CIS 170C
C++ Programming
Course Project
Loan Calculator

Roger Burns II

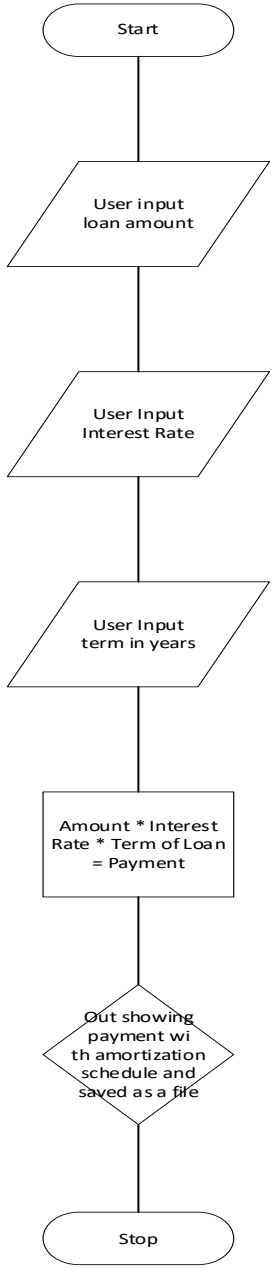
Introduction

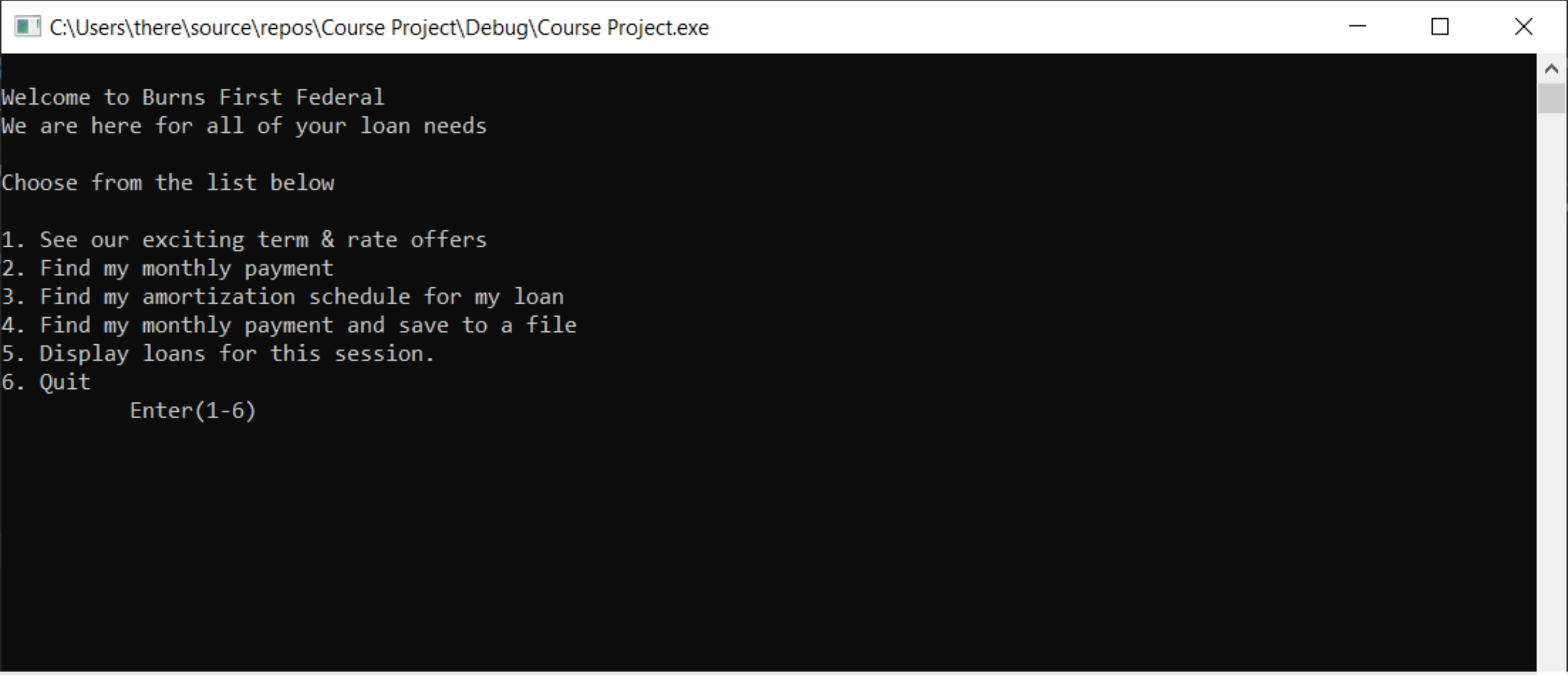
I developed a program for a bank that will allow it to process loans for customers. The user will enter information, such as interest rate, length of loan, amount borrowed, and the program will compute the missing information. It will also be able to display a report showing the terms for the loan. Customer data will be able to be saved and retrieved from a file or files.

