Strings and Random Numbers

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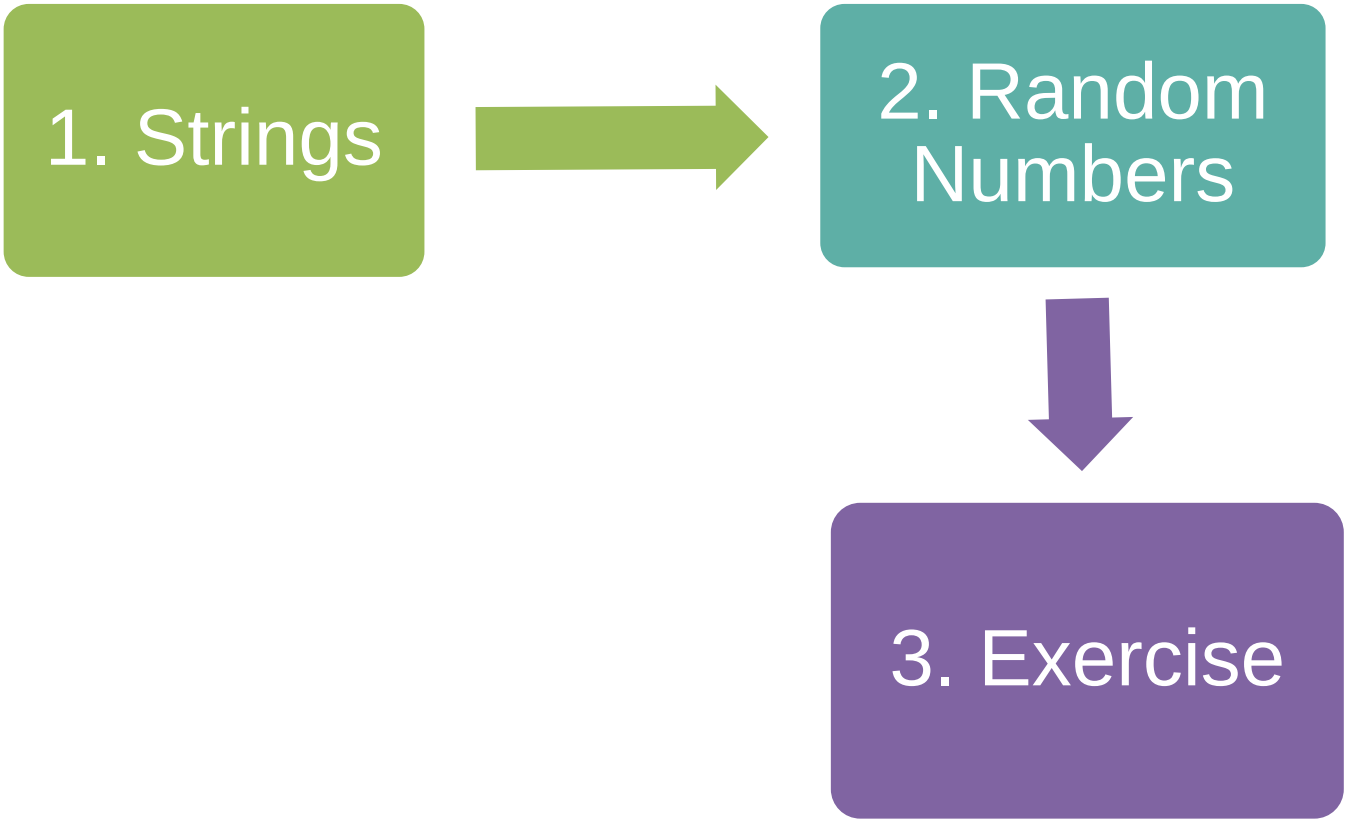
Object Oriented Programming

