Honor Code: All submissions should include a comment statement near the top of the program of the form:

```java
/* THIS CODE IS MY OWN WORK, IT WAS WRITTEN WITHOUT CONSULTING
 * A TUTOR OR CODE WRITTEN BY OTHER STUDENTS - YOUR NAME
 */
```

Cases of apparent plagiarism or collusion will be referred to the Honor Council.

Preparation: To disallow other students from reading your homework programs, you must save your file(s) in a directory inside your cs170 directory. If you follow the below commands, your work will be protected.

1. Create a directory called hw5 directory inside your cs170 project directory to save your hw5 files.
   ```bash
   mkdir ~/cs170/hw5
   ```
2. You must use ~/cs170/hw5 directory as your current directory when editing any program files for hw5. Change your current directory to your newly created hw5 directory:
   ```bash
   cd ~/cs170/hw5
   ```
3. You can now run gedit to edit your programs:
   ```bash
   gedit yourProgramName.java &
   ```
   The name yourProgramName is the name of the Java program (and also the name of the class!).

1. (35 pts) Write a program called ReplaceWhile. This program should prompt the user for three Strings: The first and second Strings should be individual characters (let’s call them a and b), the third String can be of arbitrary length. Your program should make a new String which is the original String will all instances of character a replaced by character b. Your program should then print out the new String. You MUST use a while loop to accomplish this task, and you MAY NOT use any String functions except `length()` and `charAt()`.

Sample output:
Your program output should resemble the following:

```java
>>> java ReplaceWhile
Please enter a character: E
Please enter a replacement character: e
Please enter a string: HELLOELLIE!
```
Your new string is: HeLLOeLLIe!

```java
>>> java ReplaceWhile
Please enter a character: E
Please enter a replacement character: e
Please enter a string: HiCS170!
Your new string is: HiCS170!
```

2. (35 pts) Write a program called ReplaceFor which functions in exactly the same way as described in Problem #1. However, this time, you should use a for loop to implement your program. Again, you may not use any functions from the String class beyond length() and charAt().

3. (30 pts) Write a program named AddString to add two integers represented as Strings. The numbers are arbitrary large and non-negative. Your program should take two command line arguments as the two numbers and print the sum to the screen. You MUST use a loop, and you MAY NOT use Integer.parseInt().

Sample output:
Your program output should resemble the following:

```java
>>> java AddString 123 456
The sum is: 579

>>> java AddString 111 9999
The sum is: 10110

>>> java AddString 1111111111111111111111111 9999999999999999999999999
The sum is: 10011111111111111111111110
```

Submission:
• Submit your work using the following commands. You need to be in your ~/cs170/hw5 directory when you issue them.
  ◦ /home/cs170001/turnin ReplaceWhile.java hw5a
  ◦ /home/cs170001/turnin ReplaceFor.java hw5b
  ◦ /home/cs170001/turnin AddString.java hw5c
• Your homework is not turned unless the above commands are successful (you will get a "success" message when turn in was successful).