

# Programming Assignment #1

## Monthly Budget

CS 2308.003 and 004 Fall 2018

Instructor: Jill Seaman

**Due: Wednesday, 9/12/2018:** upload electronic copy by 9:00am!

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A student has established the following monthly budget:

Housing	500.00
Utilities	150.00
Transportation	50.00
Food	250.00
Entertainment	150.00
Miscellaneous	50.00

Write a program that stores the following data about each budget category in a structure called `Category`:

- The name of the category
- The amount allocated to the category
- The amount spent on that category so far this month

The program should keep an array of these structures, one per category. When the program runs, it should initialize the array using the data above, and 0 for the amount spent so far this month.

Then it should repeat a loop that performs the following steps: The user should see a table of the categories with the allocated amounts, and amount spent so far this month. The user can choose to select a category, display the table, or quit. When a category is selected, the user can enter an amount of money to be **added** to the amount spent on that category so far this month.

When the user quits the program, the program should display a message indicating the amount over or under for the entire monthly budget. Please see sample output in the file **output1.pdf** on the class website. Note: your output should look at least as nice as mine (data lined up in columns, formatted to two decimal points, etc).

### **Your program must include three functions:**

- one to display the table,
  - one to process the user's selection, and
  - one to determine the amount over or under budget for the month.
- These functions should take an array of Category (and perhaps other values) as arguments.

### **Additional Requirements:**

- Your program **must compile** and run, otherwise you will receive a score of 0.
- Your program must give correct results for any valid input data. You should assume the grader may change the names, amounts, and number of categories in your program, and (a) it should be easy for the grader to do this and (b) the program should still give correct results.
- Please do not use any features of C++ that we have not yet covered in class (use features from Chapters 1-7, 11 only). Do not use classes!
- **Style:** See the Style Guidelines document on the course website. Especially pay attention to the **comments** required for the top of the file and for each function. The grader will (most likely) deduct points if your program violates the style guidelines.

### **Logistics:**

Name your file **assign1\_XXXXX.cpp** where XXXXX is your TX State NetID (your txstate.edu email id).

There are two steps to the turn-in process:

1. Submit an **electronic copy** using the Assignments tool on the TRACS website for this class ([tracs.txstate.edu](http://tracs.txstate.edu)).
2. Submit a **printout** of the source file at the beginning of class, the day after the assignment is due. Please **print your name on top of the front page**, and staple if there is more than one page.

See the assignment policy on the course website ([cs.txstate.edu/~js236/cs2308](http://cs.txstate.edu/~js236/cs2308)) for more details, including deadlines, penalties, and where to submit printouts outside of class.