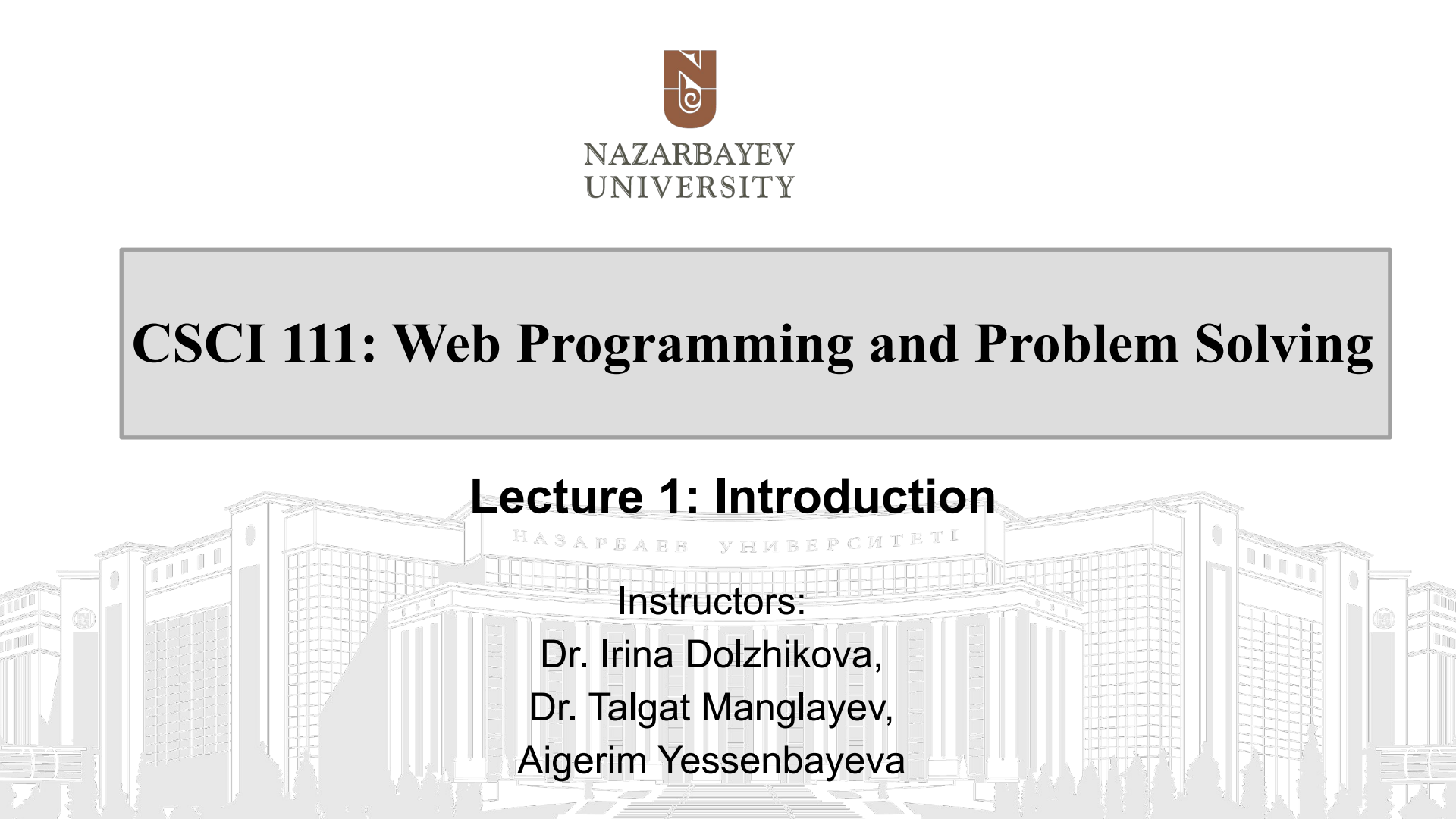

CSCI 111: Web Programming and Problem Solving

Lecture 1: Introduction

Instructors:
Dr. Irina Dolzhikova,
Dr. Talgat Manglayev,
Aigerim Yessenbayeva

Outline

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- Introduction
- About the Course
- Class Policies
- How does the web work
  - IP addresses and Domain names
  - DNS and getting domain
  - Client-Server Model
  - Websites and their architecture
  - HTML, CSS, JavaScript

About the Course

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- **Instructor:**

  Talgat Manglayev

  Email: talgat.manglayev@nu.edu.kz

  Office: 7e428

  Office Hours: TBD

- **Grading:**

  Course Project: 35%

  Quizzes (3): 30%

  Lab Assignments: 30%

  Attendance: 5%

About the Course

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- This is a basic introduction to *Web Programming*

- What you are expected to learn:
  - Understand how does the **web** works
  - Create web pages using **HTML** and **CSS**
  - Add some interactivity to the web pages with **JavaScript**
  - Solve problems using **Excel** and use data in your web pages

Course Materials

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Extensive online digital resources (readings, references, tutorials) will be utilized throughout the course.

