

Scala Training Introduction



VALDIS SAULESPURĒNS



- Izglītība: Maģistra grāds datorzinātnēs
- Pieredze programmēšanā: 25+ gadi
- Specialitāte: Teksta apstrāde un analīze
- Pamatdarbs: LNB
- Pasniedzu: LU, RTU, RCS
- Hobiji: prāta spēles, riteņbraukšana, šahs

Contact: valdis.s.coding@gmail.com



Ko es macīšu?

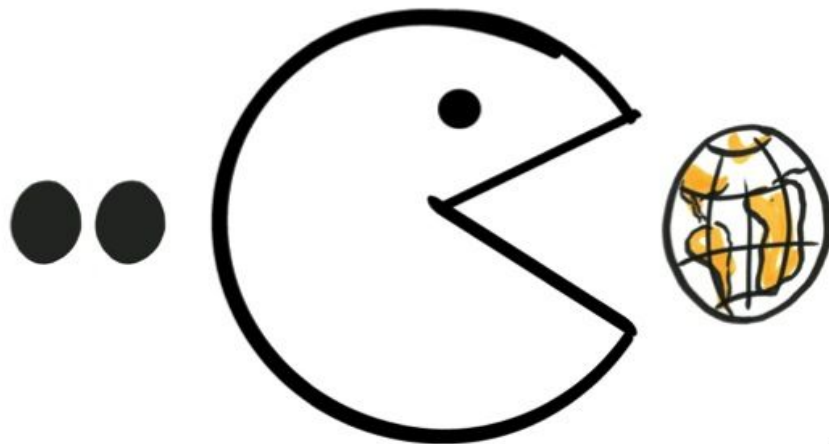


- Programmēšanas pamatus (Scala)
-
- Kā panākt, lai dators dara to, ko mēs gribam
- Kā “saskaldīt” jebkuru problēmu
- Automate the boring stuff!

Programmas apēd pasauli



Software is eating up the world*

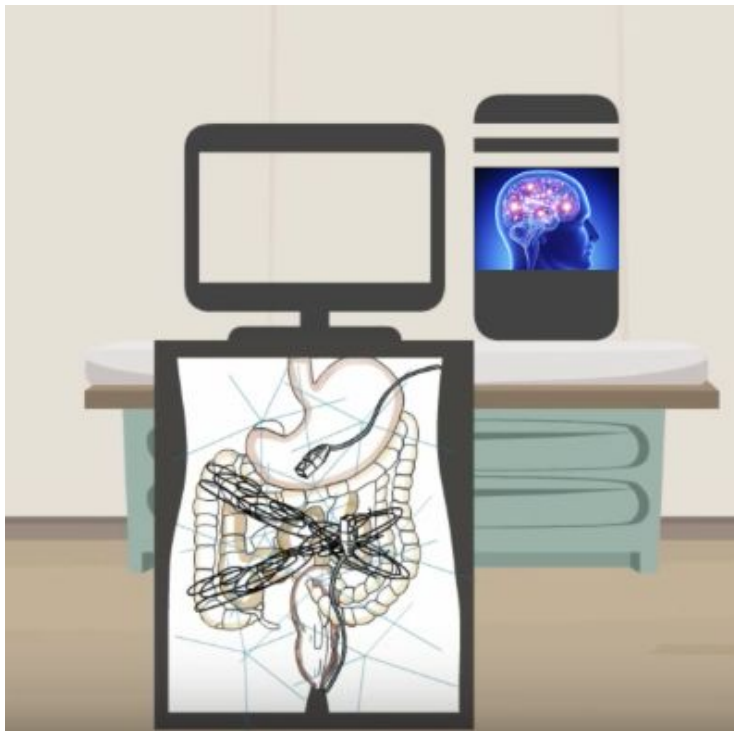


* Marc Andreessen
in Wall Street Journal

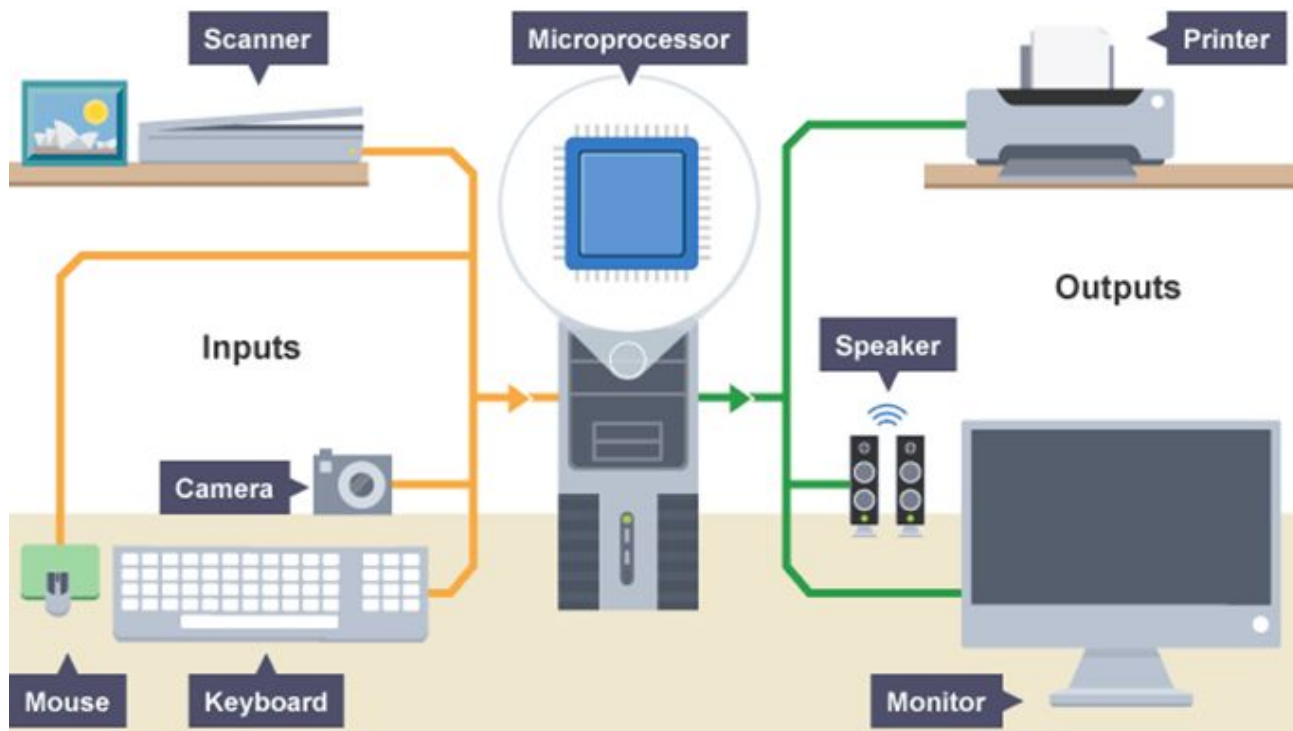
Data



Dators = paklausīgs bērns(bet klīrīgs)



... jātagremo viss, ko iebarojam



Kā sarunāties?



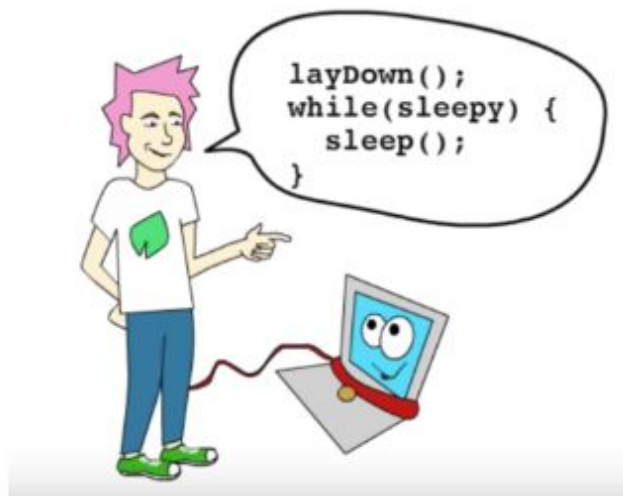
“Welcome to The Matrix”



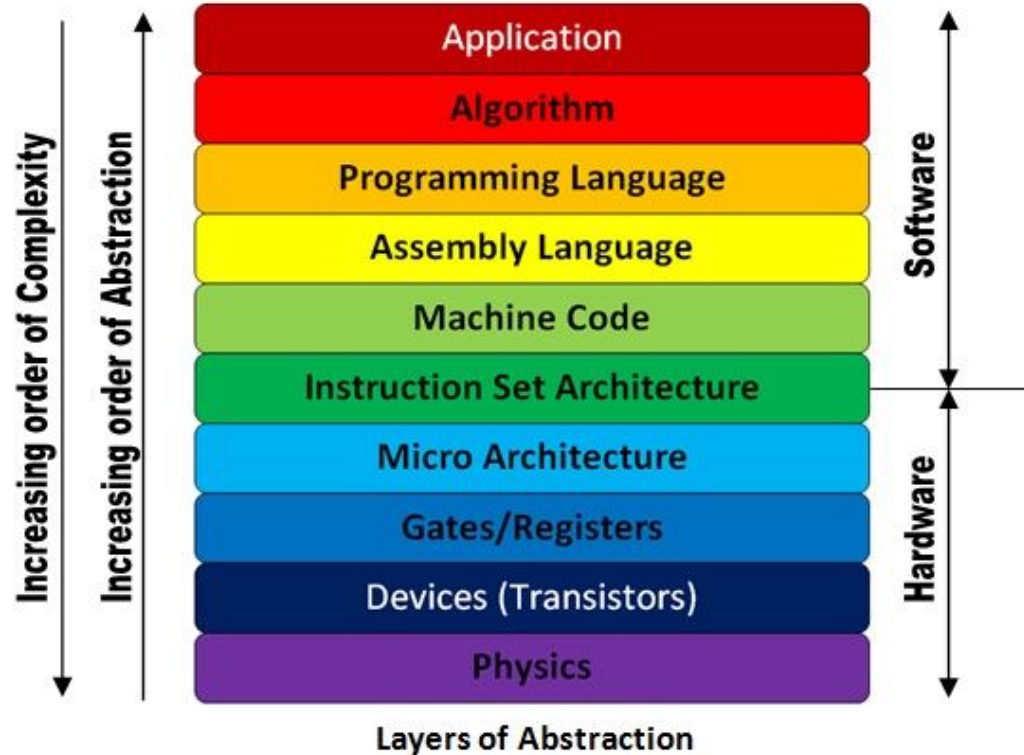
Mašīnkods



Cilvēkam lasāms kods



Abstraction



Brief History of Computing and Data



- What is this ? :)



Brief History of Computing and Data



- ~ 18,000BC – Uganda, Ishango Bone
- ~ 2400BC – Babylon abacus, libraries
- 300BC – 48AD – Library of Alexandria



Brief History of Computing and Data



- How about this modern recreation of a 2000 years old device?



Brief History of Computing and Data



- **~ 100-200AD**
Antikythera Mechanism

Predicting:

- Astrology
- Astronomy
- Olympics
- Calendar



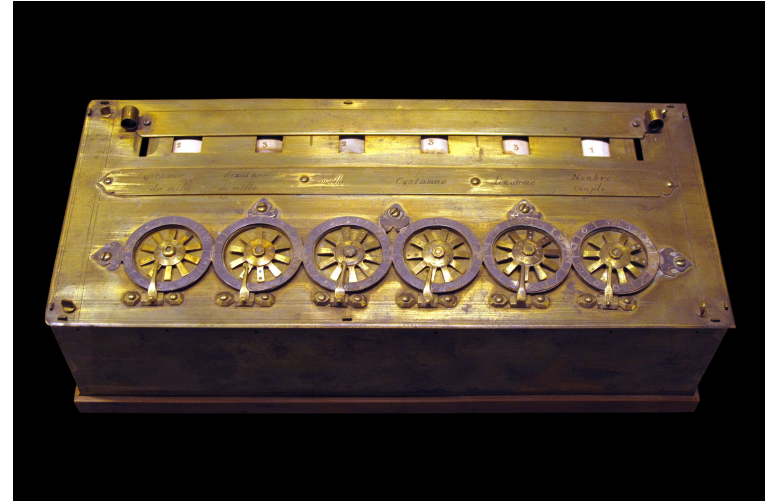
Brief History of Computing and Data



- **1642 Blaise Pascal's
Pascaline**

Performs:

- Addition
- Subtraction
- Multiply/Divide using Add/Sub
- 1649 Royal Patent by Louis XIV



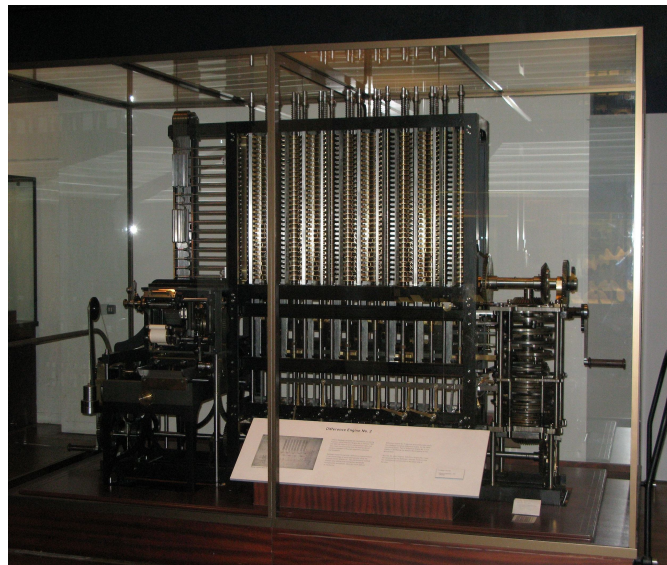
Brief History of Computing and Data



- **Charles Babbage
Difference Engine**

Performs:

- Arithmetic
- Derivation
- Power Series
- Curve Fitting



Brief History of Computing and Data



- **Ada Lovelace**
(1815-1852)
- First Programmer?

Popularized:

- Algorithms
- Babbage's Machines
-



Brief History of Computing and Data



- **Alonzo Church**
(1903-1995)
- **λ (lambda)-calculus - functional programming**

1930s

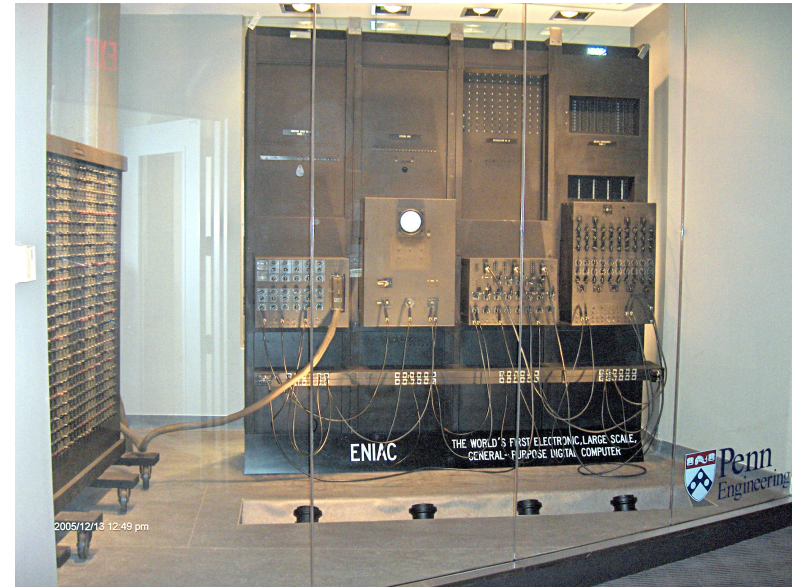
- Church–Turing thesis
- Princeton (Godel, Turing, von Neumann)



Brief History of Computing and Data



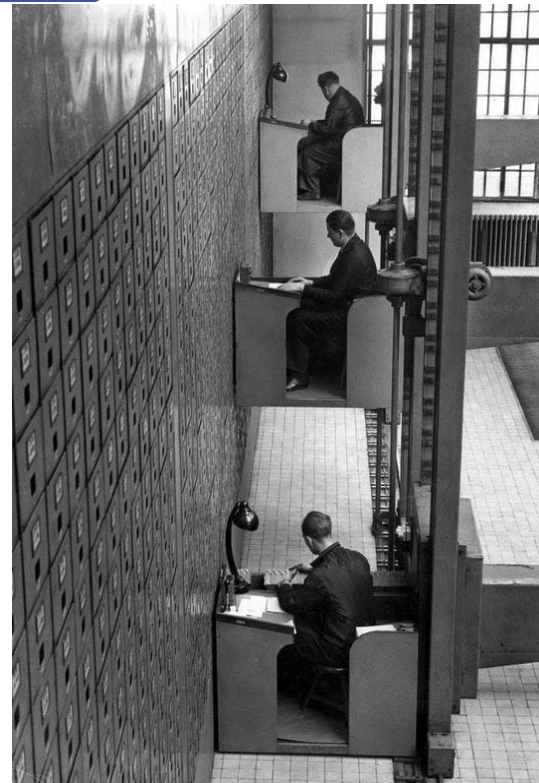
- 1940s - First General Purpose Electronic Computer ENIAC (Zuse mechanical)
- Turing complete
- von Neumann architecture
- most computers work the same today



Brief History of Computing and Data



- 1950s - Flat Files
- 1958 – IBM's Luhn defines Business Intelligence
- 1960s - CODASYL
- 1970s – Codd's relational DBs -> SQL
- 1980s – Data Warehouses / Marts
- 2000s – Big Data / noSQL DBs
- 2010 - Cloud services / AWS / GCP / Azure

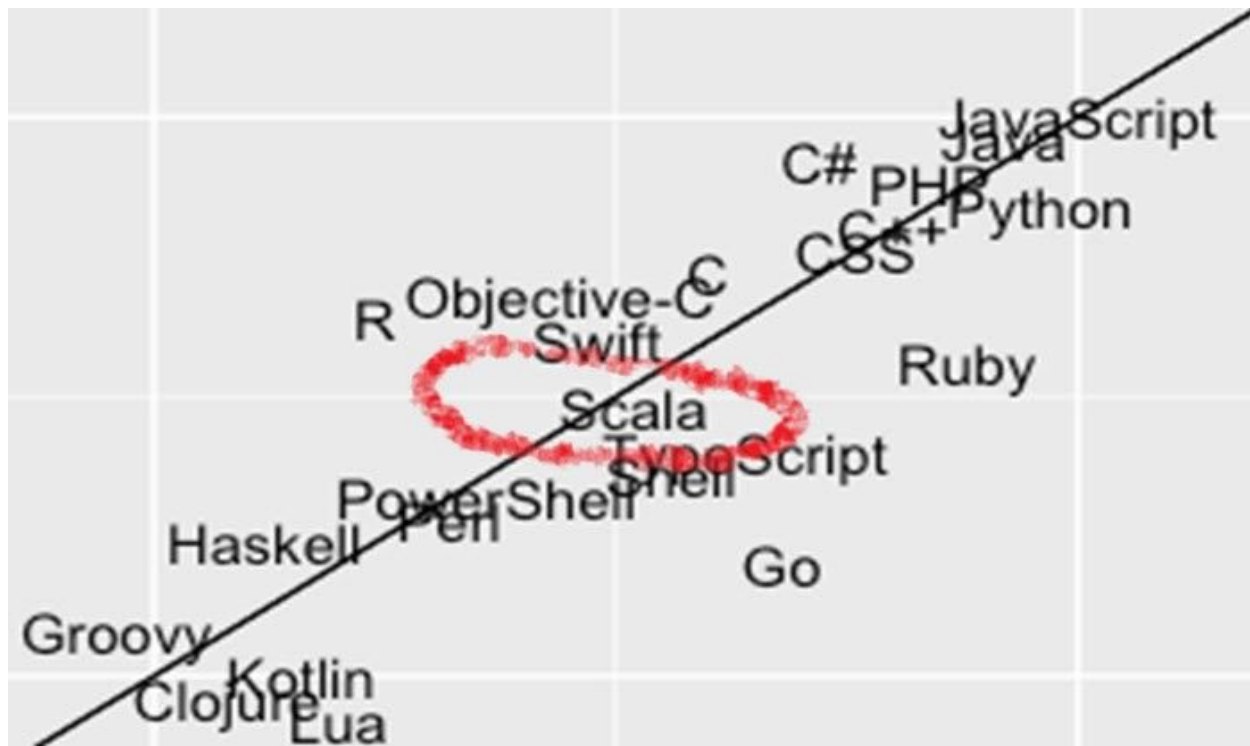


Programming Language history

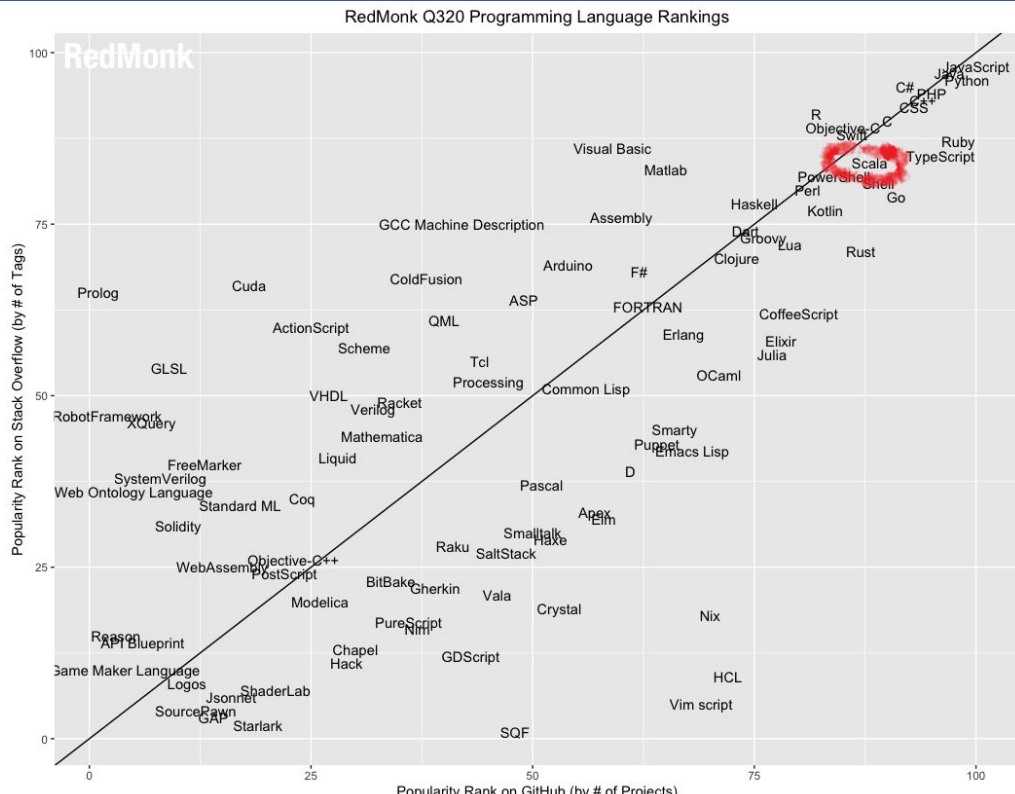


- 1940s: connecting wires to represent 0s and 1s
- 1950s: assemblers, FORTRAN, COBOL, LISP
- 1960s: ALGOL, BCPL(-> B -> C), SIMULA, PASCAL, BASIC
- 1970s: Prolog, FP, ML, Miranda
- 1980s: Eiffel, C++
- 1990s: Haskell, Java, Python
- 2000s: D, C#, Spec#, F#, X10, Fortress, **Scala**, Ruby
- 2010s: Agda, Coq, ...

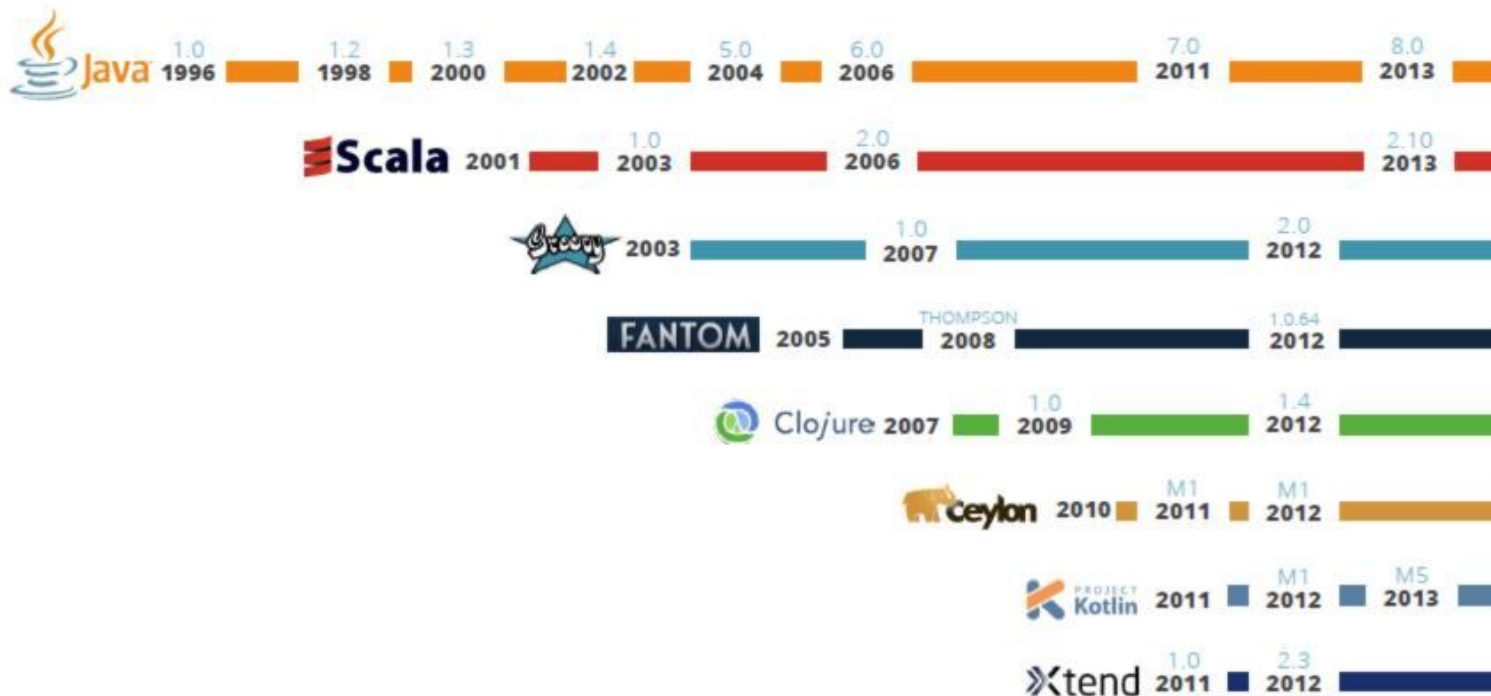
Scala popularity



Scala popularity



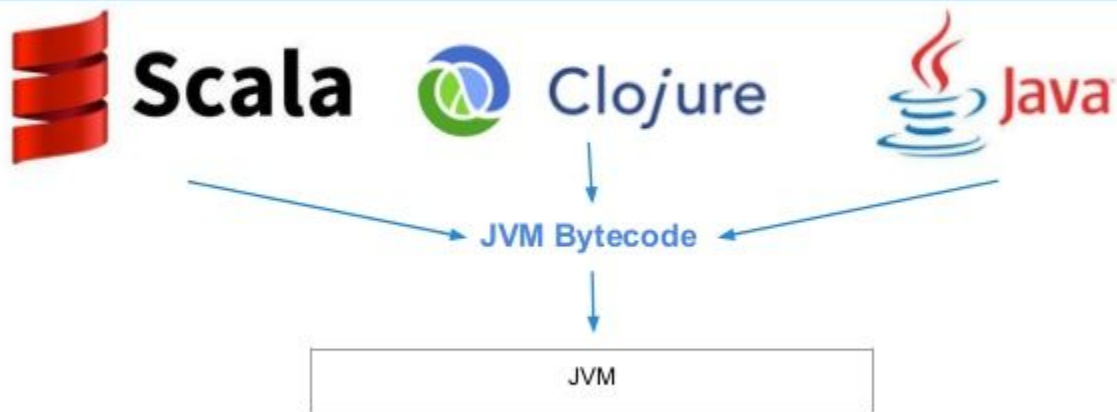
Scala and JVM



Scala and JVM



How is our code executed?



Goals



- Imperative Programming
- Functional Programming
- Object-Oriented Programming
- Create your own project



Course Materials

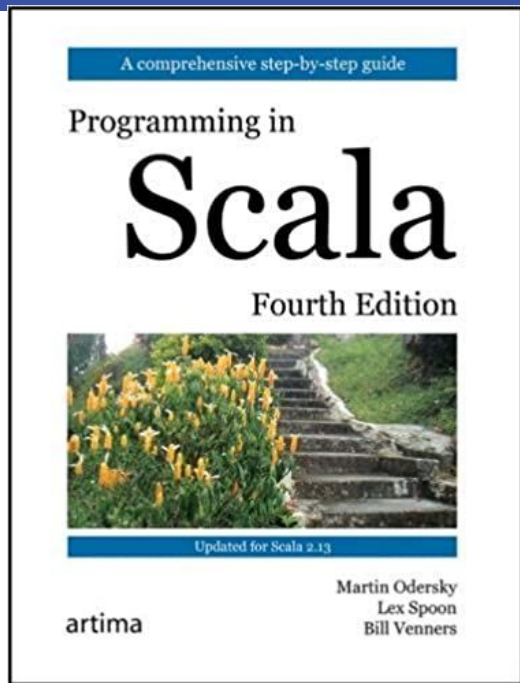


Main course page

https://github.com/ValRCS/Scala_SheGoesTech_08_20

Google Classroom (will invite)

Books



- Scala Resources
- <https://alvinalexander.com/scala/> - Author of Scala Cookbook
- <https://www.lihaoyi.com/> - Author of Hands On Scala
-

Requirements



- **Open / Analytical / Logical Mind**
- Helpful but NOT required knowledge:
 - Comfortable in command line - Apgūsim arī to
 - SQL - apgūsim kursa laikā
 -
- Helpful: a computer with a minimum of 8GB RAM
- <https://www.scala-lang.org/download/>





PALDIES!
Thank You :)





Vārds
Ceļš šeit
Pieredze
Ko vēlāties sasniegt

