Course Project Documentation

CS101 Projects 2014

My Money Tracker

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1 Introduction

In this hectic and running around kind of life it is tough to keep track of many things which we constantly use, one of them being money. The app which we currently developed is useful for exactly that, keeping a track of your money. As the name suggests, it keeps track of your money flow.

It is useful to keep track of expenses and income to wisely regulate our money flow. As it is common among students to take and give loans, this feature also has been included. Plus there is a feature to add your monthly salary or scholarship to your income automatically when you set this feature.

2   Problem Statement

As mentioned earlier the goal of the project is to develop a computer application which stores your expenses, incomes and loans.

It tabulates the data on the basis of time and category to give a proper idea of when and where your money is coming from or going to.

The salary or scholarship is automatically added every month on the day it would be received.

3   Requirements

As it is a basic utility application no extra hardware requirements.

For software requirements, a proper IDE, which in the current case is 'Codeblocks'. For the graphical representations 'graphics.h' library has been used.

To run the application no software or hardware is required.

4 Functionality

a) **Income**- You can add income and the incomes which have been added can be viewed as a list with the date of when it was added.

b) **Expense**- Similar to income, here also we add expenses but to a specific category of expense. So when you want to view expenses there are many options. You can view all the expenses irrespective of category, or based on month of expense, or based on category of expense. Also the expenses can be viewed in a graphical manner wherein you can see bar graphs of monthly expenses or category-wise expense.

c) **Loan**- As it is common for students in hostels to lend and borrow money. There is a feature to keep a track of whom you took money from or given and also when and how much. There is a feature to clear these lists when you have given back the amount to a certain person or a person has paid you back.

d) **Balance**- In the above functions money is going out and coming in constantly. So this is a function which shows how much money you currently have.

e) **Salary**- So as to make it easier for the user. Instead of adding your salary every month. If you set the salary and the date when you receive the salary, the app automatically adds the salary at the beginning of the month.
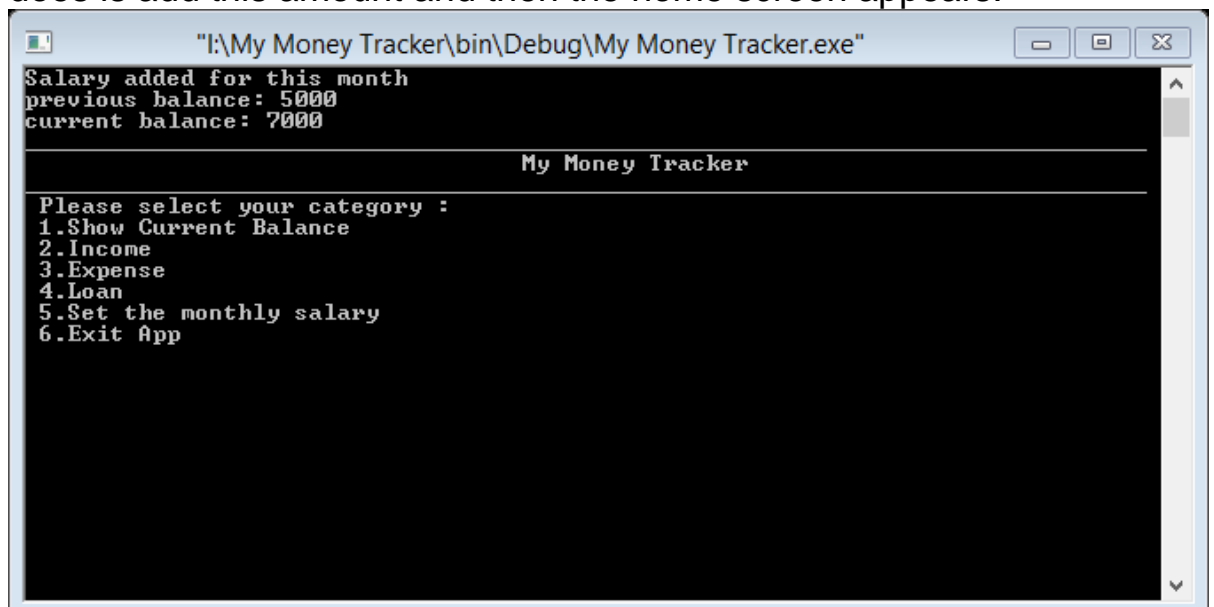
5 Working and Data

