IT602: Object-Oriented Programming

Lecture - 01

Introduction

Arpit Rana

18th Jan 2022

Course Logistics

Course Logistics

Instructor	**Arpit Rana** Room-3105, Faculty Block-3 Email: arpit_rana@daiict.ac.in
Teaching Assistants	**Urvi Oza** (201921009@daiict.ac.in) **Abhishek Shah** (202011017@daiict.ac.in) **Mayank Kumar** (2021PCS2034@daiict.ac.in) **Mohith Shashi Vadan Ciga** (2021PCS2035@daiict.ac.in)
Prerequisites	IT623 (Algorithms & Data Structures) IT603 (C Programming)

Course Logistics

Credit Weighting	4
Lectures	Tuesday, 08:30 – 09:45 Thursday, 12:00 – 13:15
Lab	Monday, 14:00 – 16:00
Private Study	At least 4 hrs per week

Course Logistics

Assessment	Mid-term: 30% End-term: 40% Course Projects: 30% (7.5 x 4) **Extra Credit(EC): 3%**
How to Fail	Skip lectures; avoid private study; cram just before the exam; expect the exam to be a memory test; be inactive on discussion forum
How to Pass	Attend lectures; summarize the notes; expect a problem-solving exam; **be active and accurate on discussion forum**

Course Logistics

Assignment Submission	**Project submissions:** ■ Project submissions will be online through github (instructions will be provided in lab). ■ Projects up to 48 hrs late will be given a 40% penalty. **The following constitute plagiarism on project submissions:** ■ Copying any segment of code from any source ■ Submitting code that you did not write yourself personally Students suspected of plagiarism on an assignment will be given a **ZERO**.

Tentative Course Plan

Week	Lecture	Lab	Due
Week-1 [17 Jan 2022]	Introduction to Java Programming	— No lab —	-
Week-2 [24 Jan 2022]	Language Fundamentals	Getting Started with IntelliJ IDEA	-
Week-3 [31 Jan 2022]	Declarations: Classes	LA - 1	
Week-4 [7 Feb 2022]	Declarations: Arrays	LA - 1	Sunday, 13 Feb 2022
Week-5 [14 Feb 2022]	Declarations: Strings, HashMap and HashSet	LA - 2	
Week-6 [21 Feb 2022]	Access Control: Exception Handling	LA - 2	Sunday, 27 Feb 2022
Week-7 [28 Feb 2022]	OOP: Inheritance	LA - 3	
Week-8 [7 Mar 2022]	Mid-term Examination	LA - 3	

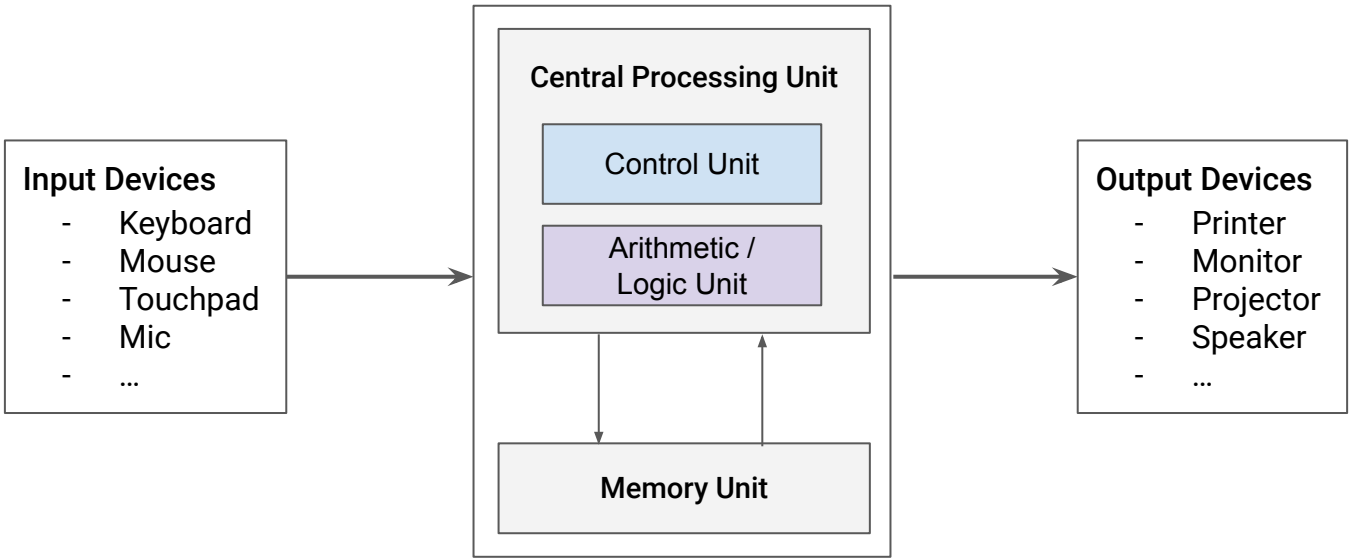
Tentative Course Plan

Week	Lecture	Lab	Due[1]
Week-9 [14 Mar 2022]	In-semester Break	LA - 3	
Week-10 [21 Mar 2022]	OOP: Interfaces	LA - 3	Sunday, 27 Mar 2022
Week-11 [28 Mar 2022]	OOP: Polymorphism, Encapsulation	LA - 4	
Week-12 [4 Apr 2022]	File I/O	LA - 4	
Week-13 [11 Apr 2022]	Wrapper classes, Generic classes	LA - 4	
Week-14 [18 Apr 2022]	Object lifetime and Garbage collection	LA - 4	Sunday, 24 Apr 2022
Week-15 [25 Apr 2022]	Course Evaluation		

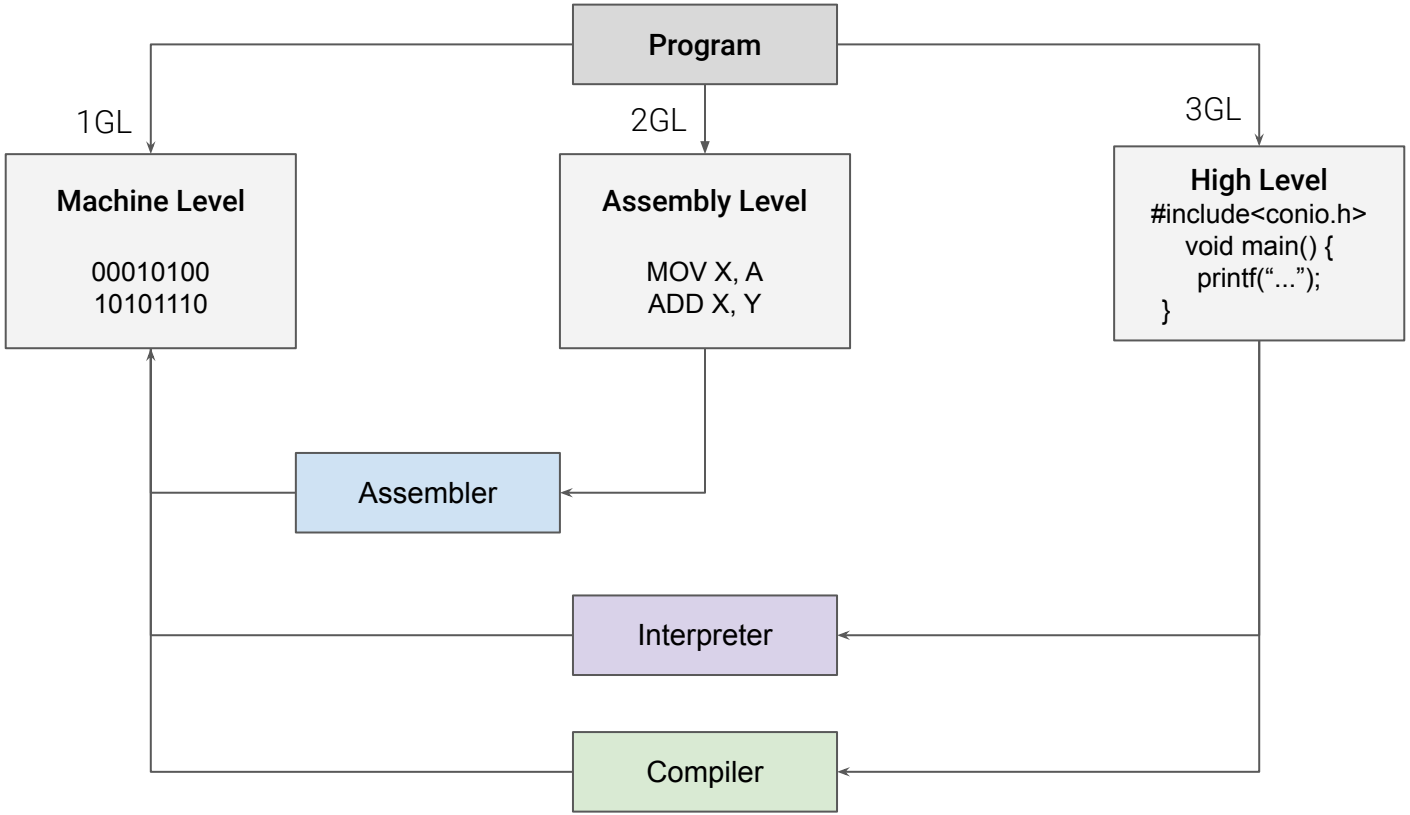
1 – Lab Assignments (LAs) are due at 10:00 PM on the due date listed.

Introduction

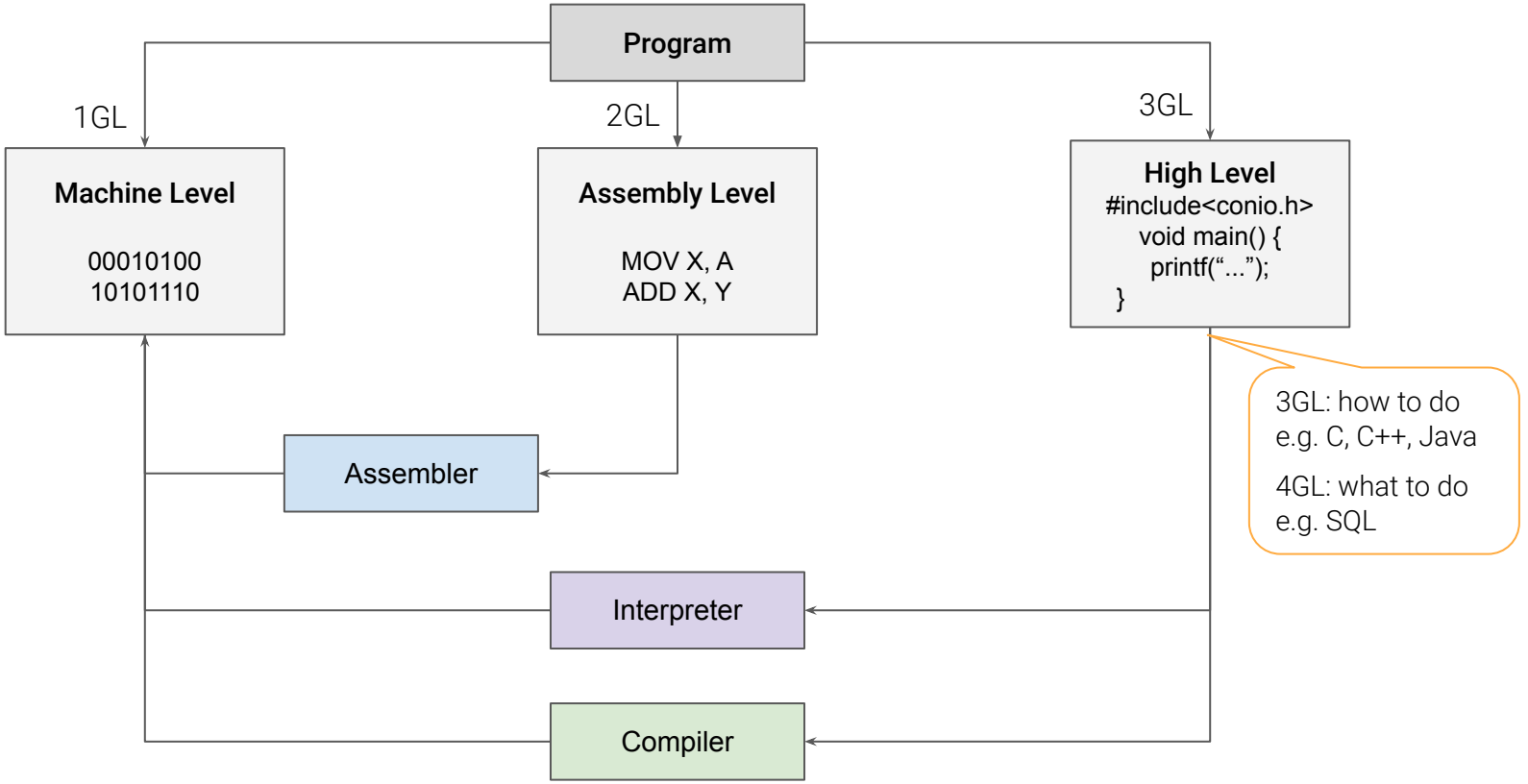
Von Neumann Architecture of Computing



Programming Languages



Programming Languages



Programming Paradigms

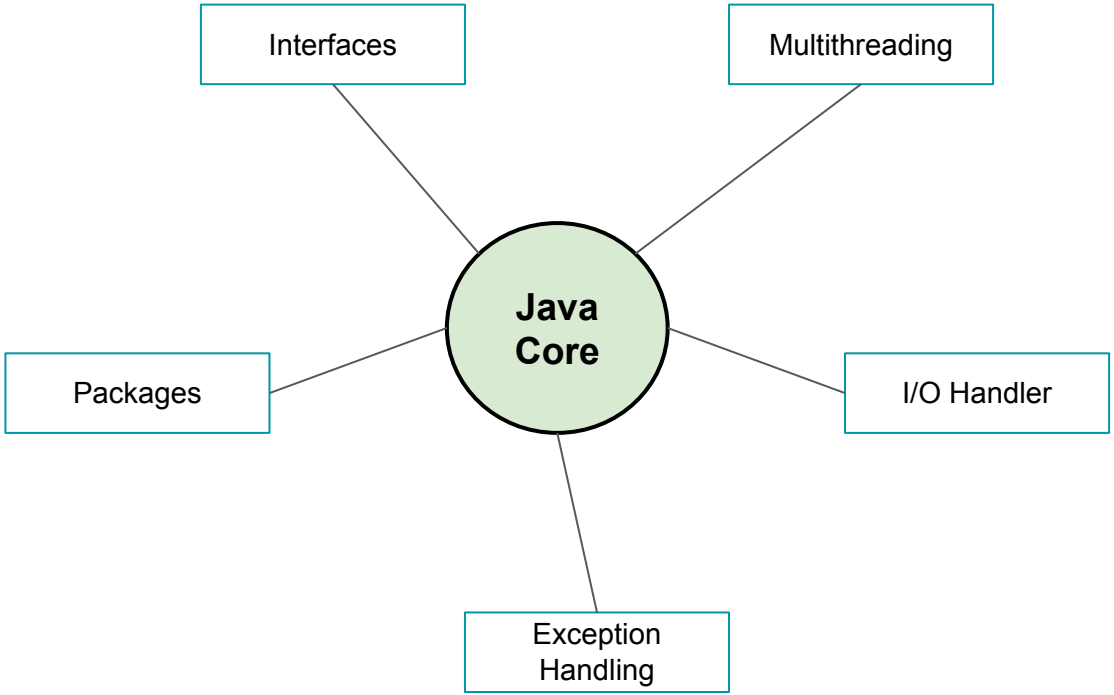
Function-Oriented Programming

- Modularize the entire program into small set of functions
- All the functions share some data stored in a common pool
- e.g. C programming

