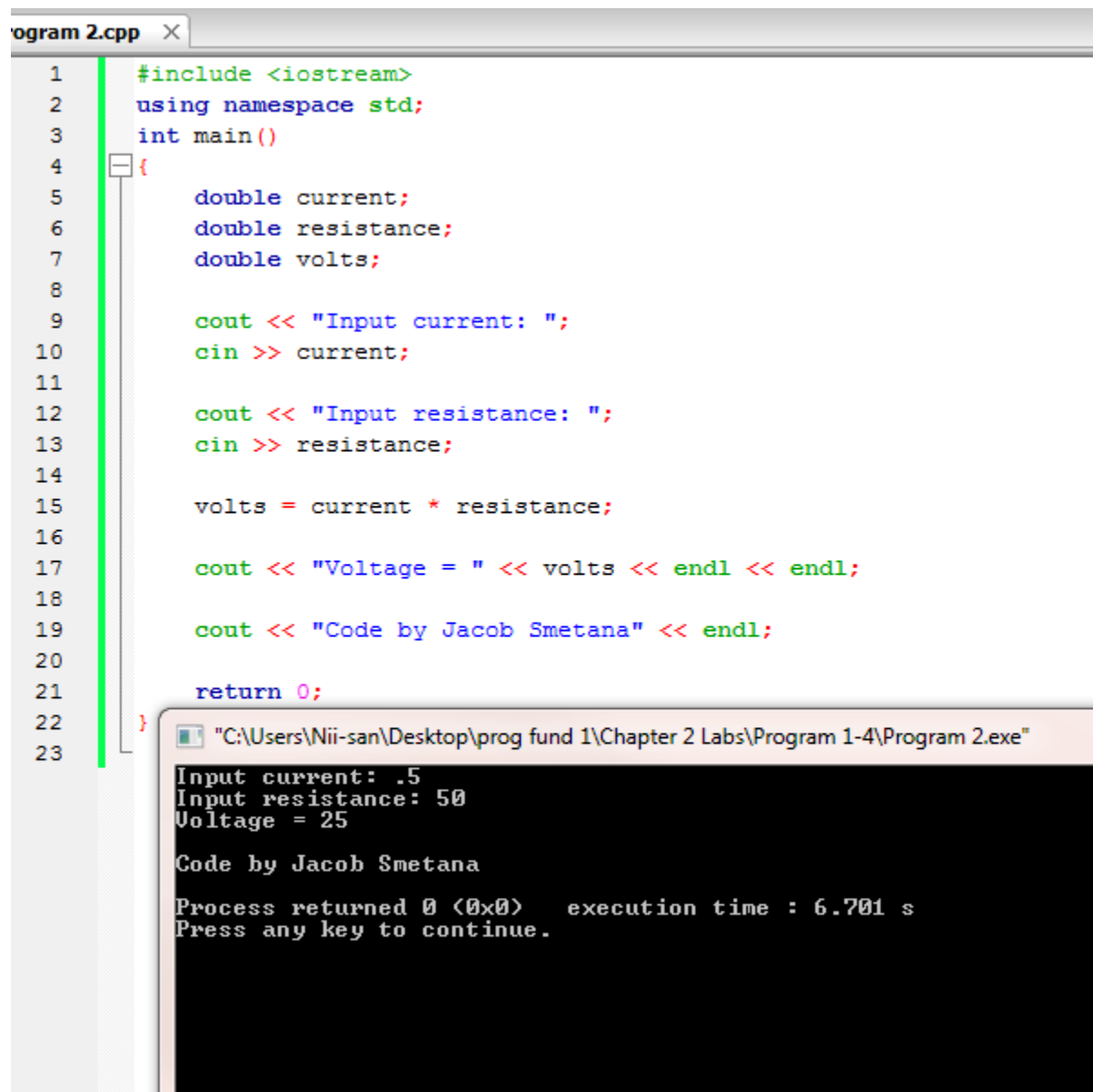
"C:\Users\Nii-san\Desktop\prog fund 1\Chapter 2 Labs\Program 1-4\Program 1.exe"

Enter balance: 1000
Enter rate: .03
Annual Interest: 0.3
Semiannual Interest: 0.15
Quarterly Interest: 0.075

Code by Jacob Smetana

Process returned 0 (0x0) execution time : 21.005 s
Press any key to continue.