I.P.O.

Input	Process	Output
Interest Rate, Length of Loan, Amount Borrowed.	Interest Rate * Length of Loan * Amount Borrowed = Payment	Display a report showing the terms of the loan as well as saving the file.

Flowchart


Start
User input
loan amount
User Input
Interest Rate
User Input
term in years
Amount * Interest
Rate * Term of Loan
= Payment
Out showing
payment wi
th amortization
schedule and
saved as a file
Stop

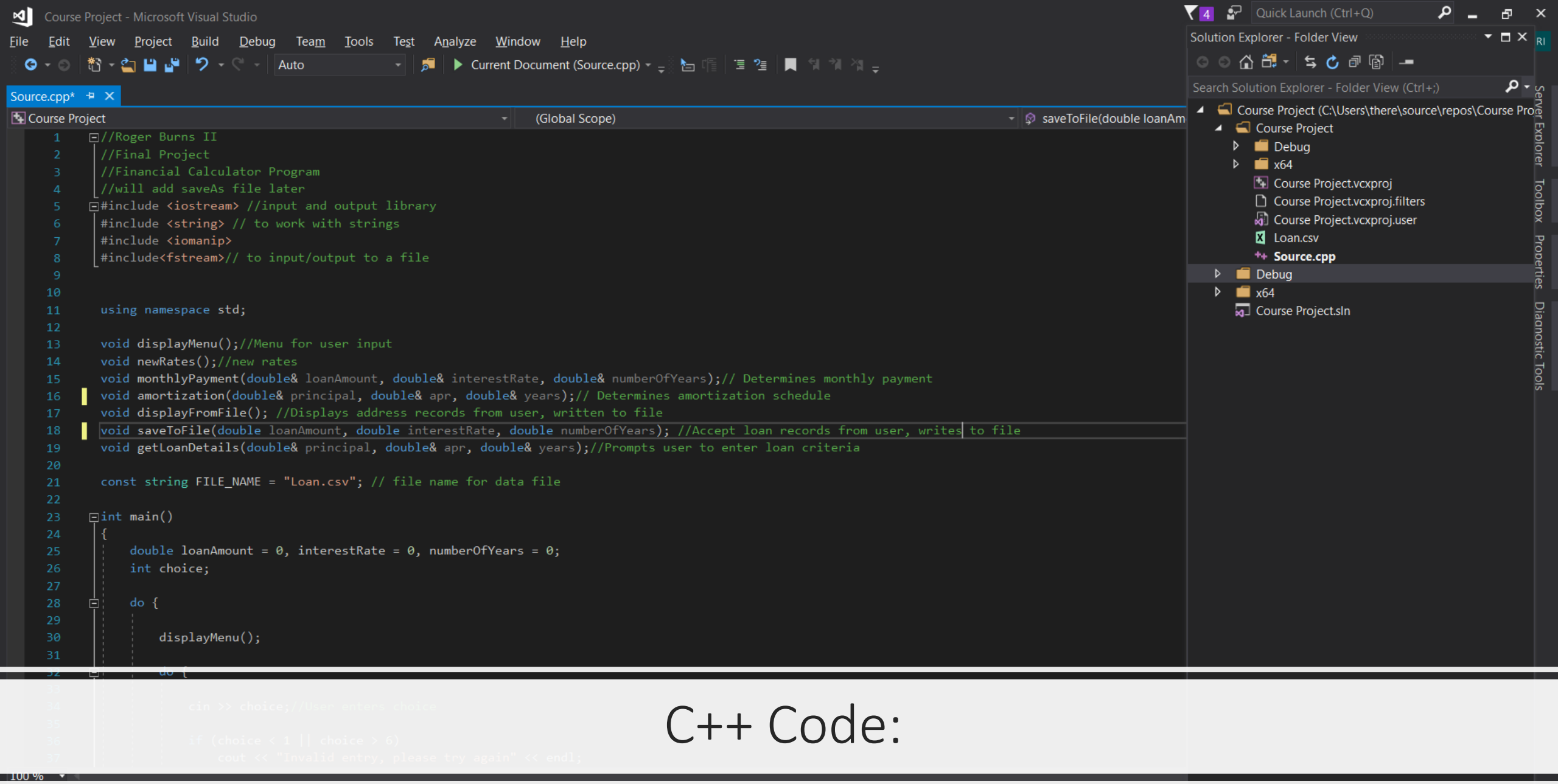


Welcome Screen

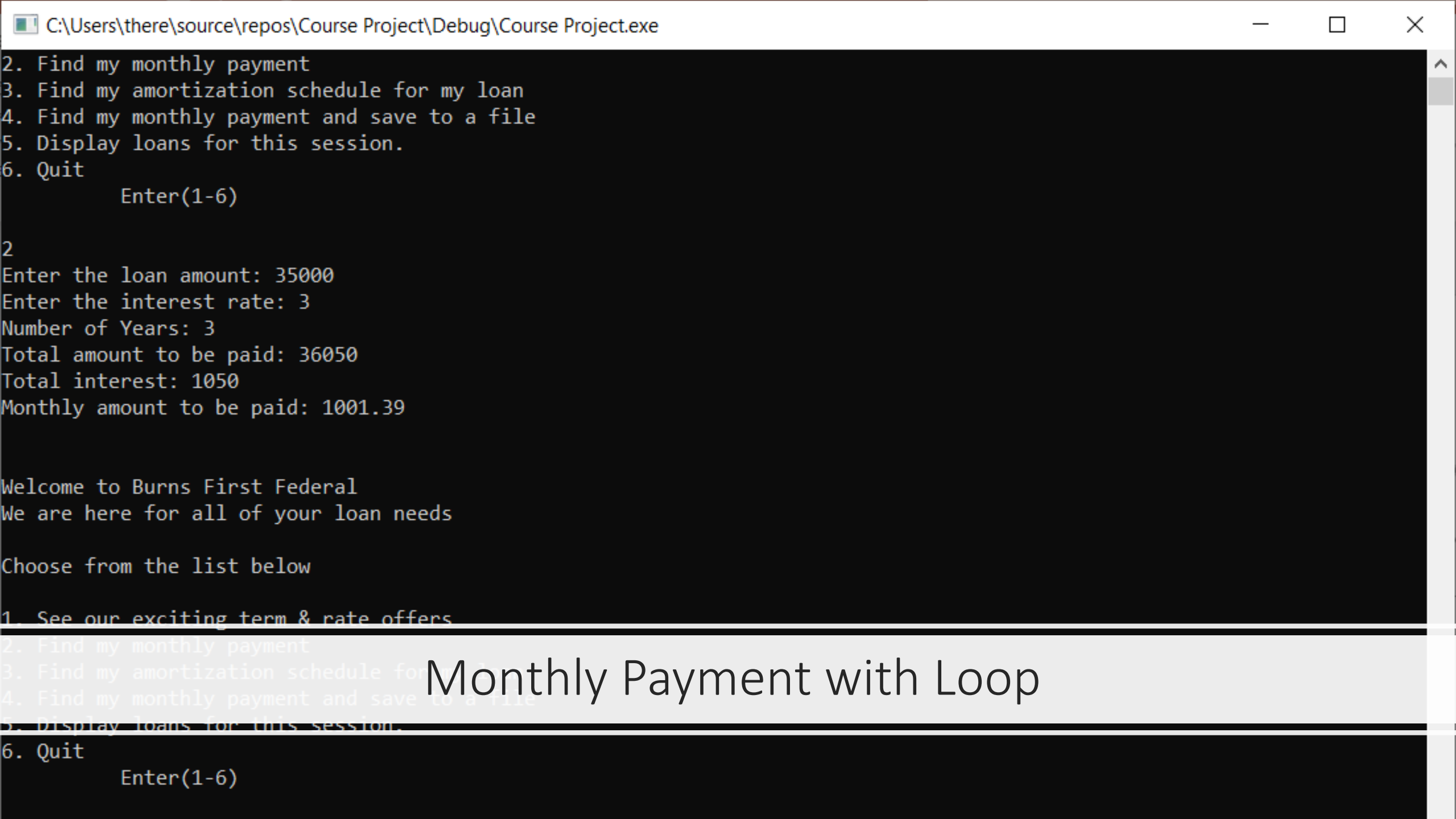
C:\Users\there\source\repos\Course Project\Debug\Course Project.exe

Rate and Term Offers with loop

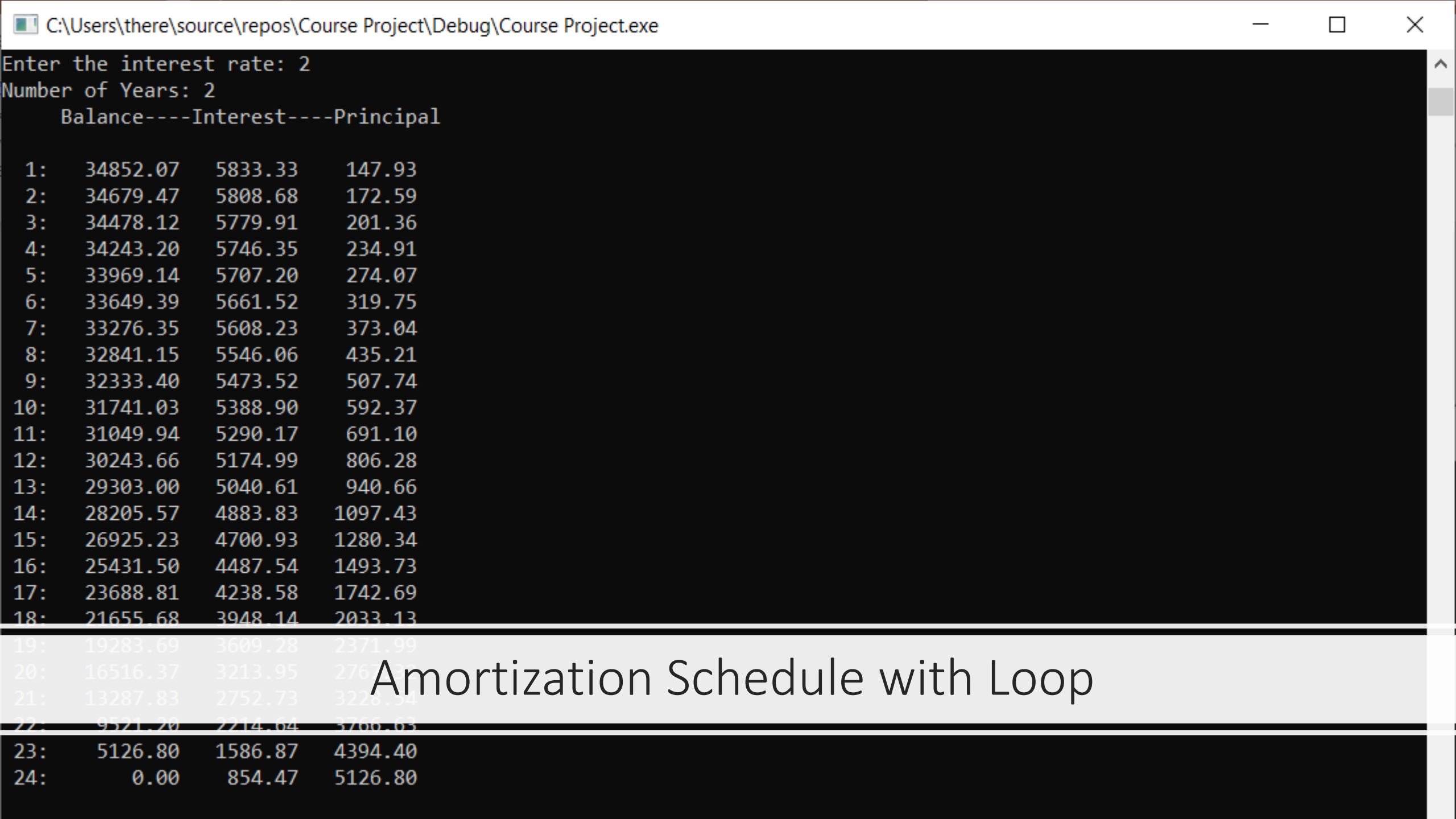
```
Welcome to Burns First Federal
We are here for all of your loan needs

Choose from the list below

1. See our exciting term & rate offers
2. Find my monthly payment
3. Find my amortization schedule for my loan
4. Find my monthly payment and save to a file
5. Display loans for this session.
6. Quit
          Enter(1-6)

1
Term-----------Rates
1 Year(s) is 1 percent.

2 Year(s) is 2 percent.

3 Year(s) is 3 percent.

4 Year(s) is 4 percent.

5 Year(s) is 5 percent.

Press any key to continue . . .
```


