

5. Using Java Create a method that accepts a number and modifies it such that the each of the digit in the newly formed number is equal to the difference between two consecutive digits in the original number. The digit in the units place can be left as it is. Note: Take the absolute value of the difference. Ex: $6-8 = 2$

Method Name	modifyNumber
Method Description	Accepts a number and modify it as per the requirement
Argument	int number1
Return Type	int
Logic	Accept a number and modify it such that the each of the digit in the newly formed number is equal to the difference between two consecutive digits in the original number. For example. Input: 45862 Output:13242 Algorithm: 1. Convert number into String 2.Extract each char using charAt method 3. Convert char to int and find the difference 4.Create new StringBuffer object and keep adding the difference 5. Finally convert StringBuffer to int

```
public static int modifyNumber(int number) {  
    String numberString = String.valueOf(number);  
    StringBuilder modifiedNumber = new StringBuilder();  
  
    // Add the difference between the first two digits to the modified number  
    modifiedNumber.append(Math.abs(Character.getNumericValue(numberString.charAt(0)) -  
Character.getNumericValue(numberString.charAt(1))));  
  
    // Calculate and add the difference between consecutive digits to the modified number  
    for (int i = 1; i < numberString.length() - 1; i++) {  
        int diff = Math.abs(Character.getNumericValue(numberString.charAt(i)) -  
Character.getNumericValue(numberString.charAt(i + 1)));  
        modifiedNumber.append(diff);  
    }  
}
```

```
// Add the last digit as it is to the modified number
modifiedNumber.append(numberString.charAt(numberString.length() - 1));

return Integer.parseInt(modifiedNumber.toString());
}
```