Project Plan

1. This is a simple calculator to have two classes: a BasicCalculator Class to do basic calculations, a ScienceCalculator Class to do science calculations, and a driver program.
2. There is only one function in each class to do the calculation and display the result all together via a switch statement based on the operation type. Each function also returns a double type of value that is the result of the calculation, which is not used by the driver program in this case.
3. The only function in BasicCalculator Class takes 3 parameters: Two double type parameters represent the two binary operands for +, -, \*, /, one char type parameter for the operation sign: + for adding, - for subtraction, \* for multiplication, / for division, s for square, r for square root. The square and square root operations are unary operations, so the second double type parameter is not used at all, the user can simply enter 0 for the unused 2nd double type parameter in the driver program. The driver program will prompt and notify the user about this.
4. The only function in ScienceCalculator Class takes 2 parameters. One double type parameter for the unary operand, one char type parameter for the unary operation sign: s for sin(), c for cos(), t for tan(), l for log(), e for base E exponent calculation.
5. The default constructor is used. No need to write a customized constructor in each class.
6. There is no need to store the calculated result in a class’s private data memer variable because the calculation is done through a public function and the calculated result is returned by a public method. Therefore, no private data members in each class.
7. There is no need to write mutator: set() and accessor: get() functions because there is no private data member variables of each class.
8. A while loop is used in the driver program to continually run the calculation until a user enters a key other than ‘b’ or ‘s’ from the keyboard to stop this while loop.
9. The driver program creates one object for each of the Basiccalculator class and the ScienceCalculator class through their default constructors. These objects can access and use their member functions to calculate the data values input by a user via a keyboard and to display the result. Several double type variables are created in the driver program to store the user entered values from a keyboard.