Let's see the working of the app now. We will see the working of all the functionalities.
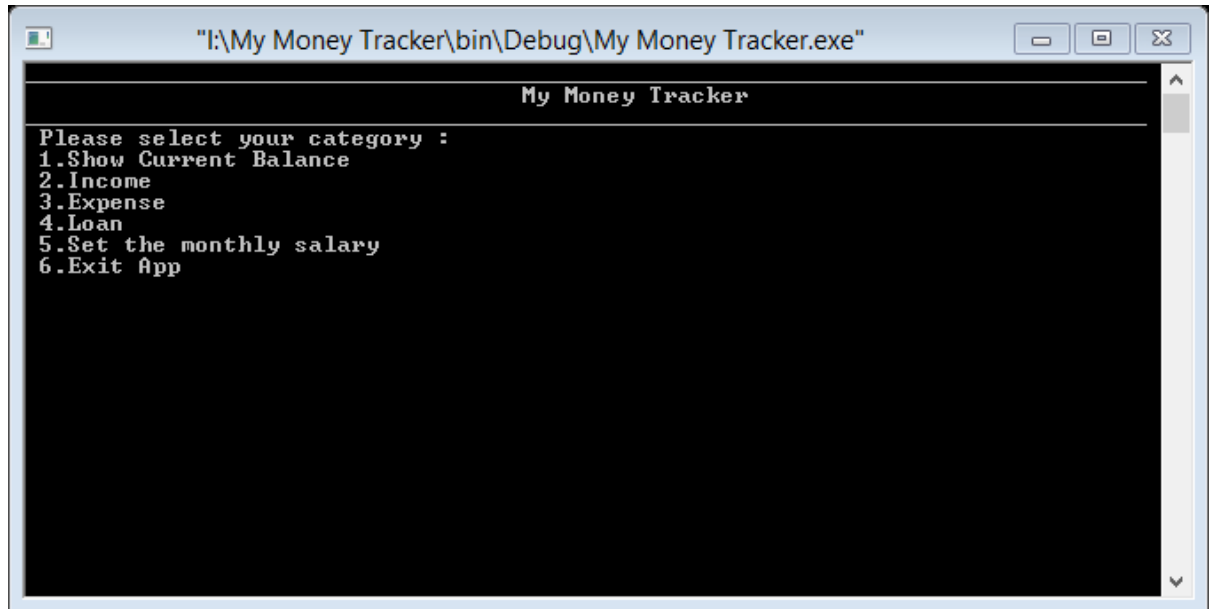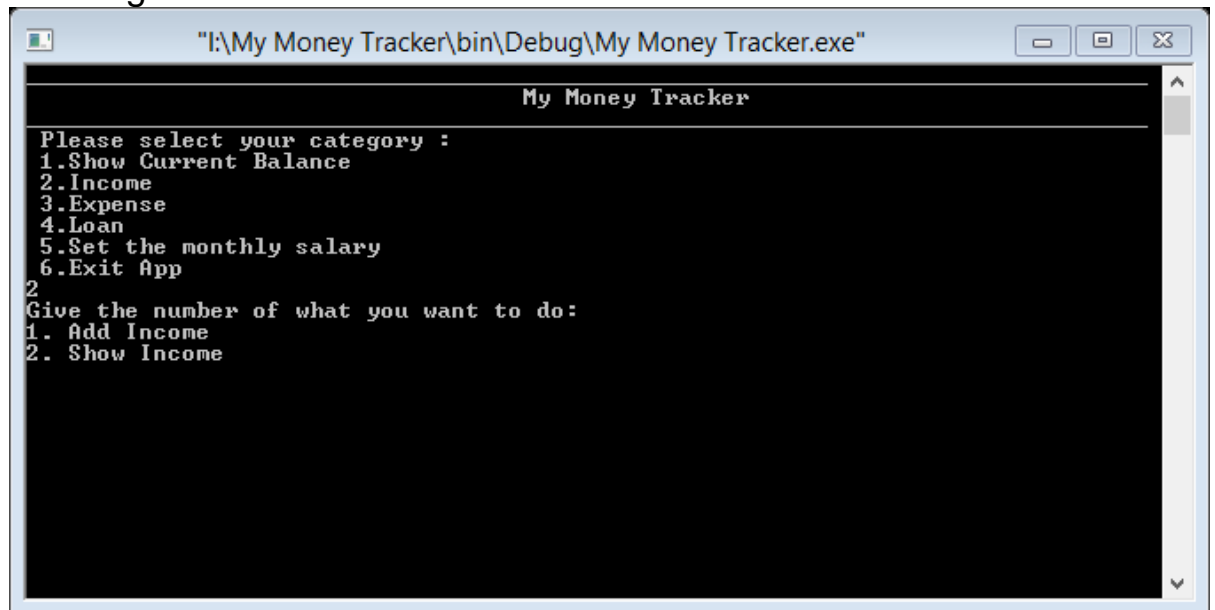

This is the home screen which is shown when the application is opened.

