1. Using assignment #2, derive a SoftwareTester class from the student class. Add the following data members to the a SoftwareTester class:
   1. A character pointer for the SoftwareTester’s address (e.g. char \* address)
   2. A character pointer for the SoftwareTester’s city
   3. A character pointer for the SoftwareTester’s state
   4. A zip code
2. Write and test change address, city, state, and zip code member functions for the SoftwareTester class.
3. Write a copy constructor for the SoftwareTester class.
4. Write a deep copy member function for the SoftwareTester class.
5. Change the print SoftwareTester function to display all its data members.
6. Change the age and city of a SoftwareTester. Test your change methods.
7. Use at least on user defined namespace.

Note: (a) Your constructors for the SoftwareTester class that have parameters should use dynamic memory and (b) you will have to write a destructor that frees dynamic memory

Test your program by

Adding a cout statement to your copy constructor, constructors, and destructors.

1. Write a function that passes by copy (the copy constructor should be called)
2. Write a function that passes by reference
3. Write a function that returns by copy (the copy constructor should be called)
4. Write a function that returns by reference (the copy constructor should not be called)
5. Use the initialization construct (the copy constructor should be called)
6. Test your deep copy function

SoftwareTesters

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Student’s Id | Phone | Age | Gender | Class standing | GPA |
| Joe Calculus | 64879 | 945-555-1234 | 22 | M | Freshman | 3.3 |
| Mary Algebra | 76309 | 312-555-5555 | 19 | F | Sophomore | 3.26 |
| Jo Trig | 10192 | 713-703-1234 | 24 | F | Sophomore | 3.29 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Address | City | State | Zip Code |
| Joe Calculus | 1234 Main Avenue | Laguna Niguel | CA | 92677 |
| Mary Algebra | 3333 Marguerite Pkwy | Mission Viejo | CA | 92646 |
| Jo Trig | 9876 Elm Street | San Clemente | CA | 92672 |

October 2nd