Pair Programming 4 Activities

* **Always use the pair programming tests to ensure your program works properly.**
* **Take a screen shot of each execution in the tests.**
* **Download the source code file for inclusion in the turn in document.**
* **Turn in pair programming activities using the pair programming turn in document.**
* **It is each individual’s responsibility to turn in the assignment and pair programming is graded individually so make sure you share the work you and your partner did together as you go.**
* **You can only earn 50% of pair programming points if you do not work with your partner.**
* **Do not share work with your partner that you did not do together. If your partner is MIA, notify your instructor for an alternate plan.**
* **Make sure you have your partner’s name, username and contact information such as Pellissippi WebMail.**

4a. (2 points) Write a C++ program in file pp4a.cpp to randomly select one card from a regular 52-card deck of cards. Use one or more switch statements. Print the words of the card, for example, “Two of spades”. Do NOT print the numbers such as “2 of 3” or even “2 of spades”. Don’t forget to seed the random number generator, Hint: pick a random number between 1 and 13 for the face and 0 and 3 for the suit. Declare and use constants for all face and suit values such as:  
const int ACE = 1;

const int TWO = 2;

const int CLUBS = 0;

4b. (2 points) In a file called pp4b.cpp, write a function called squareAndPrint that asks the user for a number, computes its square (x \* x) and prints it out. The function doesn’t return anything and it has no parameters. Write a main function that calls squareAndPrint.

4c. (2 points) In a file called pp4c.cpp, write a C++ function that calculates the total cost of many of the same item. It has 2 parameters, the cost of one item and the number of items. This is like buying 10 bags of cat litter at Costco and the cashier just scans one of the bags and types in 10 for the number of bags. The function calculates the total cost of these items including tax and uses a return statement to return the total cost. Write a main function that gets the number of items and the cost of a single item from the user and calls this function to calculate the total cost. The main function prints the total cost. Declare and use a global constant for the tax rate of 9.25%.

4d. (2 points) In a file called pp4d.cpp write a C++ function called cube that computes the cube of a number. It has one parameter (the number) and returns the number’s cube. It does not have any I/O statements in it, unlike squareAndPrint above. Write a main function that calls the cube function in a while or do while loop to compute the cube of multiple numbers entered by the user. Use a sentinel value of 0 for the number to end. The main function will display the results.

4e. (2 points) In a file called pp4e.cpp, write a C++ function called isPositive that takes an integer parameter and returns true if it is positive (greater than or equal to 0) or false if it is negative. Write a main function that calls isPositive with the following code inside a do while loop. Use a sentinel value of 0 for the number to stop the loop.

if ( isPositive( number ) )

cout << number << “ is positive\n”;

else

cout << number << “ is negative\n”;