Design Notebook

Monday, April 18, 2022

12:29 PM

**CS 1150 Design Notebook Example**

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**Assignment #4**

**Step 1: Problem Statement**

Write a program to generate credit card numbers for 3 companies: Visa, American Express, and Discover. . The program will prompt the user to enter two values - **a character and a number.** Next the program will display a randomly generated credit card number based on the two values obtained from the user. The *character* represents the card type and the *number* represents the level of credit.

**Step 2: Understandings**

**What I Do Know**

* I know how to format variables into a string and display even better

**What I Don’t Know – What I’m struggling with – Questions I have**

* Would like to know how to keep the random number display under a certain number.

**Step 3: Pseudocode for Main**

* + Assign constant character data types to the card type variables “Visa1,” “Visa2,” “American\_Express1,” “American\_Express2,” “Discover1,” and “Discover2”. Then equal the variables to a character as follows:

**Visa1 = V**

**American Express1 = A**

**Discover1 = D**

**Visa2 = v**

**American Express2 = a**

**Discover2 = d**

* + Assign constant integer data types to the card level variables “Regular.” “Gold,” and “Platinum.” Then equal the variables to an integer as follows:

**Regular = 1**

**Gold = 2**

**Platinum = 3**

* + Assign string data types to one, two, and three variables and equal them to the card level name within parentheses.

Example: one = (Regular)

* + Assign a double data types to the variables randomNum1, randomNum2, randomNum3, and randomNum4 and have them return a random number that is greater than 999 with the Math.random() method.

* + Assign double data types to the variables randomNum1, randomNum2, randomNum3, and randomNum4, equal them respectively to the integer converted variables randonNum1, randomNum2, randomNum3, and randomNum4, multiply them by 10000, and make sure they obtain no random numbers under 1000.
  + Display the menu of card options as shown below

Enter a card type first (upper or lower case)

V: Visa A: American Express D: Discover

Enter a card level second

1: Regular 2: Gold 3: Platinum

"\*Example user choice: \"V2\". Which is Visa and Gold.")

* + Prompt user for the card type and level for the credit card.
  + If user inputs anything other than V, v, A, a, D, or d, display “invalid card type entry” and end the program.
  + If user inputs anything other than 1, 2, or 3, display “invalid card level entry” and end the program.
  + Display user choice as a string

Example: A2

* + Display the card type with the four random numbers and the card level as the example shown below:

Visa 4153 2672 7615 5906 (Regular)

**Step 4: Lessons Learned**

* + Learned how to generate and display random numbers
  + Learned how to display a lower-case character as an upper-case character when displaying in a string.