



Primary Programming Summer Lesson 1

Attila Lengyel



Summer Instructors Team

Attila Lengyel, PhD

- 1999: MSc in information technology at Miskolc University, Hungary
- 2004: PhD in system science at Kobe and Tokyo University, Japan
- 2004-2012: Researcher in Operations Management at Hitachi, Ltd, Japan
- 2013 - : Strategic Planning, HGST a WD Company

College Students

- Victor Vong
- Eric O'Riley
- Peter Walker
- Thomas Baker

Alumni

- Rushil Srivastava
- Jacob Brashears

Vision and Mission

Make computer programming a positive experience for all. After all, isn't cool to learn how to tell the computer to do whatever we want them to do?

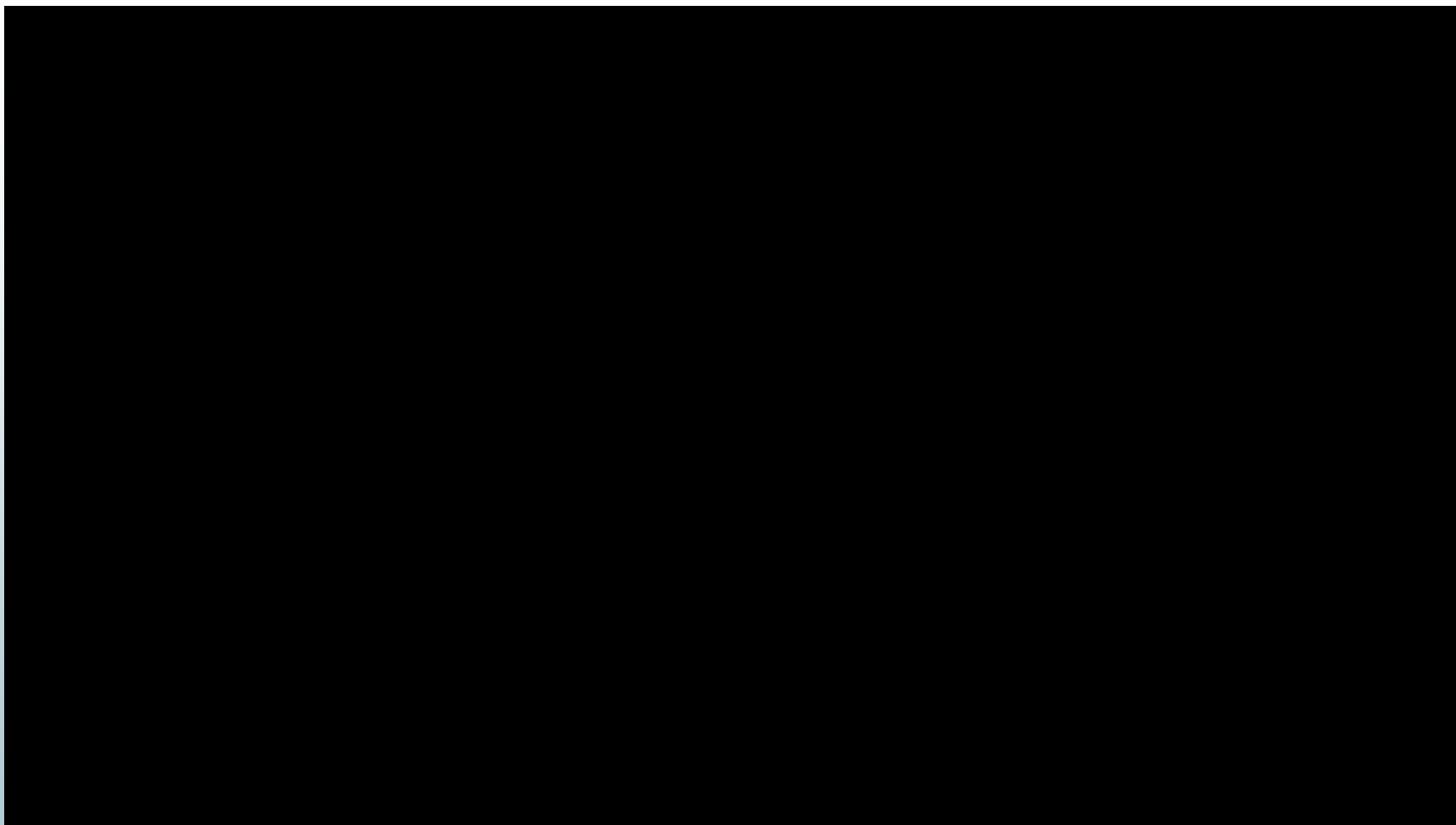


Summer Course Objectives

- We will learn how to use a new cloud based integrated development environment koding.com
 - ✓ All your projects will be available from any device
 - ✓ You will be able to program anywhere
- We will discuss how simple algorithms work
 - ✓ Sorting numbers
 - ✓ Finding simple mathematical solutions
- We will learn simple coding in Java
 - ✓ Variables
 - ✓ Control flow
 - ✓ Loops
 - ✓ Random numbers