Recommended resources:

- ❑ Lecture notes on Moodle
- ❑ A book: Creating a website
- ❑ Tutorials: w3schools.com or developer.mozilla.org
- ❑ HTML CSS and JavaScript for Beginners - A Web Design Course

Deadlines are important!

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- There will be Soft and Hard Deadlines

- Late submissions (later than 60 minutes) after the Soft deadline are penalized by 50%

- Late submissions after the Hard deadline are not accepted

Plagiarism

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- “A piece of writing that has been copied [or closely paraphrased] from someone else and is presented as being your own work”

- “The act of plagiarizing; taking someone's words or ideas as if they were your own”

- **Plagiarism results in an automatic F in the course and may result in your suspension from the program!**

- Whenever in doubt, ask the instructor

Class Behaviour

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- Personal responsibility (Self study!!!)
- Behave professionally & respectfully
- In class: English only
- You will make mistakes (and that’s okay)
- Get involved and have fun!

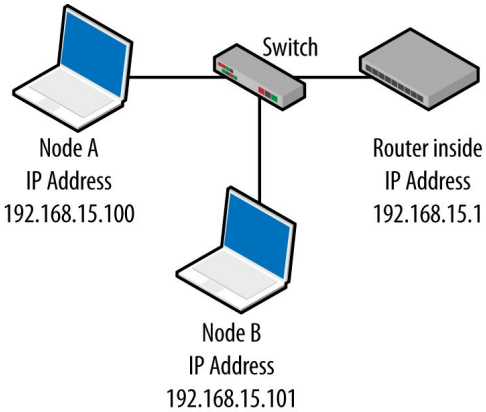
IP addresses

An **Internet Protocol (IP)** address is a unique identifier of a particular device on the Internet network

- PC, mobile, router, smart watch, TV
- Example: 178.91.253.180 [Format is A.B.C.D]

- IP addresses are mathematically produced and allocated by the **Internet Assigned Numbers Authority (IANA)**

- **Types** of IP addresses:
  - public/private (global/local)
  - static/dynamic
  - dedicate/shared



Domain Names

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A **domain name** (or domain) is a text string (name) that's associated with an IP address on the Internet.

- It is a unique name
- Easy to remember for human
- Example: nu.edu.kz, google.com

Types of Domain names:

- Root domain (top-level) – .com, .org, .kz, .ru,
- Subdomains (other levels) – google.com, nu.edu.kz, library.nu.edu.kz

Domain Name System

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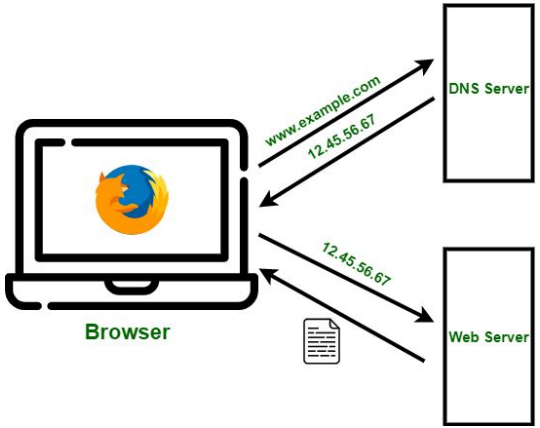
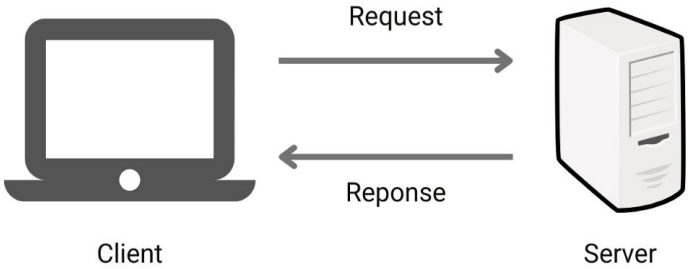
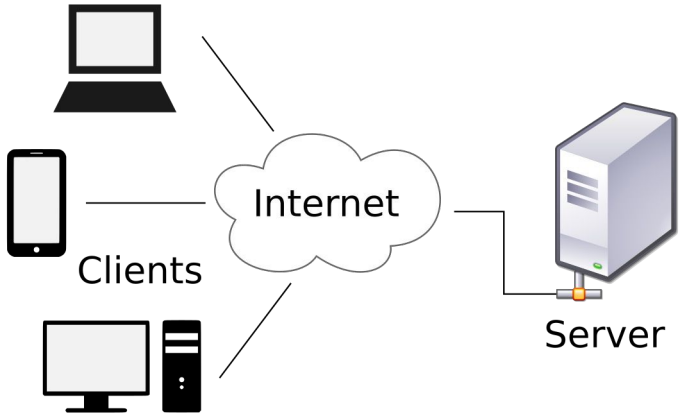
The Domain Name System (DNS) is the hierarchical and decentralized naming system (database) used to identify computers reachable through the Internet or other Internet Protocol (IP) networks. [Wikipedia]

