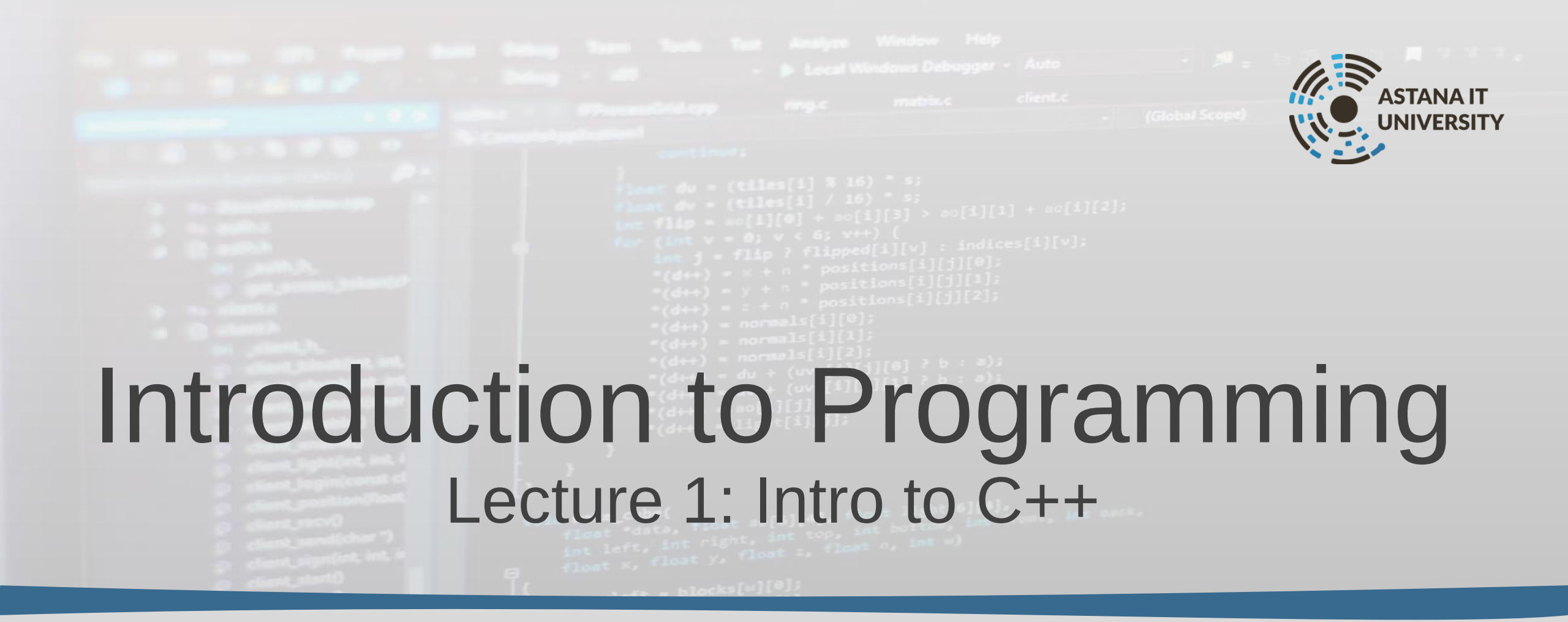

Introduction to Programming

Lecture 1: Intro to C++

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Content

- Computer Program
- C++ as a first language
- Levels of programming
- Compiler and Linker
- IDE and books

Computer program

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- A **sequence of instructions** which can be executed by a computer is called a computer program or software
- These instructions are written in some programming language
- A finite, deterministic, and effective problem-solving method suitable for implementation as a computer program, typically to solve a bunch of problems or to perform a computation, is so called **Algorithm** (named after Muhammad ibn Musa al-Khwarizmi)

C++ as a first language

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- Standard by which all other languages are judged
- Full control on memory
- One of the fastest programming languages in terms of execution
- Facilitates structured and disciplined approach to computer program design

