

## Making Change

### Problem Description:

Write a program that tells what coins to give out for any amount of change from 1 cent to 99 cents. The program should always use the minimum number of coins.

Use coin denominations of 25 cents (quarters), 10 cents (dimes), 5 cents (nickels), and 1 cent (pennies). Do not use half-dollar coins.

Your program **will** use the following function **without** modification.

```
void compute_coin(int coin_value, int& number, int& amount_left);  
//Precondition: 0 < coin_value < 100; 0 <= amount_left < 100.  
//Postcondition: number has been set equal to the maximum number of coins of  
//denomination coin_value cents that can be obtained from amount_left cents.  
//amount_left has been decreased by the value of the coins, i.e.,  
//decreased by number*coin_value.
```

For example, suppose the value of the variable `amount_left` is 86. Then, after this call `compute_coin(25, number, amount_left);`

the value of `number` will be 3 and the value of `amount_left` will be 11 (because if you take 3 quarters from 86 cents, that leaves 11 cents).

Hint: Use integer division and the `%` operator to implement this function.

Your program **will** use the following function **without** modification.

```
void print_coins(int quarters, int dimes, int nickels, int pennies);  
// Precondition: quarters, dimes, nickels, and pennies  
// contain the correct number of coins.  
// Postcondition: A sentence specifying the proper change is sent  
// to the console.
```

Include a loop that lets the user repeat this computation for new input values until the user says he or she wants to end the program.

### Example Output:

```
Enter the amount of change: 86  
86 cents can be given as 3 quarters, 1 dime, 1 penny.  
Would you like to run the program again (Y or N)? Y  
  
Enter the amount of change: 33  
33 cents can be given as 1 quarter, 1 nickel, 3 pennies.  
Would you like to run the program again (Y or N)? Y  
  
Enter the amount of change: 24  
24 cents can be given as 2 dimes, 4 pennies.  
Would you like to run the program again (Y or N)? n
```

### Required Test Cases:

```
19  
46  
80
```

### Skills:

●Var ●Con I/O ●Format ●Logic ●Loops ●Functions ●Call by Ref ○File I/O ○Arrays ○Strings ○GM