Java - Data Types

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Organization

Programming Review

https://www.youtube.com/watch?v=FCMxA3m_Imc (Until 1:22)

Data Types

- A variable has a type
    - int $\sim \mathbb{Z}$
    - double $\sim \mathbb{R}$
    - char $= \{`a`, `b`, \ldots\}$
    - boolean $= \{true, false\}$
    - String $= \{``a", ``aa", \ldots, ``b", ``bb", \ldots\}$
    - ...

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- Type checking enhances code correctness
- Types increase coding-time

Java Grammar Rules

Variable Declaration:
⟨*Type*⟩ ⟨*Varname*⟩; or
⟨*Type*⟩ ⟨*Varname*⟩ = ⟨Expression of type Type⟩;

Assignment Statement:
⟨*Varname*⟩ = ⟨Expression of same type as variable Varname⟩;

Exercises

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- Write a program in Java that reads a word in Spanish from the user and tells him/her whether it contains a diphthong.
    - *En español dos vocales en contacto se articulan como diptongo cuando:*
        - *una es cerrada (/i u/) no acentuada y la otra es abierta (/a e o/). O*
        - *ambas son cerradas, excepto si son iguales.*

Summary

- int $\sim \mathbb{Z}$
- double $\sim \mathbb{R}$
- char $= \{$'a', 'b', $\dots\}$
- boolean $= \{true, false\}$
- String $= \{$"a", "aa", $\dots$, "b", "bb", $\dots\}$
- ...

- Next Week: User Interface

References

- W3C Tutorial:
    - https://www.w3schools.com/java/java_data_types.asp
    - https://www.w3schools.com/java/java_type_casting.asp
    - https://www.w3schools.com/java/java_strings.asp
    - https://www.w3schools.com/java/java_booleans.asp
- Exercises:
  https://www.w3schools.com/java/exercise.asp
    - Java Data Types
    - Java Strings
    - Java Booleans