## Output for Question #1

In [7]:
```
n = int(input("Enter the value in cents you want change for: "))
coin_denominations = [25,10,5,1]
number_of_coins = []
for c in range(len(coin_denominations)):
    number_of_coins.append(int(n/coin_denominations[c]))
    n = n%coin_denominations[c]
print("coin denominations in quarters, dimes, nickels, and pennies respectively is as follows")
print(number_of_coins)
```

```
Enter the value in cents you want change for: 305
coin denominations in quarters, dimes, nickels, and pennies respectively is as follows
[12, 0, 1, 0]
```

## Output for Question# 2

```
n = int(input("Enter the value in cents you want change for:"))
denomination_number = int(input("Enter the number of denominations you want: "))

print("Enter the denominations as in c^0 , c^1, c^2 and so on: ")
coin_denominations = [int(input()) for c in range(denomination_number)]
# order will be sorted
coin_denominations = sorted(coin_denominations, reverse=True)
number_of_coins = []

for c in range(len(coin_denominations)):
    number_of_coins.append(int(n / coin_denominations[c]))
    n = n % coin_denominations[c]

print("Denominations in Descending order                        : ",coin_denominations)
print("Number of times each denomination is occuring respectively: ",number_of_coins)
```

```
Enter the value in cents you want change for:153
Enter the number of denominations you want: 4
Enter the denominations as in c^0 , c^1, c^2 and so on:
1
2
4
8
Denominations in Descending order                        :  [8, 4, 2, 1]
Number of times each denomination is occuring respectively:  [19, 0, 0, 1]
```

Output for Question# 3

```
# Assumption: One coin_denominations should be penny.
# O(nk)-time algorithm that makes change for any set of k different coin denominations
n = int(input("Enter the value in cents you want change for:"))
denomination_number = int(input("Enter how many coin_denominations you want to enter: "))

print("Enter the coin_denominations: ")
coin_denominations = [int(input()) for c in range(denomination_number)]
# order will be sorted in decreasing order
coin_denominations = sorted(coin_denominations, reverse=True)
number_of_coins = []
# Loop will run k times
for c in range(denomination_number):
    number_of_coins.append(0)
    while(n >= coin_denominations[c]):
        n -= coin_denominations[c]
        number_of_coins[c]+=1
print("Denomination value in Descending order                    : ",coin_denominations)
print("Number of times each denomination is occuring respectively: ",number_of_coins)
```

input

```
Enter how many coin_denominations you want to enter: 5
Enter the coin_denominations:
1
3
6
9
15
Denomination value in Descending order                    :  [15, 9, 6, 3, 1]
Number of times each denomination is occuring respectively:  [10, 0, 0, 1, 0]


...Program finished with exit code 0
Press ENTER to exit console.
```