Unit 01: Python to Java

Suggested Problems

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Square numbers

- Write a java program that prints all square numbers up to 10000, i.e., 1, 4, 9, 16, 25, 36, …, 10000

Triangular Patterns

- Write a java program that reads an input integer N from the user, and then prints a triangular pattern of stars, with height = N. See the below examples.

N = 3

```
*
* *
* * *
```

N = 5

```
*
* *
* * *
* * * *
* * * * *
```

N = 8

```
*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * * * *
* * * * * * * *
```

Large numbers

- Write a java program that uses a scanner to read an input string that represents a large decimal number, and then it outputs the sum of the number's digits. For example, if the input is "87638243209820 1", then the output is 63, which is calculated by summing all the digits 8+7+6+3+8+2+4+3+2+0+9+8+2+0+1 = 63
- Write a JUnit class to test your solution.

Palindrome

- A string is said to be palindrome if it reads the same from left-to-right, or right-to-left. For example, “level”, “civic”, and “Aibohphobia” are all palindromes. Write a function, called isPalindrome, that returns true if an input string is palindrome. Otherwise, it returns false.
- Write a JUnit class to test your solution.

Third maximum integer

- Write a java program that reads 100000 integers from a file, called “numbers.txt”, and then prints the third maximum integer on the screen. Use try/catch in your code to handle exceptions.
- You can download the input file from this link:

https://drive.google.com/file/d/1IX5E7jYQSgCWRhGh3MLq12B4BapFy2TE/view?usp=sharing