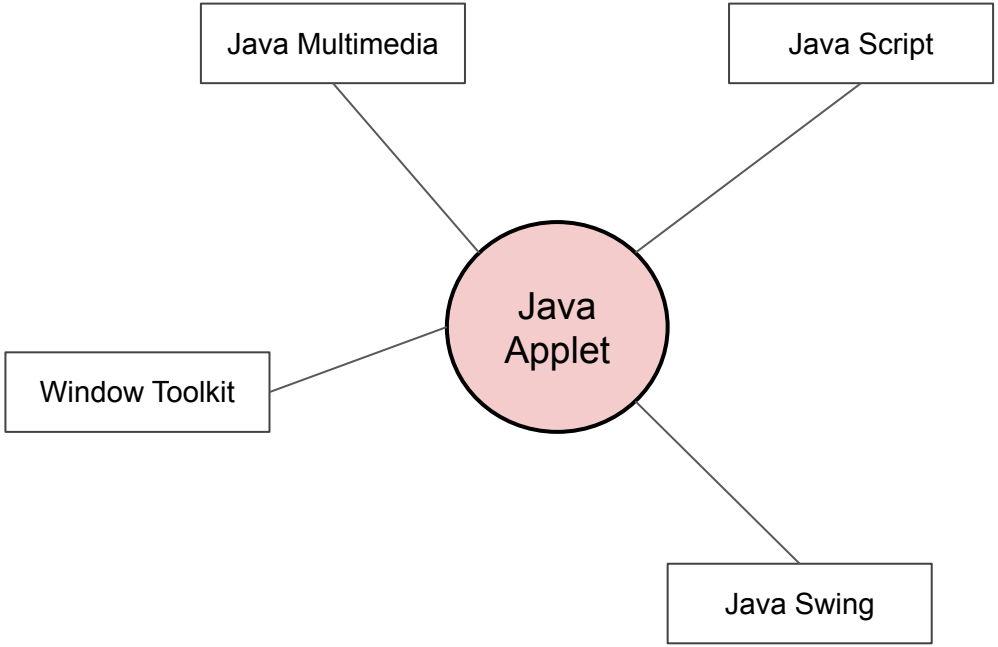
Object-Oriented Programming

- Program is conceptualized in the form of a set of objects
- Data is distributed among the different objects
- e.g. C++, Java programming

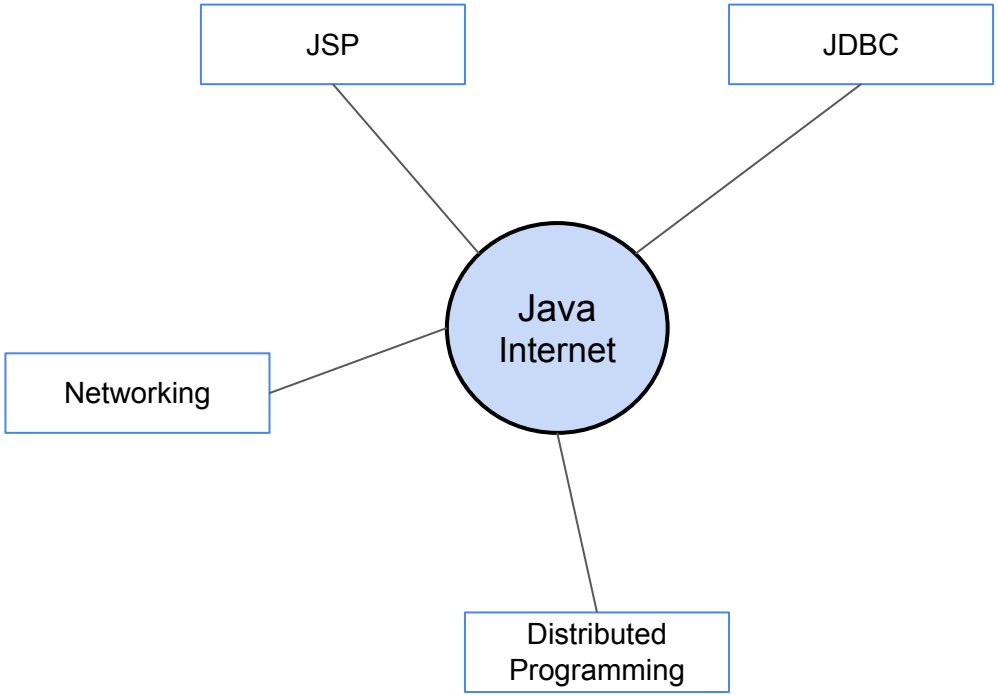
Java Programming Capabilities



Java Programming Capabilities



Java Programming Capabilities



Next lecture -
The Java Ecosystem