

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 using System;
4
5 public class Program {
6     // O(nd) time | O(n) space
7     public static int MinNumberOfCoinsForChange(int n, int[] denoms) {
8         int[] numOfCoins = new int[n + 1];
9         Array.Fill(numOfCoins, Int32.MaxValue);
10        numOfCoins[0] = 0;
11        int toCompare = 0;
12        foreach (int denom in denoms) {
13            for (int amount = 0; amount < numOfCoins.Length; amount++) {
14                if (denom <= amount) {
15                    if (numOfCoins[amount - denom] == Int32.MaxValue) {
16                        toCompare = numOfCoins[amount - denom];
17                    } else {
18                        toCompare = numOfCoins[amount - denom] + 1;
19                    }
20                    numOfCoins[amount] =
21                        Math.Min(numOfCoins[amount], toCompare);
22                }
23            }
24        }
25        return numOfCoins[n] != Int32.MaxValue ? numOfCoins[n] : -1;
26    }
27 }
28
```

Solution 1Solution 2Solution 3

```
1 public class Program {
2     public static int MinNumberOfCoinsForChange(int n, int[] denoms) {
3         // Write your code here.
4         return -1;
5     }
6 }
7
```

Run or submit code when you're ready.
