HW2

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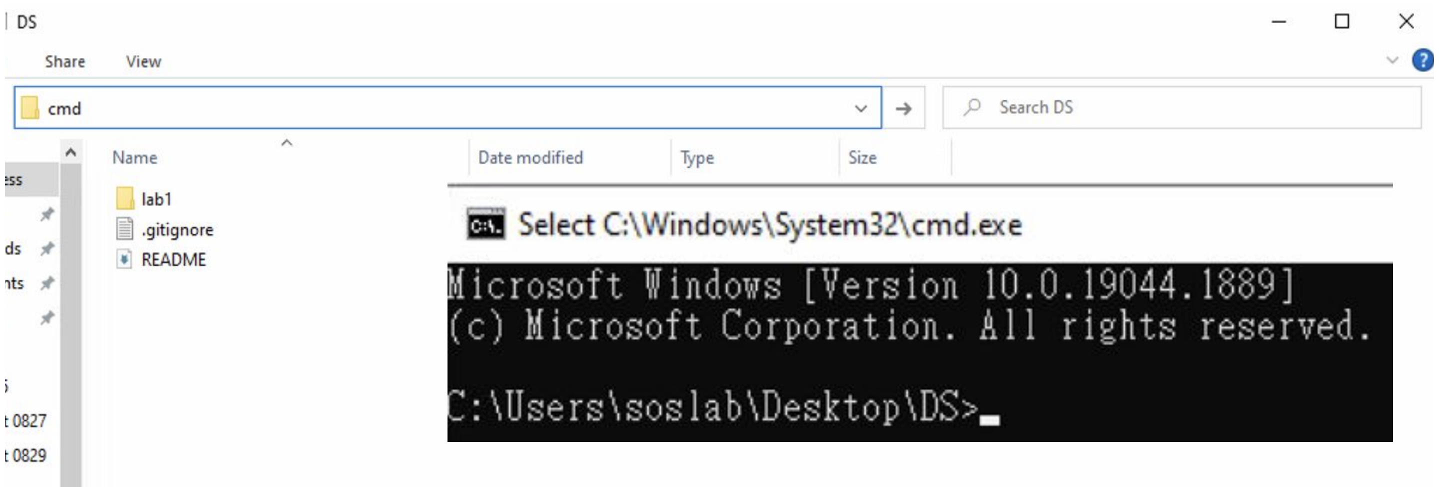
Review - Download Homework

- In your computer's folder, use the command below :

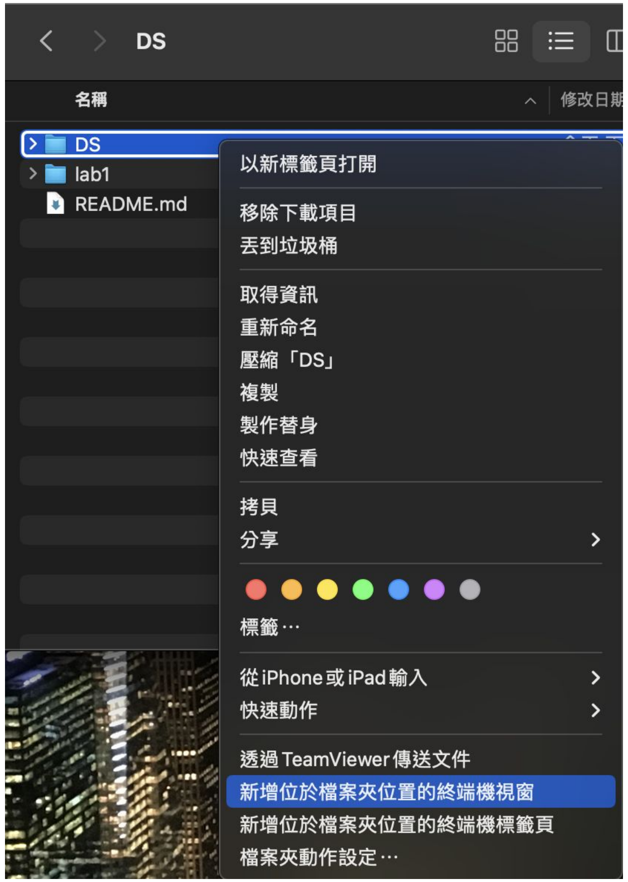
  cd (your folder path)