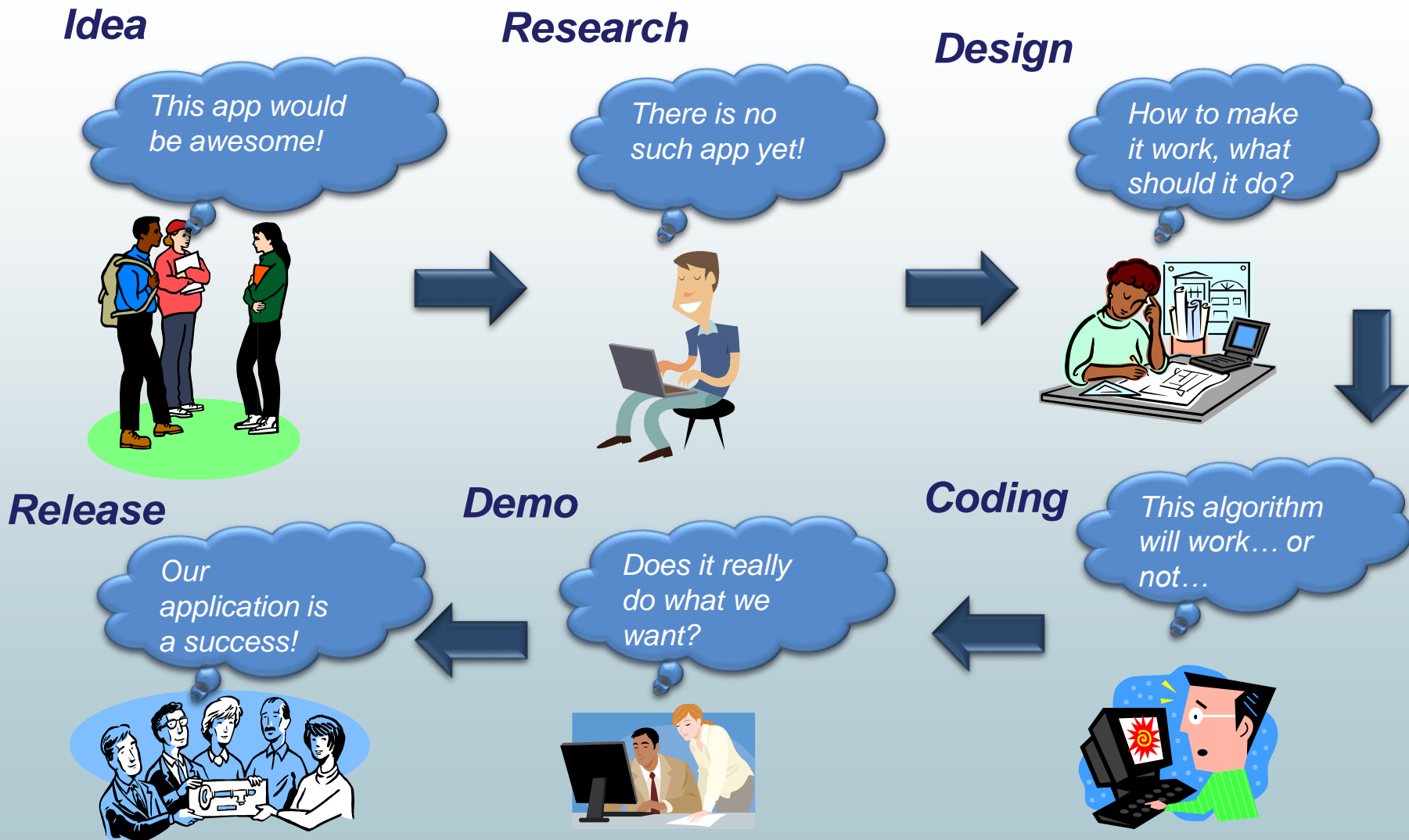


There is a start for everyone...





Creating an Application





Cloud Computing

Why cloud?



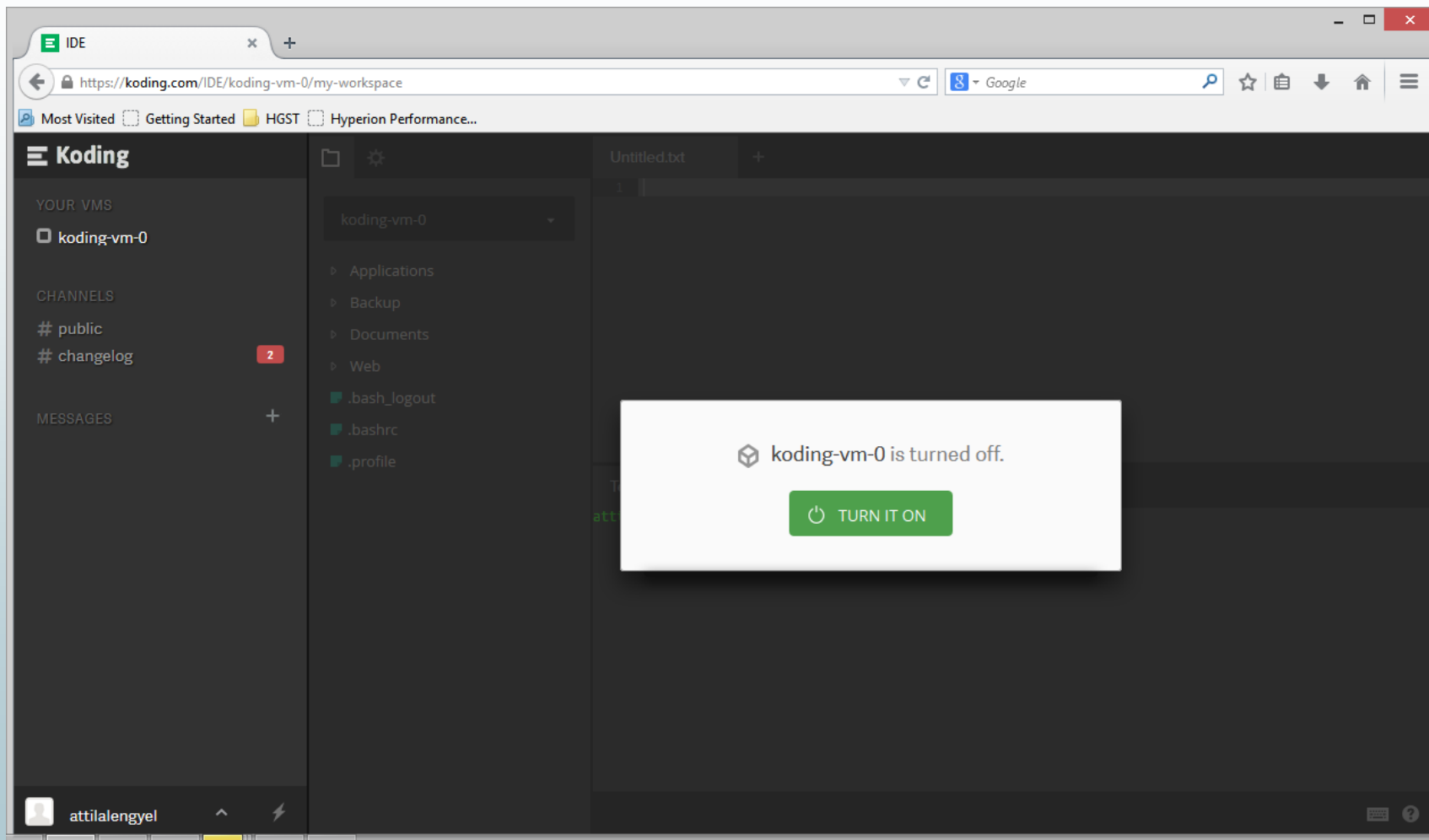
- No, there are no computers in the sky behind clouds
- In drawings of computer network structures engineers started to use cloud symbol for networks in the 90s
- The “cloud” relates to a communication network among a large amount of computers such as Internet

How koding.com works?





Sign into your koding.com account and turn on your computer in the cloud





This the interface to your computer

The screenshot displays the Koding IDE interface, which is divided into several sections:

- Menu:** Located on the left side, it includes sections for "YOUR VMS" (showing "koding-vm-0"), "WORKSPACES" (with "My Workspace" and "programming"), "CHANNELS" (with "# public" and "# changelog"), and "MESSAGES".
- File browser:** A central pane showing the file system structure for the user "attilalengyel". It lists various files and folders such as ".config", "Applications", "Backup", "Documents", "Web", "Workspaces", ".bash_history", ".bash_logout", ".bashrc", ".profile", "HelloWorld.class", "HelloWorld.java", "README.md", "test.pdf", "test.txt", and "TestProblems.pdf".
- File editing:** The main workspace area, currently showing an "Untitled.txt" file. The text "File editing" is overlaid on this area.
- Terminal:** A terminal window at the bottom right, titled "Terminal", showing the command prompt "attilalengyel: ~ \$" with a green cursor.

At the bottom of the interface, there is a status bar with the user name "attilalengyel", a "Terminal on koding-vm-0" indicator, and a "SHARE" button.



Save the file as HelloWorld.java

The screenshot shows the Koding IDE interface in a browser window. The browser address bar displays `https://koding.com/IDE/koding-vm-0/my-workspace`. The IDE interface includes a sidebar on the left with navigation options like 'YOUR VMS', 'CHANNELS', and 'MESSAGES'. The main workspace is divided into a file explorer, a code editor, and a terminal. The file explorer shows a directory structure with files like `.bash_history`, `.bashrc`, and `HelloWorld.java`. The code editor shows a Java file named `HelloWorld.java` with a context menu open, highlighting the `Save As...` option. The menu also includes options like `Save`, `Save All`, `Syntax`, `Preview File`, `Find`, `Find and Replace`, `Search in All Files`, `Find File by Name`, and `Go to Line`. The code editor content shows a partial Java method signature: `args) {` and `d");`. The status bar at the bottom indicates the current file is `HelloWorld.java` at line 6, column 2.



Type in the following code into the editor

HelloWorld...

+

```
1 class HelloWorld {  
2  
3     public static void main (String[] args) {  
4         System.out.println("Hello World");  
5     }  
6 }
```



Type in the following commands into the terminal

```
Terminal +  
attilalengyel: ~ $ javac HelloWorld.java  
attilalengyel: ~ $ java HelloWorld  
Hello World  
attilalengyel: ~ $ █
```



**Congratulation! You have completed
your first computer program.**