# Program 2 –Review of C – Data Types

For this project, each student is to write a menu-driven program called **prog2.c** that allows the user to enter and display data about a single politician. The programmer should gain an understanding of:

* **Storage types**
* **Formatted input and output**
* **Processing a menu**
* **Handling uninitialized data**
* **Verifying valid input**

**Program Operation**

The program should keep track of the following quantities for a *single* politician:

* **First Name**: a single string with a maximum of 32 characters.
* **Middle Initial**: a single character and can be null.
* **Last Name**: a single string with a maximum of 32 characters.
* **Suffix**: a string of at most 3 characters and can be null.
* **Age**: an integer from **21** to **99** years inclusive.
* **Sex**: a single character, **‘M’** or **‘F’**.
* **Office Held**: a string of at most 32 characters.
* **Years Served**: a two-digit integer from **0** to **99**.
* **Political Party**: should be stored as an integer **1** through **5** and displayed as the strings given below:

**1**-**Constitution**, **2**-**Democrat**, **3**-**Green**, **4**-**Libertarian**,

**5**-**Republican**

* **State**: two-character abbreviation for home state (e.g. **AL**, **SC**) to be chosen from a list provided.
* **Twitter Account**: a string with a maximum of 15 characters. (Ampersand is not entered but is shown when displayed, e.g. “**@CheathamNSteele**”)
* **Phone Number**: a ten-digit number input *and* displayed as **(666)555-4444**.
* **US Dollars Received:** a floating-point number from **0.0** to **1.0**x**1050**, inclusive.
* **Number of Lies Told:** a floating-point number from **0.0** to **1.0**x**10100**, inclusive.

***Note***: Initially, all quantities are to be initialized as an “unknown value” and should be denoted as such when displayed. It’s up to the programmer to decide what values to store to represent unknown values.

**Menu**

The program should have eight input options in the menu which perform the following tasks:

|  |  |
| --- | --- |
| * **Enter Name** * **Enter Years, Party, Office, and State** * **Enter Age and Sex** * **Enter Contacts** * **Enter Contributions and Lies** | * **Display the Data** * **Clear all Data** * **Quit** |

The specific format of the menu and its display is not specified, but it must be straight-forward and readable.

**Input**

The program should allow the user to select only one of the above options at a time. An error message should be displayed if an invalid option is chosen. For the options requiring data input, the program should prompt for the appropriate data when the option is selected. If the data input is invalid, an error message should be given. Upon completing any option (except “**Quit**”), the program should redisplay the menu.

**Output**

The program should only display data if that option is selected. When it is selected, the program should print all data indicating which—if any—data is unknown.

**Along with the aforementioned items, the program should also compute and display the ratio of contributions to lies told (given in units of dollars per lie, displayed with two decimals places.)**

**Further Considerations**

Your program should be structured neatly, easily readable, and well commented. Furthermore, variable and function names should be such that the software is as “self-commenting” as possible.

**Creation and Submission**

***Each individual student must complete their own program. Copying other students’ code will be tested for and will not be tolerated.***

Use the following line to compile your program

**gcc -Wall -g prog2.c -o prog2**

The code you submit must compile using the **–Wall** flag and no compiler errors or warnings should be printed. To receive credit for this assignment your code must compile and at a minimum perform some required function.

Code that does not compile or crashes before performing some required function will not be accepted or graded. **All students must do a final check on one of the CES Ubuntu machines to verify that gcc using Ubuntu shows no warning messages before submitting your project.**

Submit your program on Blackboard before midnight on **Monday, February 4th**.