Program 2.



The image shows a code editor window titled "rogram 2.cpp" with a list of 23 lines of C++ code. The code calculates voltage from current and resistance. Below the code editor, a console window titled "C:\Users\Nii-san\Desktop\prog fund 1\Chapter 2 Labs\Program 1-4\Program 2.exe" displays the program's output, including user input and a copyright notice.

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      double current;
6      double resistance;
7      double volts;
8
9      cout << "Input current: ";
10     cin >> current;
11
12     cout << "Input resistance: ";
13     cin >> resistance;
14
15     volts = current * resistance;
16
17     cout << "Voltage = " << volts << endl << endl;
18
19     cout << "Code by Jacob Smetana" << endl;
20
21     return 0;
22 }
23
```

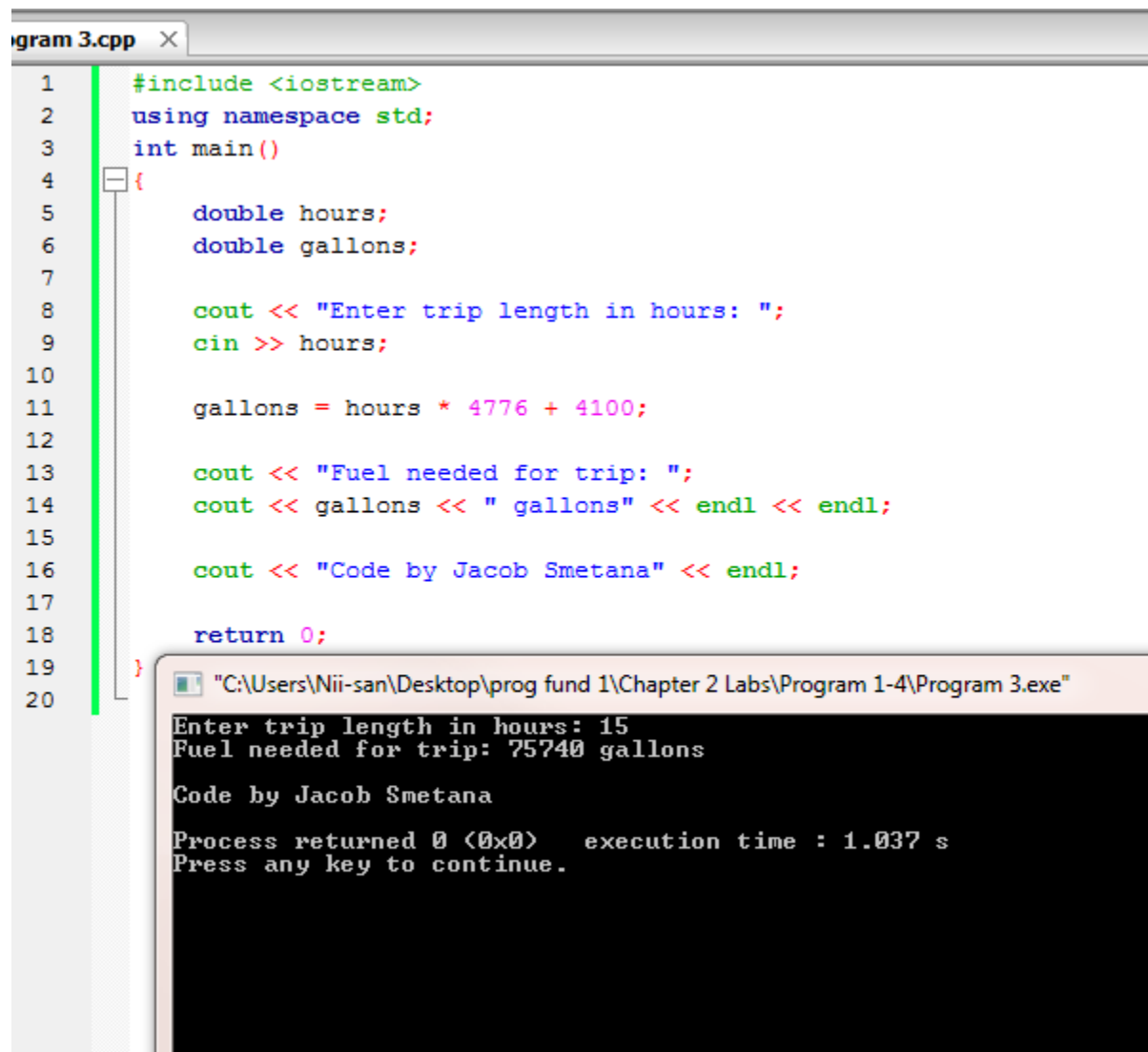
Output:

```
Input current: .5
Input resistance: 50
Voltage = 25

Code by Jacob Smetana

Process returned 0 (0x0)   execution time : 6.701 s
Press any key to continue.
```

Program 3.



The image shows a code editor window titled "Program 3.cpp" with a C++ program. The program calculates the fuel needed for a trip based on the number of hours. It uses the formula: gallons = hours * 4776 + 4100. The program prompts the user to enter the trip length in hours, calculates the fuel needed, and displays the result. The execution output shows the program running with an input of 15 hours, resulting in 75740 gallons. The output also includes the author's name, "Code by Jacob Smetana", and the execution time, 1.037 s.

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      double hours;
6      double gallons;
7
8      cout << "Enter trip length in hours: ";
9      cin >> hours;
10
11     gallons = hours * 4776 + 4100;
12
13     cout << "Fuel needed for trip: ";
14     cout << gallons << " gallons" << endl << endl;
15
16     cout << "Code by Jacob Smetana" << endl;
17
18     return 0;
19 }
20
```

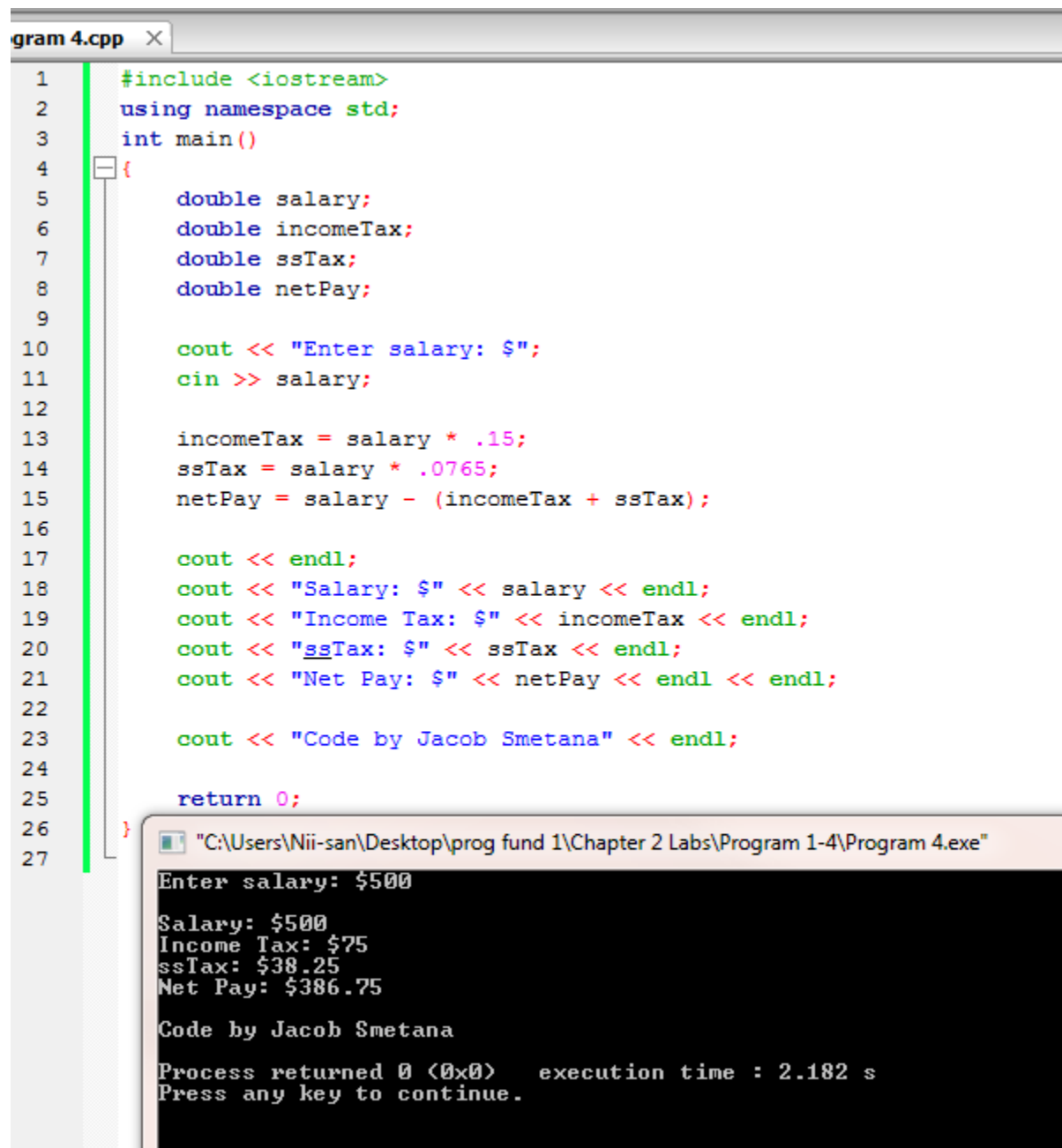
"C:\Users\Nii-san\Desktop\prog fund 1\Chapter 2 Labs\Program 1-4\Program 3.exe"

Enter trip length in hours: 15
Fuel needed for trip: 75740 gallons

Code by Jacob Smetana

Process returned 0 (0x0) execution time : 1.037 s
Press any key to continue.

Program 4.



The image shows a code editor window titled 'gram 4.cpp' with a C++ program. The program calculates income tax, social security tax, and net pay based on a user-entered salary. Below the code editor, a terminal window shows the program's execution with the output for a salary of \$500.

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      double salary;
6      double incomeTax;
7      double ssTax;
8      double netPay;
9
10     cout << "Enter salary: $";
11     cin >> salary;
12
13     incomeTax = salary * .15;
14     ssTax = salary * .0765;
15     netPay = salary - (incomeTax + ssTax);
16
17     cout << endl;
18     cout << "Salary: $" << salary << endl;
19     cout << "Income Tax: $" << incomeTax << endl;
20     cout << "ssTax: $" << ssTax << endl;
21     cout << "Net Pay: $" << netPay << endl << endl;
22
23     cout << "Code by Jacob Smetana" << endl;
24
25     return 0;
26 }
27
```

Terminal Output:

```
"C:\Users\Nii-san\Desktop\prog fund 1\Chapter 2 Labs\Program 1-4\Program 4.exe"
Enter salary: $500
Salary: $500
Income Tax: $75
ssTax: $38.25
Net Pay: $386.75

Code by Jacob Smetana

Process returned 0 (0x0)   execution time : 2.182 s
Press any key to continue.
```