Open the Java API and find the `StringBuilder` class. You will need to refer to this in today's practical.

1. Type, compile and run the following program which includes an object of the `StringBuilder` class.

```
public class P04CQ1
{
   public static void main(String [] args)
   {
      StringBuilder webAddress = new StringBuilder();
      webAddress.append("www.lyit.ie");
      webAddress.append("/courses");
      webAddress.insert(0, "http://");

      System.out.print(webAddress);
   }
}
```

2. Modify this program so that the user is asked to type in the name of a department. Note that you can't read in a `StringBuilder` from `keyboardIn` - you need to read in a `String`. The program will then append that course to the web address and display it. For example:

```
Please enter a department name: computing
http://www.lyit.ie/courses/computing
```

3. Type, compile and run the following program which includes reads in a String and converts into a `StringBuilder` class.

```
import java.util.Scanner;
public class P04CQ3
{
   public static void main(String [] args)
   {
      String sentence = new String();
      Scanner keyboardIn = new Scanner(System.in);
      System.out.print("Please enter a sentence: ");
      sentence = keyboardIn.nextLine();

      StringBuilder sbSentence = new StringBuilder();
      sbSentence.append(sentence);
      System.out.print(sbSentence);
   }
}
```

4. Write a program that asks the user to enter their first name, their surname, and their college name. The program will then generate and print out their email address in the form firstname.lastname@college.ie

```
Please enter your first name: James
Please enter your second name: Murphy
Please enter your college name: LYIT
Your email address will be: James.Murphy@LYIT.ie
```

5. Modify this program so that all characters in the email address are in lower case. For example:

```
Please enter your first name: James
Please enter your second name: Murphy
Please enter your college name: LYIT
Your email address will be: james.murphy@lyit.ie
```

6. Write a Java program which will create a `StringBuilder` object named `fullAddress`. The program will then ask the user to enter their `street`, `town` and `postcode`. The program should then append `street`, and `town` separated by a comma to the `fullAddress` object. The program should then test the `postcode` variable. If the first two letters of the `postcode` are "BT", then ", Northern Ireland" should be appended on to the `fullAddress` object, otherwise ", Republic of Ireland" should be appended. If the `postcode` is not blank, then append it to the `fullAddress` object.

```
Please enter your street: 12 Main Street
Please enter your town: Derry
Please enter your postcode: BT56 1PR
12 Main Street, Derry, Northern Ireland, BT56 1PR
```

7. Write a program that asks the user to type in a sentence, and then does the following:
   - Adds the text " that's all folks" at the end of the sentence
   - Prints out the number of characters in the sentence
   - Adds the text ", or maybe not," at position 20 in the sentence
   - Removes the first 14 letters in the sentence
   - Prints out the sentence in reverse

   Sample output:

```
Please enter a sentence: brexit means brexit
brexit means brexit, that's all folks
There are 37 letters in that sentence
brexit means brexit, or maybe not, that's all folks
brexit, or maybe not,  that's all folks
sklof lla s'taht  ,ton ebyam ro ,tixerb
```