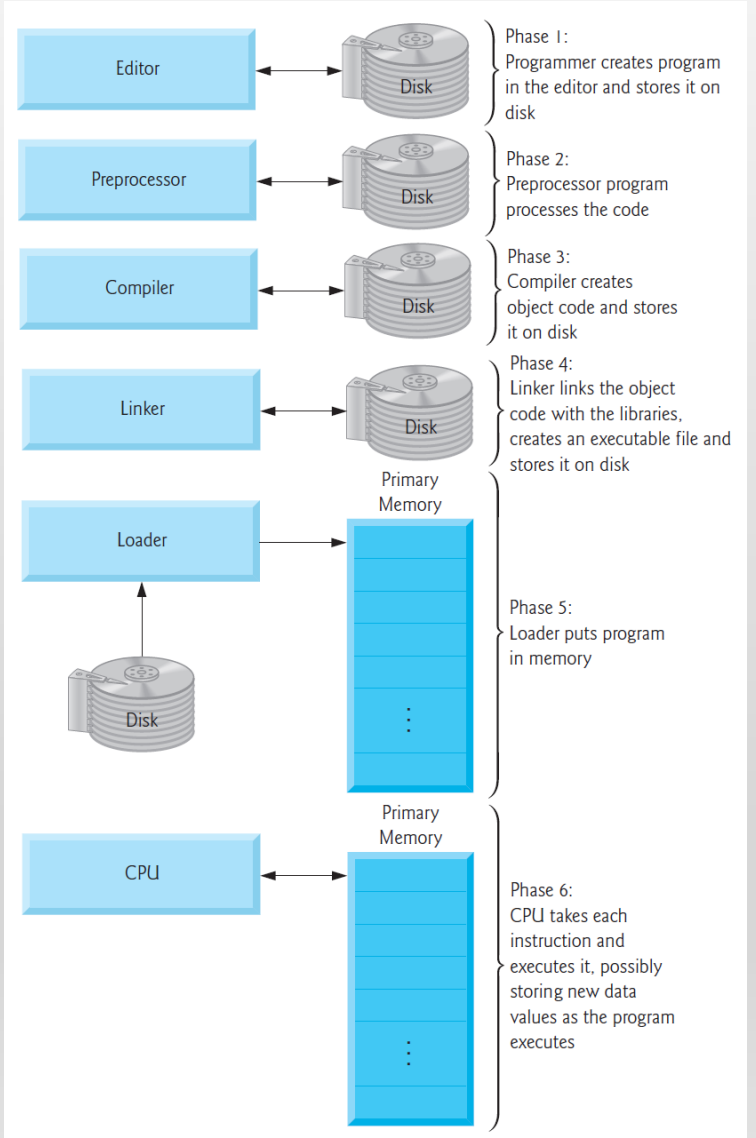
Levels of programming

- High-level
- Middle-level
- Low-level

Highest level	Ada
	Modula-2
	Pascal
	COBOL
	FORTRAN
	BASIC
Middle level	Java
	C#
	C++
	C
	Forth
	Macro-assembler
Lowest level	Assembler

Compiler and Linker

- Translator programs called **compilers** convert high-level language programs into machine language – also referred to as **object code**.
- A **linker** links the object code with the code for the missing functions to produce an **executable program**



Types of Programming

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- Procedure-Oriented Programming (POP) is based on the list of instructions where each statement tells the computer what to do step by step (Linear programming).
- Object-Oriented Programming (OOP) is a programming paradigm based on the concept of **objects** (Will be covered in the next course).

IDE and books

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- Which IDE to use?
  1. Visual Studio 2019 (recommended)
  2. Code::Blocks or Dev C++
  3. Xcode or Netbeans
- There are couple of books which are used to conduct this course:
  1. Deitel P.J. and Deitel H.M. 2017. C++ How to Program, 10th global edition
  2. Herbert Schildt. 2003. The Complete Reference C++, 4th edition

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Good luck