Course Project - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Auto
Current Document (Source.cpp)
Quick Launch (Ctrl+Q)
Source.cpp*
Course Project
(Global Scope)
saveToFile(double loanAm
1 //Roger Burns II
2 //Final Project
3 //Financial Calculator Program
4 //will add saveAs file later
5 #include <iostream> //input and output library
6 #include <string> // to work with strings
7 #include <iomanip>
8 #include<fstream>// to input/output to a file
9
10
11 using namespace std;
12
13 void displayMenu();//Menu for user input
14 void newRates();//new rates
15 void monthlyPayment(double& loanAmount, double& interestRate, double& numberOfYears);// Determines monthly payment
16 void amortization(double& principal, double& apr, double& years);// Determines amortization schedule
17 void displayFromFile(); //Displays address records from user, written to file
18 void saveToFile(double loanAmount, double interestRate, double numberOfYears); //Accept loan records from user, writes to file
19 void getLoanDetails(double& principal, double& apr, double& years);//Prompts user to enter loan criteria
20
21 const string FILE_NAME = "Loan.csv"; // file name for data file
22
23 int main()
24 {
25 double loanAmount = 0, interestRate = 0, numberOfYears = 0;
26 int choice;
27
28 do {
29
30 displayMenu();
31
cin >> choice;//User enters choice
if (choice < 1 || choice > 6)
cout << "Invalid entry, please try again" << endl;
100 %
Solution Explorer - Folder View
Search Solution Explorer - Folder View (Ctrl+;)
Course Project (C:\Users\there\source\repos\Course Pro
Course Project
Debug
x64
Course Project.vcxproj
Course Project.vcxproj.filters
Course Project.vcxproj.user
Loan.csv
Source.cpp
Debug
x64
Course Project.sln
Server Explorer
Toolbox
Properties
Diagnostic Tools
Output
Show output from: Debug
The thread 0x6938 has exited with code 0 (0x0).
The thread 0x3424 has exited with code 0 (0x0).

