

CS50's Introduction to Programming with Python

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Coke Machine

Suppose that a machine sells bottles of Coca-Cola (Coke) for 50 cents and only accepts coins in these denominations: 25 cents, 10 cents, and 5 cents.

In a file called `coke.py`, implement a program that prompts the user to insert a coin, one at a time, each time informing the user of the amount due. Once the user has inputted at least 50 cents, output how many cents in change the user is owed. Assume that the user will only input integers, and ignore any integer that isn't an accepted denomination.

Demo



```
Amount Due: 25
Insert Coin: 10
Amount Due: 15
Insert Coin: 10
Amount Due: 5
Insert Coin: 5
Change Owed: 0
$ python coke.py
Amount Due: 50
Insert Coin: 25
Amount Due: 25
Insert Coin: 10
```

Recorded with **asciinema**

Before You Begin

Log into [cs50.dev \(https://cs50.dev/\)](https://cs50.dev), click on your terminal window, and execute `cd` by itself. You should find that your terminal window's prompt resembles the below:

```
$
```

Next execute

```
mkdir coke
```

to make a folder called `coke` in your codespace.

Then execute

```
cd coke
```

to change directories into that folder. You should now see your terminal prompt as `coke/ $`. You can now execute

```
code coke.py
```

to make a file called `coke.py` where you'll write your program.

How to Test

Here's how to test your code manually:

- Run your program with `python coke.py`. At your `Insert Coin:` prompt, type `25` and press Enter. Your program should output:

```
Amount Due: 25
```

and continue prompting the user for coins.

- Run your program with `python coke.py`. At your `Insert Coin:` prompt, type `10` and press Enter. Your program should output:

```
Amount Due: 40
```

and continue prompting the user for coins.

- Run your program with `python coke.py`. At your `Insert Coin:` prompt, type `5` and press Enter. Your program should output:

```
Amount Due: 45
```

and continue prompting the user for coins.

- Run your program with `python coke.py`. At your `Insert Coin:` prompt, type `30` and press Enter. Your program should output:

```
Amount Due: 50
```

because the machine doesn't accept 30-cent coins! Your program should then continue prompting the user for coins.

- Run your program with `python coke.py`. At your `Insert Coin:` prompt, type `25` and press Enter, then type `25` again and press Enter. Your program should halt and display:

```
Change Owed: 0
```

- Run your program with `python coke.py`. At your `Insert Coin:` prompt, type `25` and press Enter, then type `10` and press Enter. Type `25` again and press Enter, after which your program should halt and display:

```
Change Owed: 10
```

You can execute the below to check your code using `check50`, a program that CS50 will use to test your code when you submit. But be sure to test it yourself as well!

```
check50 cs50/problems/2022/python/coke
```

Green smilies mean your program has passed a test! Red frownies will indicate your program output something unexpected. Visit the URL that `check50` outputs to see the input `check50` handed to your program, what output it expected, and what output your program actually gave.

► **Hint**

How to Submit

In your terminal, execute the below to submit your work.

```
submit50 cs50/problems/2022/python/coke
```