Agenda



1. Strings

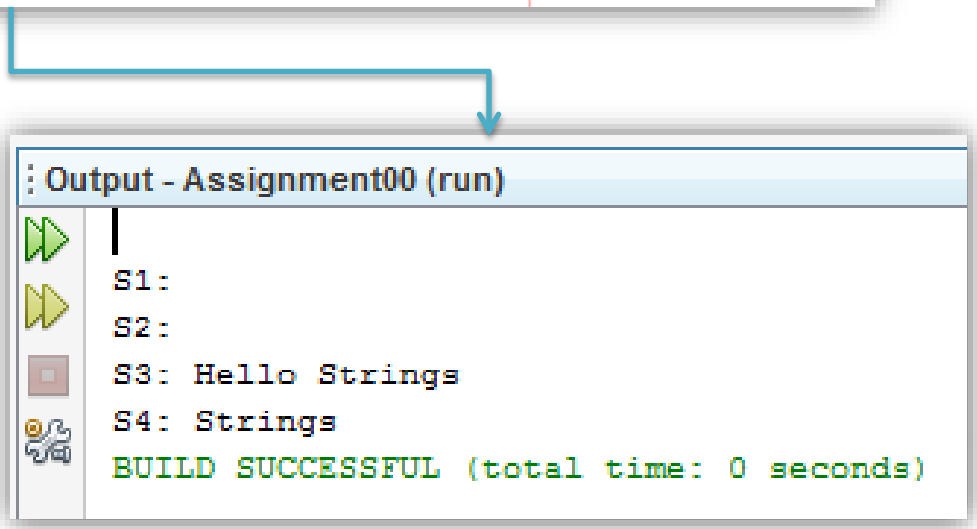
[Deitel] Chapter 29

Strings Declarations

String Miscellaneous

Strings Declarations

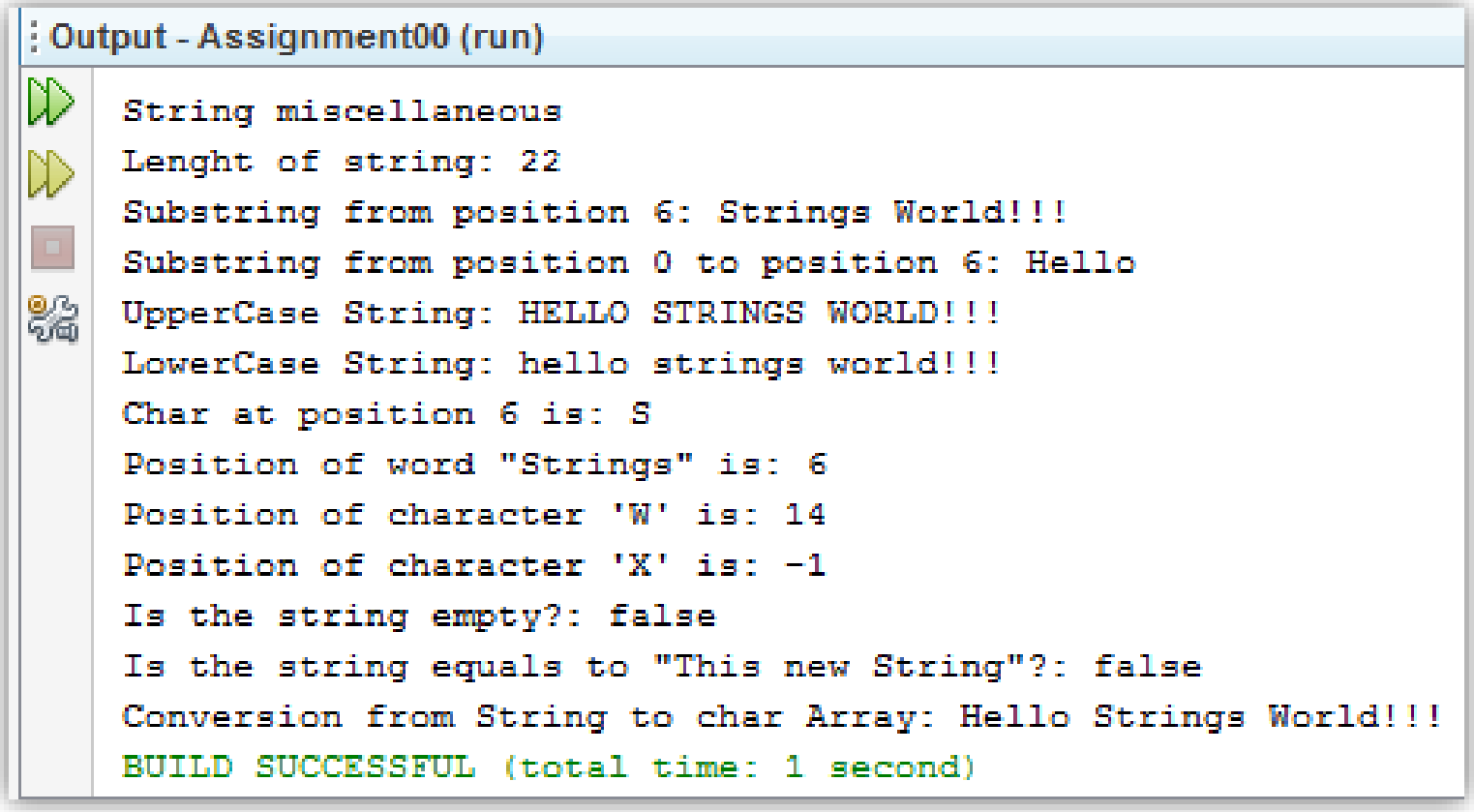
```
private static void stringDeclarationExamples() {

    String simpleString = "Hello";
    char[] charArray = {'H', 'e', 'l', 'l', 'o', ' ', 'S', 't', 'r', 'i', 'n', 'g', 's'};

    String string1 = "";
    String string2 = new String();
    String string3 = new String(charArray);
    String string4 = new String(charArray, 6, 7);

    System.out.printf("S1: %s\nS2: %s\nS3: %s\nS4: %s\n", string1, string2, string3, string4);

}
```



