CSY2006 Week 3

Lab Exercises:

1. Write a function named getDistance() that accepts a vehicle's speed and time as arguments, and returns the distance the vehicle has traveled. Distance = Speed * Time. Demonstrate the function in a complete program.

2. Write a min() function that returns the smallest of two given integers. Write another min() function that uses the previous min() function to return the smallest of three given integers. Demonstrate both functions in a program.

3. Raising a number n to a power p is the same as multiplying n by itself p times. Write a function called power() that takes a double value for n and an int value for p, and return the result as a double value. Use a default argument of 2 for p, so that if this argument is omitted, the number n will be squared. Write a main() function that gets values from the user to test this function.

4. Extend the program in 3 to create a series of overloaded functions with the same name power() that, in addition to double also works with int, long and float.

5. Write a function called zeroSmaller() that is passed two int arguments by reference and then sets the smaller of the two numbers to 0. Write a main() program to exercise this function.

6. Write a program that asks the user to enter 5 test scores between 1 and 100. Repeat the question until the user enters a valid score. Calculate and display the average of all test scores excluding the lowest test score. Use the following three function prototypes:
   void getScore(int &);
   void calcAverage(int, int, int, int, int);
   int findLowest(int, int, int, int, int);

7. Write a program that uses an inline function to convert pounds to kilograms. 1 kilogram = 0.453592 * pounds.

8. Write a function that, when you call it, displays a message telling how many times it has been called: “I have been called three times”, for instance. Write a main() program that calls this function at least 10 times. Implement this function without using a global variable.

9. Write a function called swap() that interchanges two int values passed to it by the calling program. (Note that the function should swap the values of the variables in the calling program). Create a main program to exercise this function.

10. Write an isSquare() function that determines whether the given integer is a square number and return true or false accordingly. Write a main() function to demonstrate this by asking the user to enter an integer value between 1 and 20 from the user. Repeat the question until the user enters a valid integer within the range.