Some Java facts that you need to know

- **Java refresher... charAt( )**

    - **`charAt( )`** method:

        - Let **`s`** be a **string** (constant or variable)

            Then:

            > ```
            > s.charAt(i)  =  the character at position i in string s
            > ```

    - **Examples:**

        - **`"abc".charAt(0)`** is **`'a'`**
        - **`"abc".charAt(1)`** is **`'b'`**
        - **`"abc".charAt(2)`** is **`'c'`**

- **You write programs in ASCII, Java compiler translates into binary**

    - **Example:**

        ```
        byte  x;

        x = 0;            // Java compiler generates instructions that store
                          // 00000000 into variable x

        x = 4;            // Java compiler generates instructions that store
                          // 00000100 into variable x

        x = x + 1         // Java compiler generates instructions that
                          // add binary number in x with 00000001

        x = -x;           // Java compiler generates instructions that
                          // inverts the binary number in x and store result in x
        ```

        Concrete example:

        ```
        byte x;

        x = 0;            //  variable x contains:  00000000

        x = 4;            //  variable x contains:  00000100

        x = x + 1;        //  variable x contains:  00000101    ( 5₂'s compl )
        ```

```
x = -x;              //  variable x contains:  11111011     ( -5₂'s compl )
```