String Miscellaneous

```
private static void stringMiscelllaneousExamples() {

    String exampleString = "Hello Strings World!!!";

    System.out.println("Lenght of string: " + exampleString.length());

    System.out.println("Substring from position 6: " + exampleString.substring(6));

    System.out.println("Substring from position 0 to position 6: " + exampleString.substring(0, 6));

    System.out.println("UpperCase String: " + exampleString.toUpperCase());

    System.out.println("LowerCase String: " + exampleString.toLowerCase());

    System.out.println("Char at position 6 is: " + exampleString.charAt(6));

    System.out.println("Position of word \"Strings\" is: " + exampleString.indexOf("Strings"));

    System.out.println("Position of character 'W' is: " + exampleString.indexOf('W'));

    System.out.println("Position of character 'X' is: " + exampleString.indexOf('X'));

    System.out.println("Is the string empty?: " + exampleString.isEmpty());

    System.out.println("Is the string equals to \"This new String\"?: " + exampleString.equals("This new String"));

    System.out.print("Conversion from String to char Array: ");
    char[] stringToarray = exampleString.toCharArray();
    for (char character : stringToarray) {
        System.out.print(character);
    }
}
```

String Miscellaneous



2. Random numbers

Generating random numbers

Remember to import the

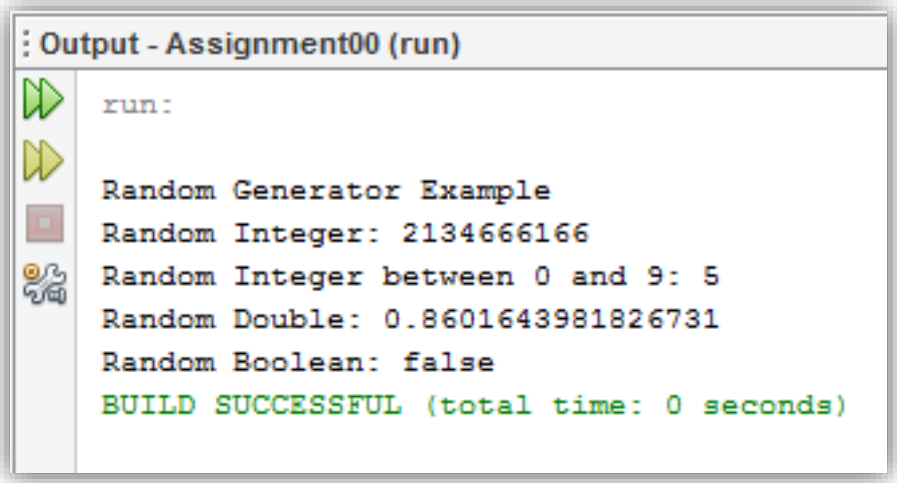
Random Class

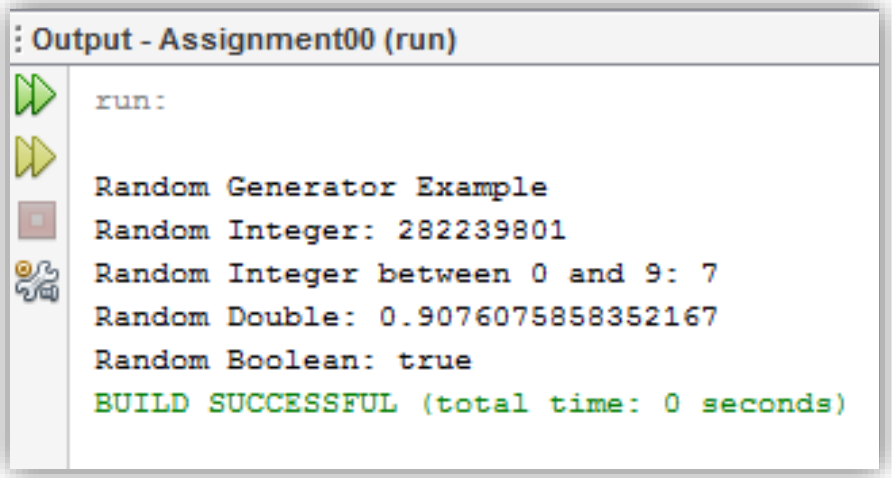
```
7  import java.util.Random;
8
```

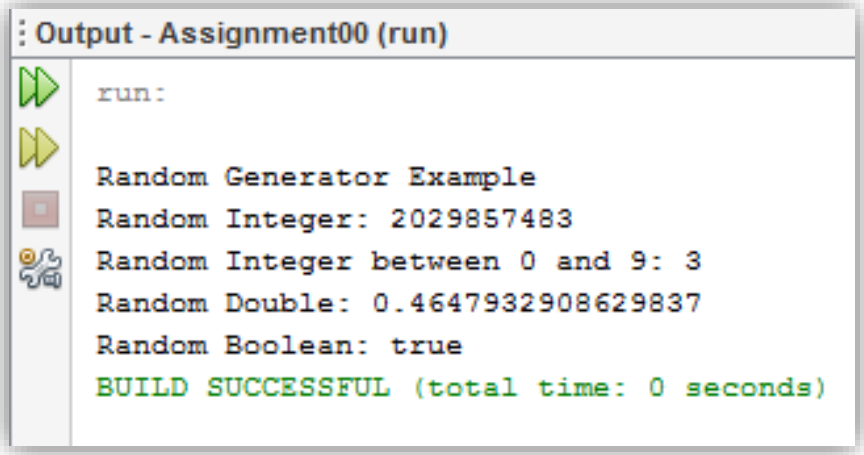
Generating random numbers

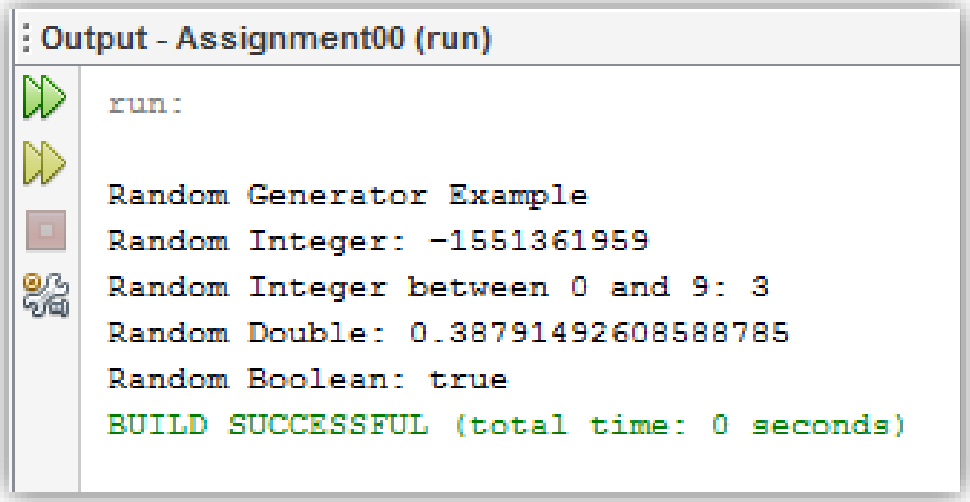
```
private static void randomGeneratorExample() {

    Random randomGenerator = new Random();

    int randomInteger = randomGenerator.nextInt();
