

# Roshan Poudel - Project 1

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## CS 257 - Object Oriented Programming

### PART 1

The following classes contain methods that perform various operations on integer arrays and Integer ArrayList.

For information on the methods, please refer to the javadoc comments in the source code.

**Class: ArrayUtils.java**

**Class: ArrayListUtils.java**

**The testing of the methods in the above classes is done using the "ArrayUtilsTester.java" class.**

To test on methods present in the above two classes, run the following command:

```
javac ArrayUtilsTester.java
```

```
java ArrayUtilsTester
```

The results of the test are stored in the ["results.txt"](#) file.

### PART 2

The following class contains the implementation of the rail cipher encryption and decryption.

For information on the methods, please refer to the javadoc comments in the source code.

## Class: RailCipher.java

To run the RailCipher class, run the following command:

```
javac RailCipher.java
```

```
java RailCipher
```

This program will ask you for an input string to encrypt and will then print the encrypted and decrypted string.

## Following are the test cases for the RailCipher class:

### Test Case 1: Original test case

Input: "BEWARE THE IDES OF MARCH"

Encoded Format:

BWRTE DSFAC EAEHI EOMRH

Decoded String:

BEWARETHEIDESOFMARCH

### Test Case 2: Test case for string with all uppercase letters

Input: "THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG"

Encoded Format:

TEUCB ONOJM SVRHL ZDGHQ IKRWF XUPOE TEAYO

Decoded String:

THEQUICKBROWNFOXJUMPSOVERTHELAZYDOG

### Test Case 3: Test case for string with spaces

Input: "Hello World!"

Encoded Format:

Hlool !eIWrd

Decoded String:

HelloWorld!

#### Test Case 4: Test case for string with no spaces

Input: "Thisisateststring"

Encoded Format:

Tiiae ttigh sstss rn

Decoded String:

Thisisateststring

#### Test Case 5: Test case for empty string

Input: ""

Encoded Format:

Decoded String: