RBS

RIGA BUSINESS SCHOOL

Riga Technical University

Programming Languages Introduction

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COURSE AIMS

Learn the concept of a programming language: how humans describe computations to be executed on a computer.

Learn the tools for describing, defining, and implementing a programming language: syntax and semantics

Learn different program description paradigms

Imperative

Functional

Logic

Declarative

Object-oriented

Hybrid

COURSE GRADING

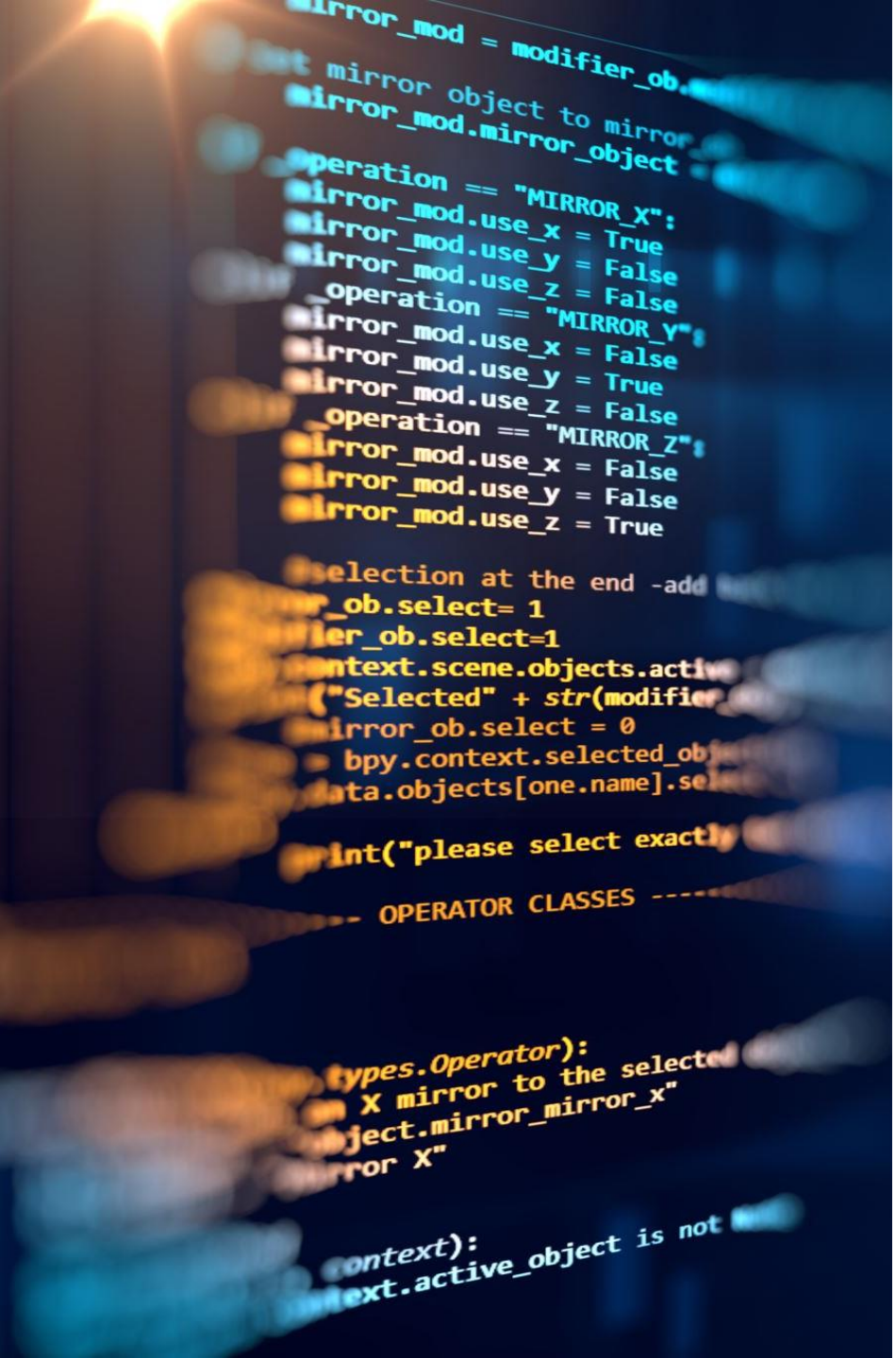
30% - Homework - 7 assignments

10% - Weekly Quizzes + Participation

30% - Midterm - in class - around week 7

30% - Final - in class - around week 14

Optional extra credit assignment - can raise the grade by 1 point



COURSE TOPICS

Introduction to Programming Languages

Syntax and Semantics - BNF, EBNF, Syntax Diagrams

Imperative Programming Languages Overview - **Go** 'A better C'

Functional Programming Languages -> **Clojure** 'A better Lisp'

Logic Programming Languages -> **Prolog**

Declarative Programming Languages -> **SQL**

Object-Oriented Programming Languages -> **Kotlin** 'A better Java'

Hybrid Programming Languages -> **Rust** 'A better C++ or Scala'

COURSE MATERIALS

Course Github Repository: https://github.com/ValRCS/RBS_PBM774_Programming_Languages

Books - not absolutely necessary - but can be useful:

https://www.cengage.uk/c/programming-logic-and-design-introductory-9e-farrell/9781337109635/ - official book for this course - however it is very general - lacks language specific details

Concepts of Programming Languages, 12th edition by Robert W. Sebesta - used to be the main book for this course - still good if you have access to it

Supplemental: https://cs.brown.edu/courses/cs173/2012/book/ - Programming Languages: Application and Interpretation by Shriram Krishnamurthi - free online book - very good for functional programming languages