  git pull origin master

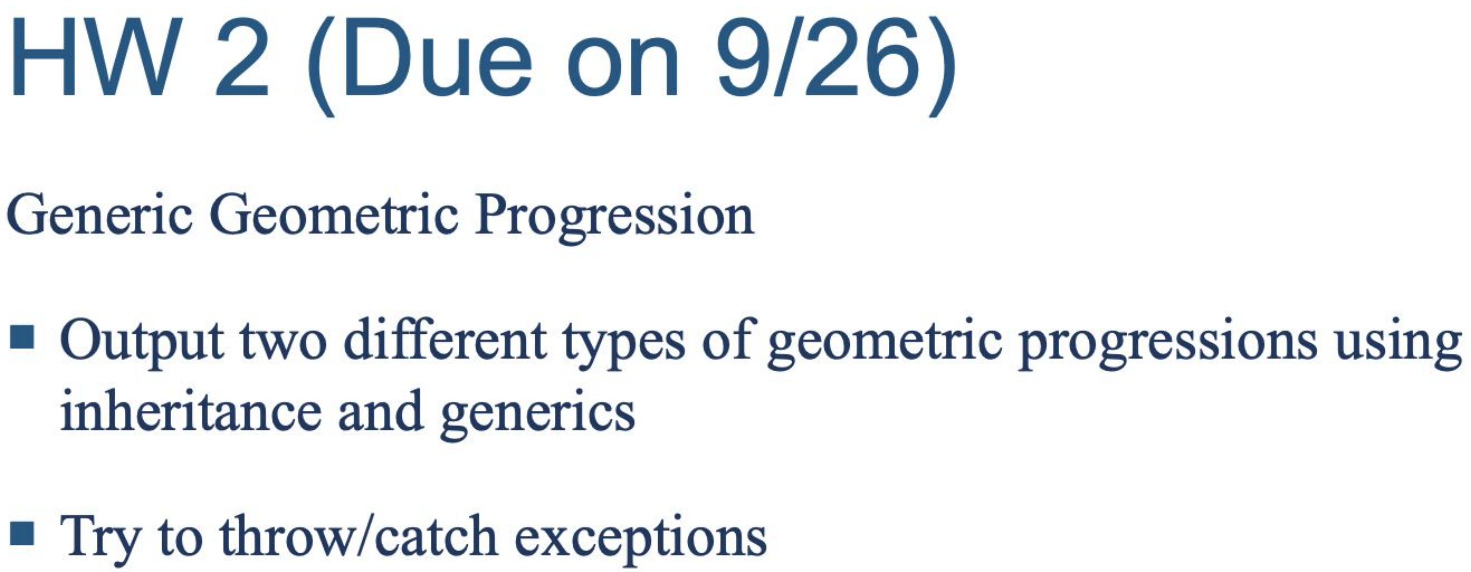


```
Microsoft Windows [Version 10.0.19044.1889]
(c) Microsoft Corporation. All rights reserved.

C:\Users\soslab\Desktop\DS>_
```



HW2



HW 2 (Due on 9/26)

Generic Geometric Progression

- Output two different types of geometric progressions using inheritance and generics
- Try to throw/catch exceptions

HW2

The Growth Population

- Get initial population and years from user inputs (Use Scanner class)
- Every 30 years (a generation), the population becomes double
- Output the Population Progression (by generation)
- E.g., Input: 2 people and 120 years.

  Output: 2, 4, 8, 16, 32

The Growth of Capital

- Get initial capital and years from user inputs
- The annual interest rate is 2.6%
- Output the yearly Capital progression
- E.g., Input: 100 and 2 years.

  Output: 100, 102.6, 105.2676

INPUT

- There are **three** token for inputs:
- Token 1 ➔ type (Population or Capital):
  - 0 = Population
  - 1 = Capital
- Token 2 ➔ number of initial people or capital = First term of geometric sequence
- Token 3 ➔ years = how many years

Formulation

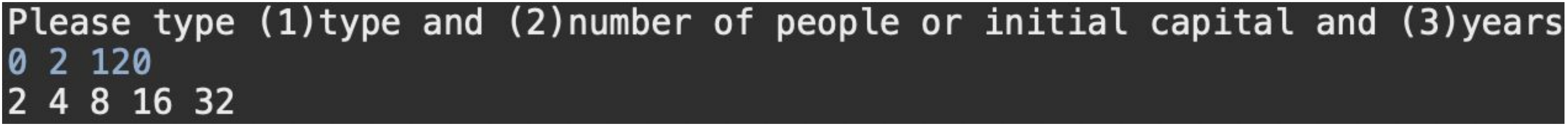
- initial : Token 2
- rate : can be constant

- First year = initial * rate = f1

  Second year = f1 * rate = f2

  Third year = f2 * rate = f3 ...