    System.out.println("Random Integer: " + randomInteger);

    randomInteger = randomGenerator.nextInt(10);
    System.out.println("Random Integer between 0 and 9: " + randomInteger);

    double randomDouble = randomGenerator.nextDouble();
    System.out.println("Random Double: " + randomDouble);

    boolean randomBoolean = randomGenerator.nextBoolean();
    System.out.println("Random Boolean: "+randomBoolean);
}
```

Generating random numbers









3. Exercise

HangMan

- Write the program HangMan
  - Program must choose randomly the secret word from a predefined list. (Given by me ☺)
  - Program must show after each player turn the current game state:
    - Which letters has been discovered. For example:
      - _ b _ e _ t _ (Objects)
    - How many errors has been committed until complete this figure

      q(x_x)p
    - Which letters has been used

Game Output example

System (Secret word = “object”)	Player
_ _ _ _ _ _	
	User try the letter a
_ _ _ _ _ _ q a	
	User try the letter j
_ _ j _ _ _ q aj	
	User try the letter w
_ _ j _ _ _ q(ajw	
	User try the letter n
_ _ j _ _ _ q(X ajnw	
	User try the letter b
_ b j _ _ _ q(X abjnw	

Game Output example

System (Secret word = “object”)	Player
o b j e c _ q(X_X) abcde...	
	User try the letter t
o b j e c t q(X_X) abcde...	
You Win !!!	

System (Secret word = “object”)	Player
o b j e c _ q(X_X) abcde...	
	User try the letter p
o b j e c t q(X_X)P abcde...	
You Lose !!! The secret word is: object	

References

- [Barker] J. Barker, *Beginning Java Objects: From Concepts To Code*, Second Edition, Apress, 2005.
- [Deitel] H.M. Deitel and P.J. Deitel, *Java How to Program: Early Objects Version*, Prentice Hall, 2009.
- [Sierra] K. Sierra and B. Bates, *Head First Java*, 2nd Edition, O'Reilly Media, 2005.