If the salary is not added for the current month then the first thing it does is add this amount and then the home screen appears:

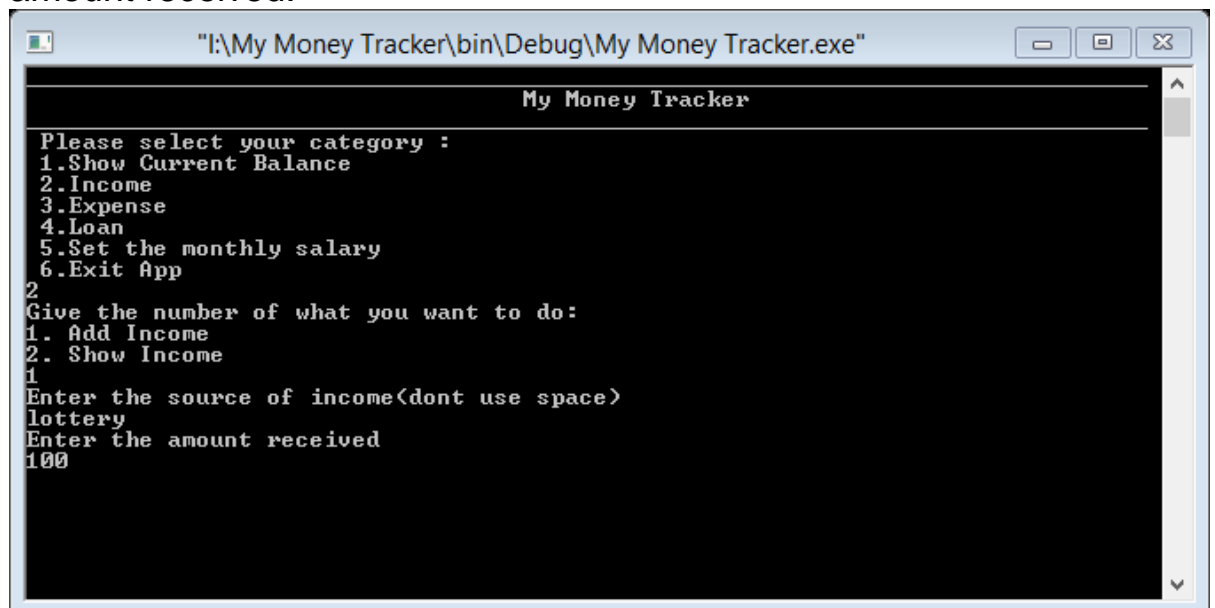When the Income function is called it presents a choice of adding or showing:

When you want to add income it asks for the source of income and amount received:
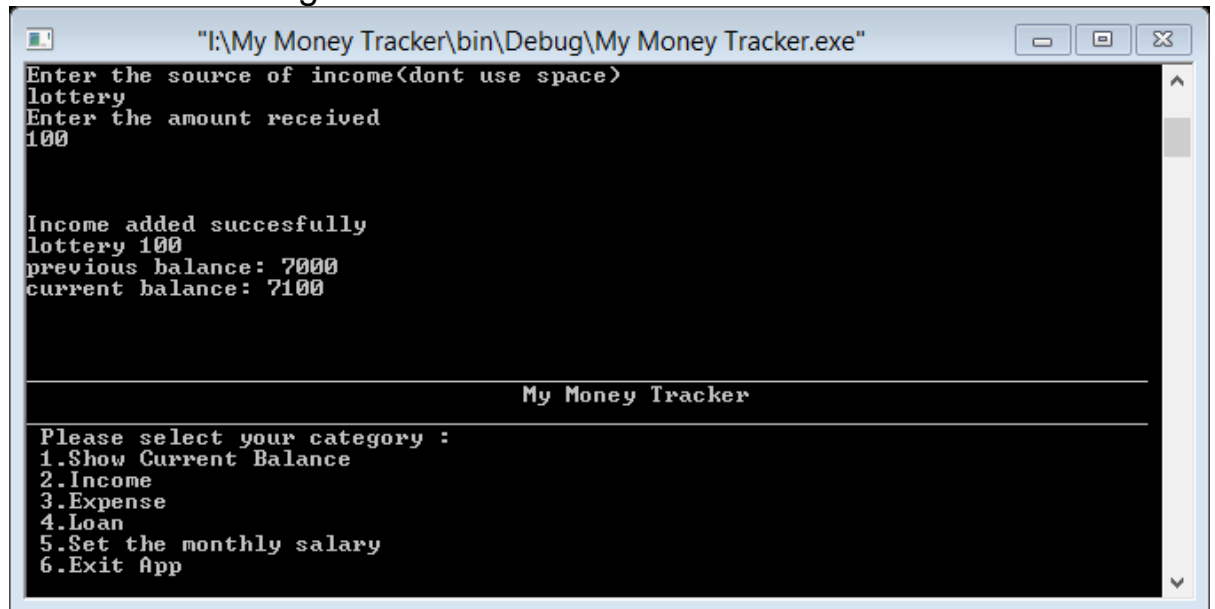
Then it adds the income and updates your balance. Then the home screen is called again:

```
■                "I:\My Money Tracker\bin\Debug\My Money Tracker.exe"        ─  ▢  ☒
Enter the source of income(dont use space)                                        ^
lottery
Enter the amount received
100


Income added succesfully
lottery 100
previous balance: 7000
current balance: 7100

────────────────────────────────────────────────────────────────────────
                              My Money Tracker
────────────────────────────────────────────────────────────────────────
Please select your category :
1.Show Current Balance
2.Income
3.Expense
4.Loan
5.Set the monthly salary
6.Exit App                                                                        ∨
```
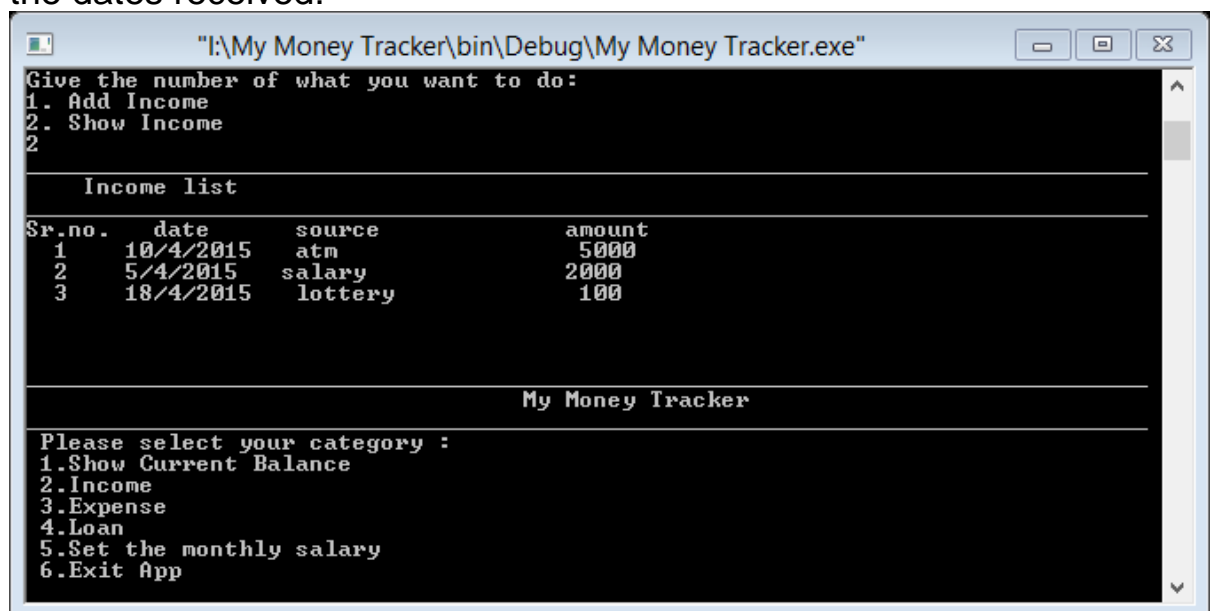
If the Show income function is called it gives a list of incomes and the dates received:

```
■                "I:\My Money Tracker\bin\Debug\My Money Tracker.exe"        ─  ▢  ☒
Give the number of what you want to do:                                           ^
1. Add Income
2. Show Income
2
────────────────────────────────────────────────────────────────────────
     Income list
────────────────────────────────────────────────────────────────────────
Sr.no.   date        source            amount
