# Programming Question: Sort and count a bag of coins

**Specification:**

I have a bag of coins. Design a class that can sort and count coins according to their size. The class should also contain the methods that display the tallies for each kind of coin and the total amount of money in the bag. There may be foreign coins mixed in with the normal coins. These coins should be tallied but not used to calculate the total cash.

These are the diameters of US coins.

| QUARTER | 24 mm |
|---------|-------|
| DIME    | 18 mm |
| NICKEL  | 21 mm |
| PENNY   | 19 mm |

We will simulate the bag of coins using an array of 30 integers;
The simplest solution is to use `switch()` construct to select and tally the different coins.
Declare the size of each coin as private constant in your BagOfCoin class.

**Class Design**: *You may add any additional local variables and methods to implement the logic of your solution.*

**Class Name**: **BagOfCoins**

**Private data members:**

| quarters | int | counter for quarters in the bag |
|----------|-----|--------------------------------|
| dimes    | int | counter for dimes in the bag |
| nickels  | int | counter for nickels in the bag |
| pennies  | int | counter for of pennies in the bag |
| foreign  | int | counter for foreign coins or any other coins in the bag |

**public methods:**  **\*\***There is **NO** initialization constrictor, only the default constructor

| BagOfCoins |  | default constructor. Set all the counters to zero. |
|------------|--|---------------------------------------------------|
| SortCoinTally | void | (int coin)->**parameter list**<br>takes a **coin argument** and sorts and tallies respectively<br>if the coin matches coin type then increment the coin counter |
| ToString | override string | Display the coin tallies |
| CalculateTotal | decimal | Calculate and return total amount |

In your program.cs, create an array of 30 integers with initialization list. Use the following data to test your class.
{24,18,21,20,19,24,18,21,20,19,24,18,21,19,24,18,23,21,19,24,18,21,19,24,18,21,19,24,18,21,30,32,24,26}

**When you complete this assignment, zip your solution folder and submit it in Eagle online for grading.**