# Семинар 15. Shell and etc.

# Shell Scripting - The Basics

A series of commands for the shell to execute.

- Components:
  - Shebang (e.g., #!/bin/bash)
  - Comments (e.g., # This is a comment)
  - Commands (e.g., echo "Hello World!")
- Variable usage (e.g., name="Alice"; echo \$name)
- Passing arguments (e.g., echo \$1 to echo the first argument)
- Basic control structures (e.g., if statement, for loop)

# Using 'grep' for Pattern Matching

Command that searches for patterns in files/streams.

- Syntax: grep [options] pattern [files]
- Examples:
  - Basic usage: grep error log.txt
  - With options: grep -i -n error log.txt

### Task: Count lines of multiple files

- Validate number of arguments (at least 1 file should be provided)
- Write some advice for incorrect amount of arguments
- Use wc -I for counting lines

# Finding Files with 'find'

Searches for files in a directory hierarchy.

- Syntax: find [path] [options]
- Examples:
  - Find by name: find /home/user -name "\*.txt"
  - Find by modification time: find /home/user -mtime -1

# Downloading and Uploading with 'curl'

Command-line tool for transferring data using various protocols.

- Syntax: curl [options] [URL]
- Examples:
  - Download a webpage: curl -o webpage.html http://example.com
  - Send a POST request: curl -d "param=value" http://example.com/form

### Version Control with 'git'

#### Key Concepts:

- Repository: git init
- Staging: git add [file]
- Committing: git commit -m "commit message"
- Branching: git branch [branch\_name]
- Merging: git merge [branch]