   1    10/4/2015    atm                5000
   2    5/4/2015     salary             2000
   3    18/4/2015    lottery             100


────────────────────────────────────────────────────────────────────────
                              My Money Tracker
────────────────────────────────────────────────────────────────────────
Please select your category :
1.Show Current Balance
2.Income
3.Expense
4.Loan
5.Set the monthly salary
6.Exit App                                                                        ∨
```
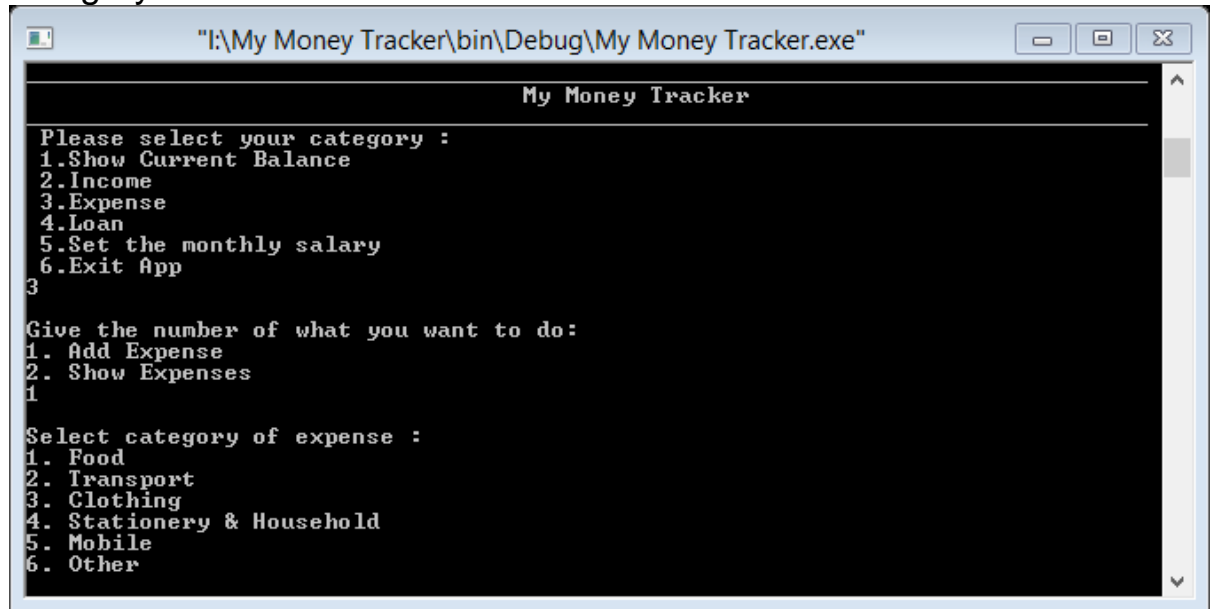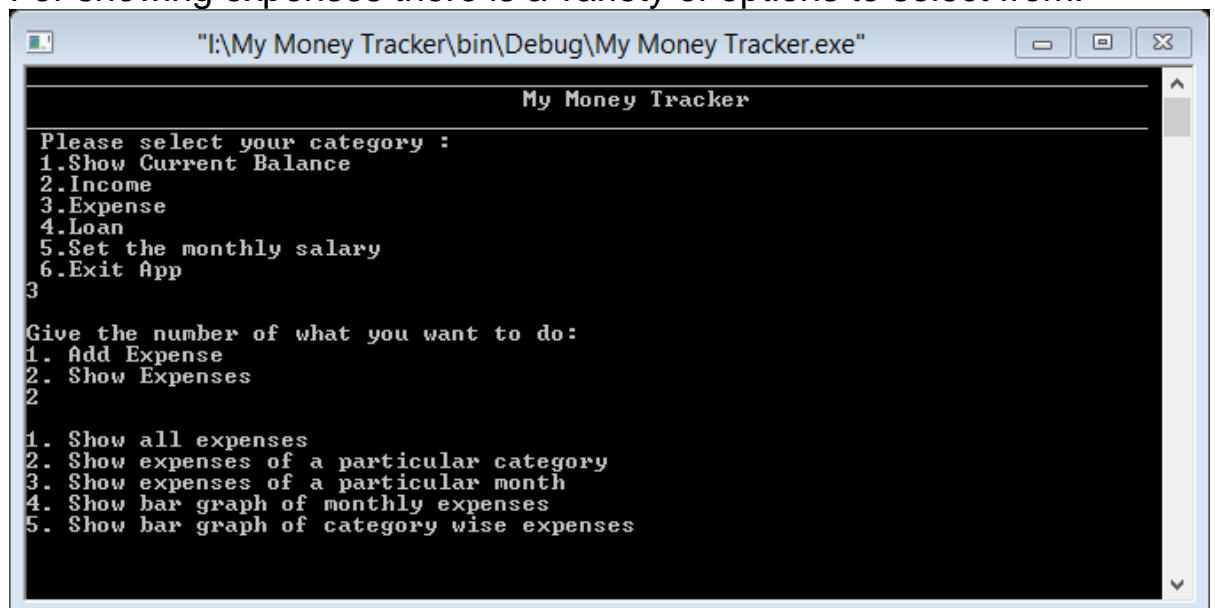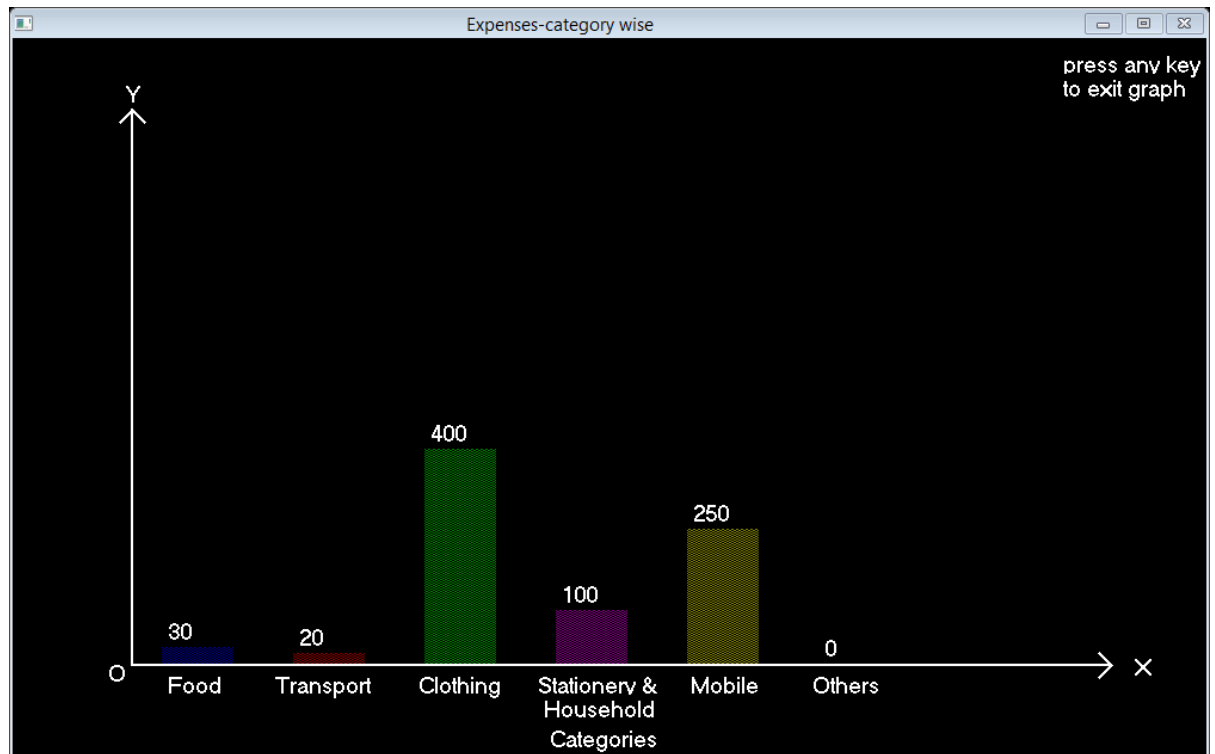
Adding expenses is similar to adding income but it also asks for the category to add:

