Program Design Document Spring, 2017

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CS155 – Section 01

Project #4 – Show me the Money

Due: Tuesday, March 7, 2017

**Program Requirements:**

This program will allow a user to enter an amount of money, allow them to make a selection that they can afford and output their selection as well as their change.

**Program Inputs:**

Money (integer), Selection(integer)

The integer values must be non-negative. Money must be between 45 and 100. Selection must be greater than or equal to the selected products cost.

**Program Outputs:**

Output options, selected option, selected option cost (integer), change to be returned (integer), total quarters (integer), dimes (integer), nickels (integer).

**Solution Overview:**

The program will begin by having the user enter an amount of money.

User will then be shown a selection of products and their price.

User will enter the product desired based on the price of the product.

Compute remaining money = money – cost

Output Selection and cost

If money remaining is > 0 output change received

Calculate quarters = money /25;

Calculate remaining money %= 25

Calculate dimes = money /10;

Calculate remaining money %= 10

Calculate nickels = money /5;

Calculate pennies = money %5

Output the total quarters, dimes, nickels, and pennies the user will receive

**Algorithm Flowchart:**

C:\Users\Adam\Desktop\vending.png

**Test Plan:**

Sixteen test cases will be run:

1. Money 35, Selection 45
2. Money 105, Selection 45
3. Money 45, Selection 25
4. Money 45, Selection 105
5. Money 45, Selection 75
6. Money 45, Selection 45
7. Money 45, Selection 50
8. Money 50, Selection 75
9. Money 50, Selection 45
10. Money 50, Selection 50
11. Money 75, Selection 45
12. Money 75, Selection 75
13. Money 100, Selection 75
14. Money 100, Selection 100
15. Money 67, Selection 45
16. Money 82, Selection 50