EXAMPLE- Population

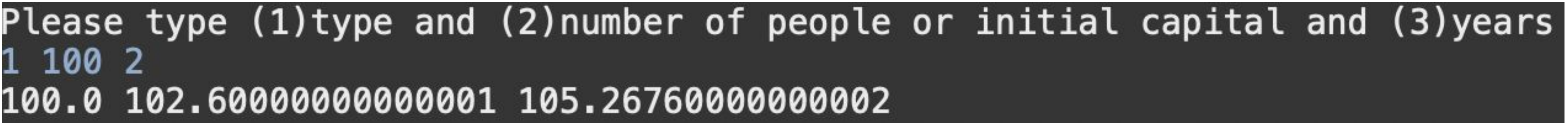


input →

output →

```
Please type (1)type and (2)number of people or initial capital and (3)years
0 2 120
2 4 8 16 32
```

EXAMPLE - Capital



```
Please type (1)type and (2)number of people or initial capital and (3)years
1 100 2
100.0 102.60000000000001 105.26760000000002
```

input →

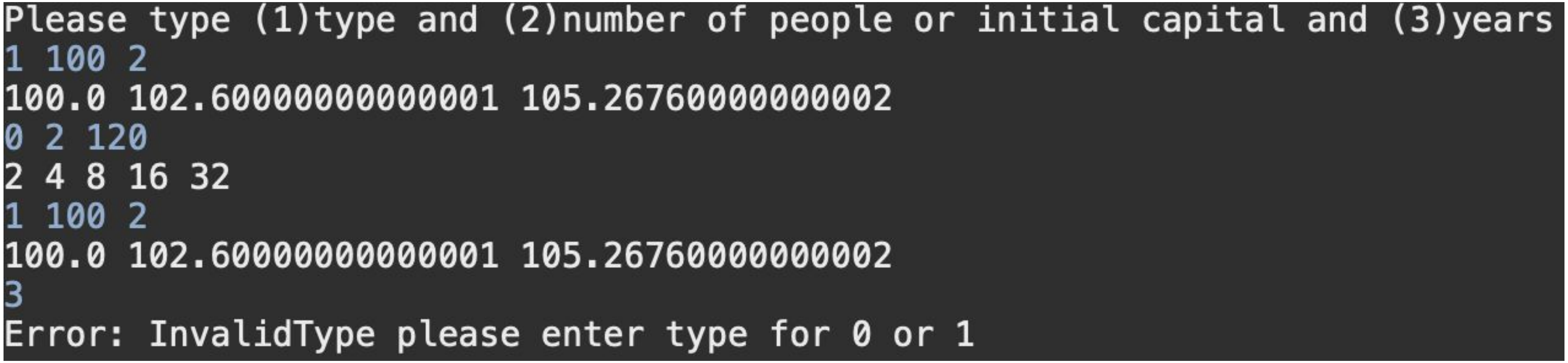
output →

Exceptions

- The **try** statement allows you to define a block of code to be tested for errors while it is being executed.
- The **catch** statement allows you to define a block of code to be executed, if an error occurs in the try block.
- The **finally** statement lets you execute code, after try...catch, regardless of the result
- The **throw** statement allows you to create a custom error.

From https://www.w3schools.com/java/java_try_catch.asp

- Remember, it’s not just one input data (one line). You need to stuff many input data into the program constantly. Please use the “loop” to receive many input data and run the program.



```
Please type (1)type and (2)number of people or initial capital and (3)years
1 100 2
100.0 102.60000000000001 105.26760000000002
0 2 120
2 4 8 16 32
1 100 2
100.0 102.60000000000001 105.26760000000002
3
Error: InvalidType please enter type for 0 or 1
```

Rules of Homework

- Project Name: HW{number of homework_ID number} , ex: HW2_110306XXX
- The class name where the main function of the code is located must be Main
- When the code is compressed and uploaded, please compress the project folder (ex: HW2_110306XXX) into .zip
- Unless otherwise specified by TA, homework that cannot be compiled and executed won’t be accepted.

Rules of Homework

- Before the Lab class, we will upload sample code and slides on GitHub. Please follow the sample code we gave you to complete your homework.

- We will open the WM5 hand-in section before Lab class.

- If you miss the deadline, your late homework can be made up before the end of the semester in the make-up section of WM5. (This make-up section will open near the end of the semester.)

- Reject the homework of plagiarism and tampering

Notice

- Hand-in your HW2 via WM5

- Send Group list via Google form!

  Deadline: 9/30 (Fri) 23:59

  We will upload the group list before next Lab class.