

# CS256 — Exercise 2

January 13, 2016

Due: Monday, January 18, 2016 before midnight (50 points)

## 1 Preparing the Project

1. In exercise 1, you forked an existing project. In this exercise, you will create a project from scratch.
2. Go to <https://codebank.xyz> and create a new project named CS256-EX2.
3. On your local machine, from a terminal or git bash navigate to the folder you use for storing CS256 related files and create a new directory to store this exercise. From now on, we'll call this directory the *working directory*.
4. cd in to the working directory and run:  

```
$ git init  
$ git remote add origin https://codebank.xyz/username/CS256-EX2.git
```

where `username` is your bronconame.
5. Now, the directory on your machine is a git repository with a reference to the remote repository on <https://codebank.xyz>.

## 2 Making Change

### 2.1 Description

1. Create a file named `Change.cpp` in your working directory.
2. This file should contain a C++ program that will do the following:
  - (a) Ask the user to input an integer in the range  $[0, 99]$ . Use an input validation loop to ensure the value entered is in this range.
  - (b) Calculate the appropriate change associated with the number entered using quarters (25), dimes (10), nickels (5), and pennies (1) using the fewest coins.
  - (c) Print out the result.

### 2.2 Sample Outputs

```
Enter a number in the range [0, 99]: 41  
The proper change is:  
1 quarter.  
1 dime.
```

```
1 nickel.  
1 penny.
```

Enter a number in the range [0, 99]: 74

The proper change is:

```
2 quarters.  
2 dimes.  
4 pennies.
```

Note that your output should only list coins that are used. For example, in the second sample above no nickels are used so we don't print anything.

Also, make sure to use either the singular or plural form for the name of the coin. For example, if we use 1 penny it should be "penny" but if it's more than 1 it should be "pennies."

## 2.3 Submission

Once you have completed the program, you can use `git add`, `git commit`, and `git push` to push the changes to <https://codebank.xyz>. You can make as many commits and push as many times as desired until the deadline.

## 3 File Copy

### 3.1 Description

1. Create a file named `Copy.cpp`. This file will contain a C++ program that does the following:
  - (a) Ask the user to input a string corresponding to the path or name for a file to copy from.
  - (b) Ask the user to input a string corresponding to the path or name for a file to copy to.
  - (c) Copy the contents from the first file to the second.
  - (d) Print out the number of characters copied.

### 3.2 Sample Output

```
Enter from file: in.txt  
Enter to file: out.txt  
Copied 9200 characters.
```

### 3.3 Submission

Once you have completed the program, you can use `git add`, `git commit`, and `git push` to push the changes to <https://codebank.xyz>. You can make as many commits and push as many times as desired until the deadline.