For showing expenses there is a variety of options to select from:

Bar graphs of expenses based on category and month can be viewed:

Loan giving and taking is similar. There is a feature to clear loans which specifically displays the list and asks what you want to clear:
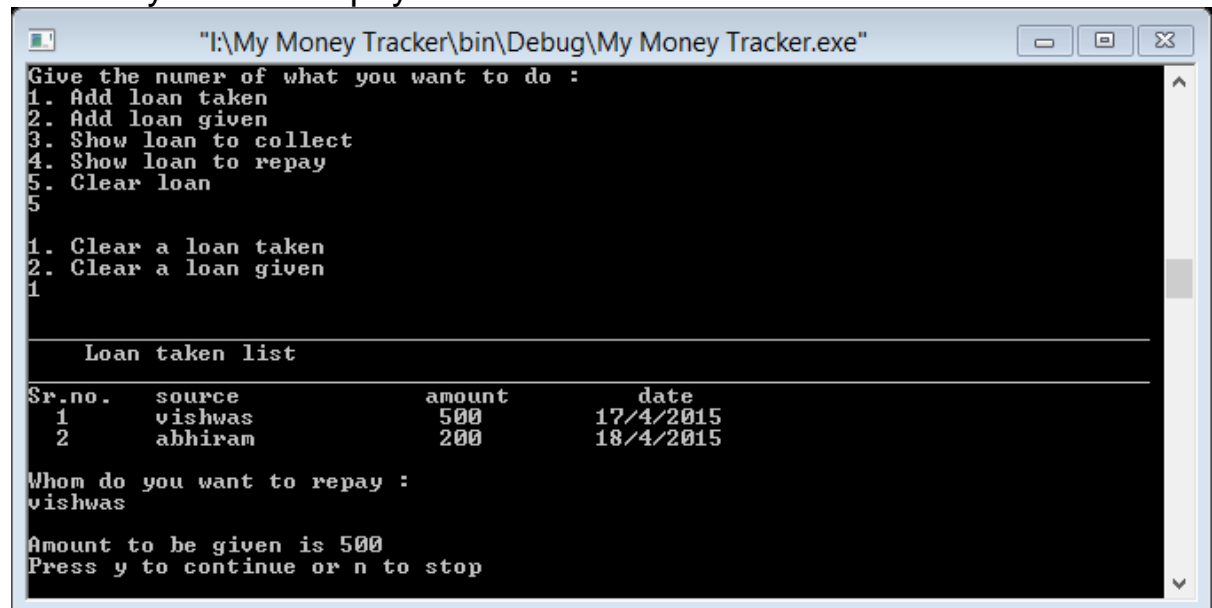
By entering the name it will ask for confirmation displaying the amount you have to pay back or take:

```
"I:\My Money Tracker\bin\Debug\My Money Tracker.exe"

Give the numer of what you want to do :
1. Add loan taken
2. Add loan given
3. Show loan to collect
4. Show loan to repay
5. Clear loan
5

1. Clear a loan taken
2. Clear a loan given
1


       Loan taken list
_____
Sr.no.    source           amount            date
   1      vishwas           500           17/4/2015
   2      abhiram           200           18/4/2015

Whom do you want to repay :
vishwas

Amount to be given is 500
Press y to continue or n to stop
```
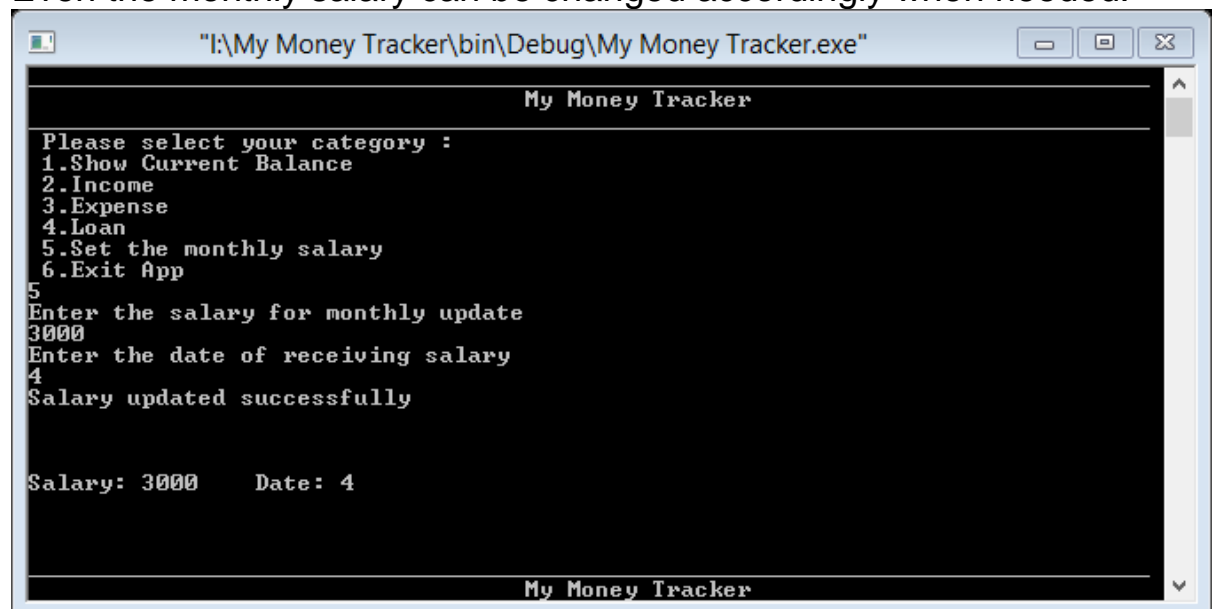
Confirming will update the balance and remove the name from the list.

Even the monthly salary can be changed accordingly when needed:

```
"I:\My Money Tracker\bin\Debug\My Money Tracker.exe"

                        My Money Tracker
_____
 Please select your category :
 1.Show Current Balance
 2.Income
 3.Expense
 4.Loan
 5.Set the monthly salary
 6.Exit App
5
Enter the salary for monthly update
3000
Enter the date of receiving salary
4
Salary updated successfully



Salary: 3000    Date: 4
_____
                        My Money Tracker
```

Finally when you want to exit the app it asks for a confirmation and closes:

```
                    "I:\My Money Tracker\bin\Debug\My Money Tracker.exe"              — ▢ ✕
                           My Money Tracker

 Please select your category :
 1.Show Current Balance
 2.Income
 3.Expense
 4.Loan
 5.Set the monthly salary
 6.Exit App
6
Press 'y' if you really want to exit
To go back press any other character
y

                      @^Thanks for using the app^@


Process returned 0 (0x0)    execution time : 3.748 s
Press any key to continue.
```
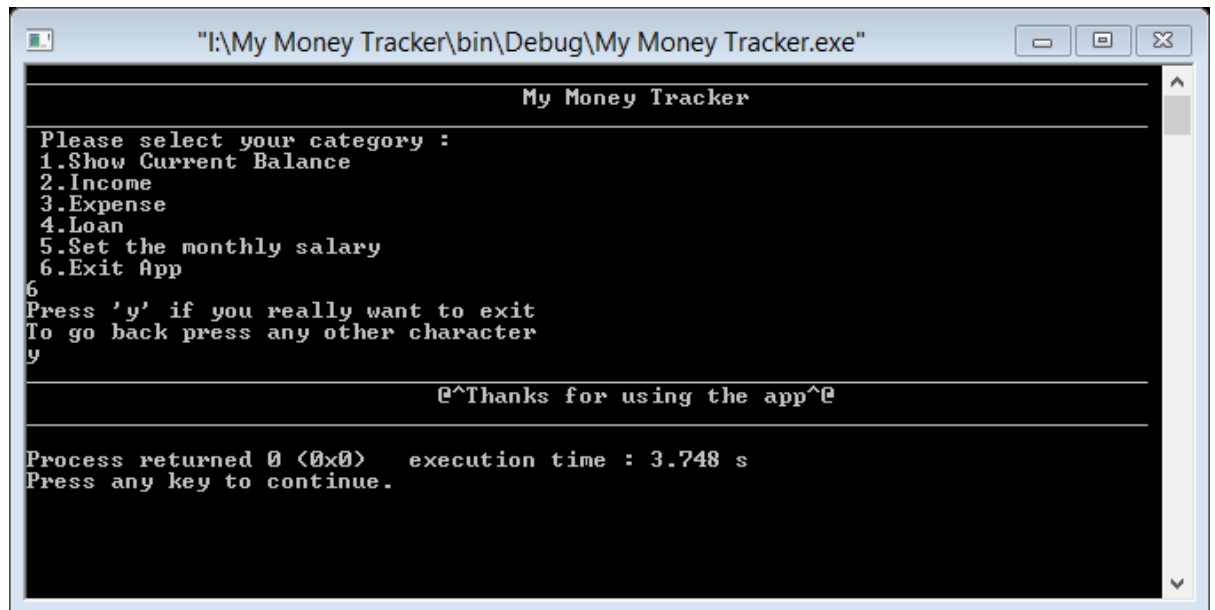
6 Discussion of System

6.1 What have worked as per plan

- Income Listings
- Expense tabulation based on category
- Dynamic balance changing

6.2 What we added more than discussed in SRS

- Adding time to when the income or expense was added
- Tabulation of expenses based on time
- Adding the loan functionality
- Showing expenses with bar graphs
- Setting automatic salary adding monthly

6.3 Changes made in plan

- GUI interface was planned which could not be done due to installation issues with 'gtkmm' and 'Qt'.
  Reason- Qt installation errors and time limitation as we started trying with Qt at the end. Integrating the libraries of gtkmm was problematic and couldn't be successfully completed.

7   Challenges

The biggest challenge we faced and which also happened to be our biggest mistake was wasting too much time and human resource on developing the GUI. Badly for us even after wasting that much time on that we couldn't develop the GUI.

Another challenge was file handling. Reading from files and converting the variables into suitable types for comparing and tabulating.

8   Future Work

There is a lot of space for future development. Being a utility application it can be further extended by adding other required functions.

Also work can be done in the graphical methods of showing data, as the current method is still very crude.

Another area where there is future scope is developing the GUI which we failed to do.

9 References

1) File Operations:
   "An Introduction to Programming through C++"
   Book by Prof .Abhiram Ranade

2) File Operations:
   'cstdio' library
   "http://www.cplusplus.com/reference/cstdio/ " (last viewed on:
   April 18, 2015)