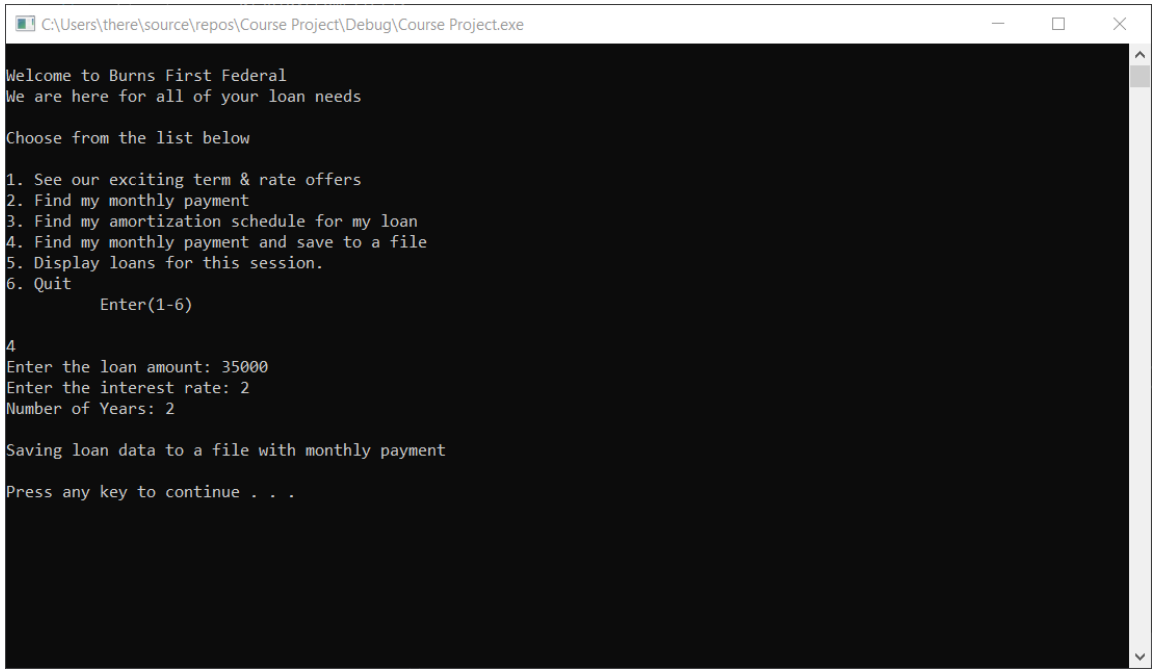
C++ Code:

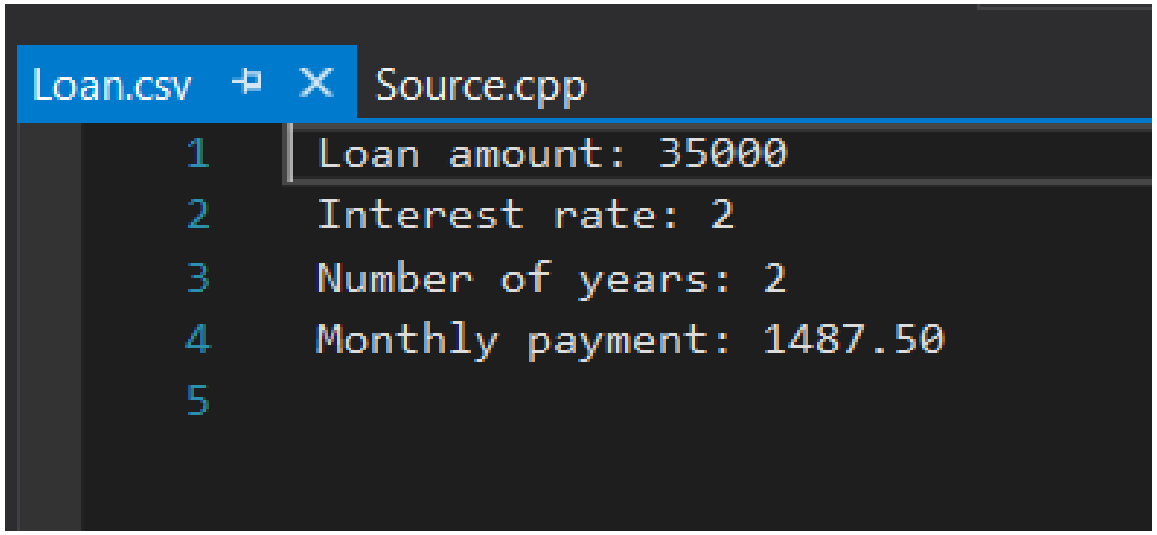


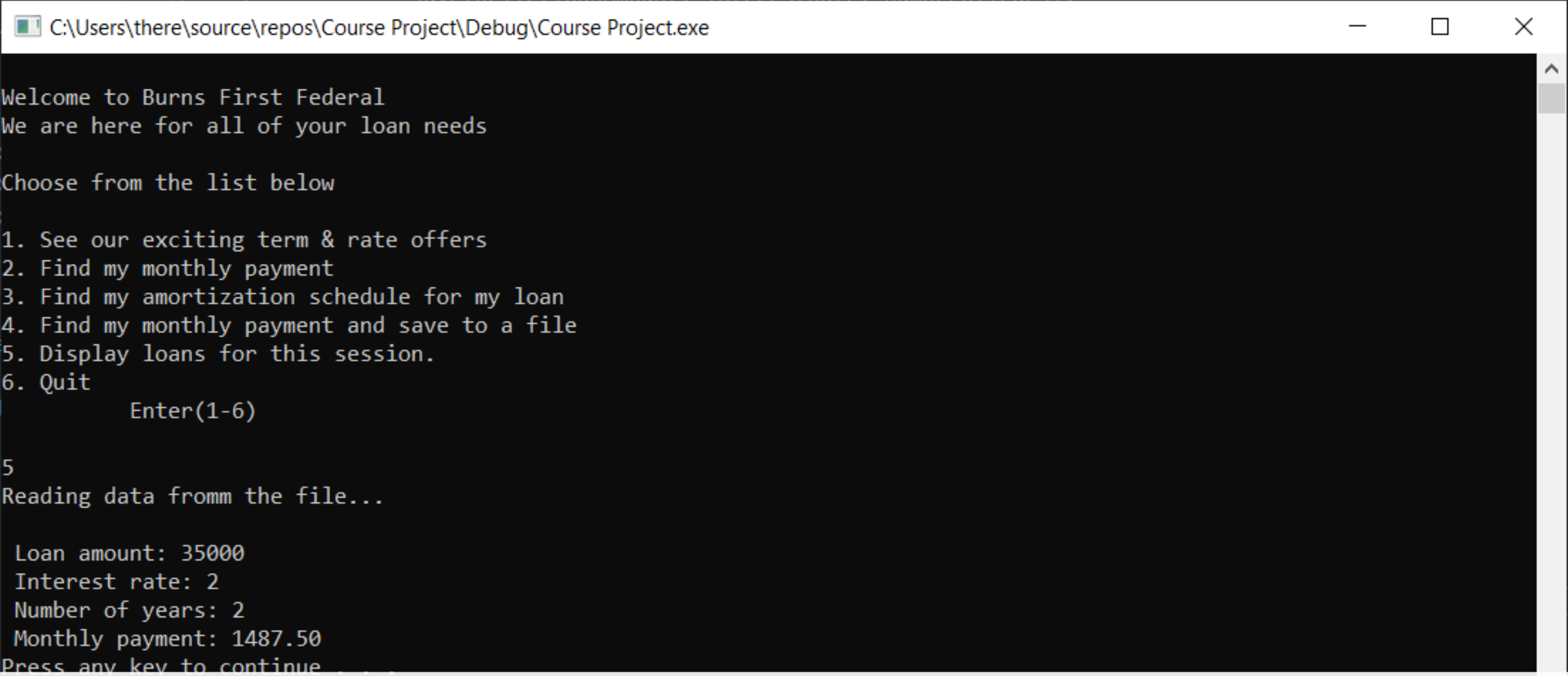
Monthly Payment with Loop


C:\Users\there\source\repos\Course Project\Debug\Course Project.exe
Enter the interest rate: 2
Number of Years: 2
Balance----Interest----Principal
1: 34852.07 5833.33 147.93
2: 34679.47 5808.68 172.59
3: 34478.12 5779.91 201.36
4: 34243.20 5746.35 234.91
5: 33969.14 5707.20 274.07
6: 33649.39 5661.52 319.75
7: 33276.35 5608.23 373.04
8: 32841.15 5546.06 435.21
9: 32333.40 5473.52 507.74
10: 31741.03 5388.90 592.37
11: 31049.94 5290.17 691.10
12: 30243.66 5174.99 806.28
13: 29303.00 5040.61 940.66
14: 28205.57 4883.83 1097.43
15: 26925.23 4700.93 1280.34
16: 25431.50 4487.54 1493.73
17: 23688.81 4238.58 1742.69
18: 21655.68 3948.14 2033.13
19: 19283.69 3609.28 2371.99
20: 16516.37 3213.95
21: 13287.83 2752.73
23: 5126.80 1586.87 4394.40
24: 0.00 854.47 5126.80
Amortization Schedule with Loop

Monthly payment saving to a .csv file







Display Loan Terms from .csv file with loop

Conclusion

This program asks the user if he or she wants to calculate the monthly payment of a loan. The program then asks for the required information and solves for the remaining value.

Challenges with my code:

In working with the display function I was challenged with the only input being received was the first integer in the file. I altered the data type from int to string and was able to receive the correct input.