- DNS is a “phonebook” or ”librarian” that converts domain names to IP addresses
  - nu.edu.kz --> 178.91.253.180
- There are WHOIS services to lookup domains
  - godaddy.com, hoster.kz, domaintoipconverter.com
- The browser does a domain lookup for you



Client-Server Model





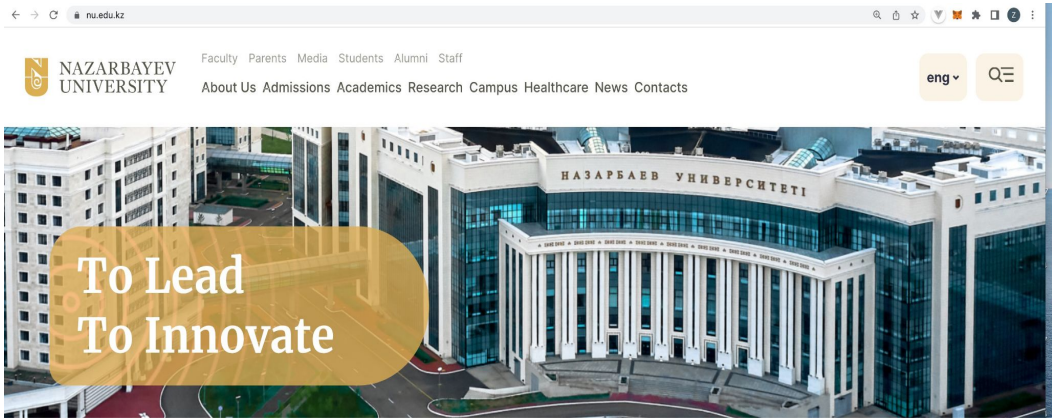
Websites

- A **website** is a collection of web pages and related content that is identified by a common domain name and published on at least one web server with an IP address.

Domain: nu.edu.kz

IP address: 178.91.253.180
Web pages and their URLs:

- About Us - https://nu.edu.kz/about)
- Admission - https://nu.edu.kz/admissions
- Academics - https://nu.edu.kz/academics
- etc.



Website Architecture

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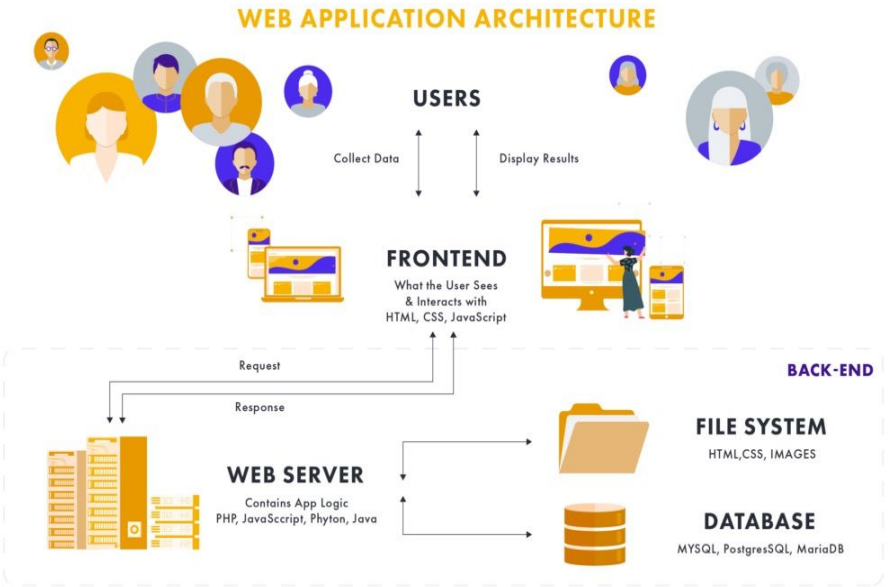
- A typical architecture of a website consists of:
  - Front-end part (user interface): HTML, CSS, JavaScript
  - Back-end part (business logic): Python, Java, PHP, etc.
  - Database: MySQL, PostgreSQL, MS SQL, Oracle
  - File System: images, audio, video, web pages

- **Front-end:** what users see and interact with.
- **Back-end:** the underlying system that supports and processes user interactions.

- A website can be **static** or **dynamic** depending on the content generated.



HTML, CSS, Javascript

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Hyper-Text Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser.

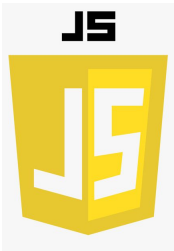
It describes the structure of the web page

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML.

It describes the style of the web page

JavaScript (JS) is a lightweight and interpreted programming (or scripting) language for Web pages.

It adds interactivity to the web page



Key takeaways

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- IP address
- Domain name
- DNS
- Client-Server Model
- Web Server
- Websites
- Web Architecture
- Frontend/Backend
- HTML, CSS, JavaScript

Thanks for Attention!