Algorithm:

sumOfDoubleEvenPlace(long number):

1. Make variable: total
2. Store variable number into a string
3. For loop
   1. getSize() of credit card number and subtract 2 as long as number is greater than or equal to zero. Keep subtracting 2 from the number until 0.
   2. Store the double of the digit in the even position of the card number
   3. Return the total

sumOfOddPlace(long number):

1. Make variable: total
2. Store variable number into a string
3. For loop
   1. getSize() of credit card number and subtract 1 as long as number is greater than or equal to zero. Keep subtracting 2 from the number until 0.
   2. Store the double of the digit in the even position of the card number
   3. Return the total

Get both totals and add them together. Divide by 10 and make sure remainder is divisible by 10.

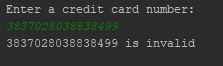
Test Cases:

|  |  |  |  |
| --- | --- | --- | --- |
| **Cases** | **Input** | **Expected Result** | **Actual Result** |
| If card number greater than 16 or less than 13 | 4123234 | Is invalid | 4123234 is invalid |
| If card number doesn’t start with 6,4,5, or 37. | 3837028038838499 | Is invalid | 3837028038838499 is invalid |
| If number is not divisible by 10. | 372222333344554 | Is invalid | 372222333344554 is invalid |

Case 1 screen shot:



Case 2 screen shot:



Case 3 screen shot:



UML diagram:

|  |
| --- |
| **Class Name:**  **CreditCard** |
|  |
| **+isValid(): boolean**  **+sumOfDoubleEvenPlace(): int**  **+getDigit(): int**  **+sumOfOddPlace(): int**  **+prefixMatched(): boolean**  **+getSize(): int**  **+getPrefix(): long**  **+inputData(): long**  **+displayResult(): void** |

Flowchart:

