

# Internet of Things

Welcome to SoftUni

Internet of  
Things



SoftUni Team  
Technical Trainers



**SoftUni**



Software University

<https://softuni.bg>

# Have a Questions?

[sli.do](https://sli.do)

**#IoTThings**

# SoftUni Diamond Partners



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# Course Objectives

# Course Objectives and Program

24-Apr-24	<b>Introduction to IoT</b>	<i>IoT: Basic Concepts and Principles (Internet of Things)</i> <i>MQTT vs. Web Services</i> <i>WokWi: Introduction and Usage</i>
08-May-24	<b>Simulation and Modeling</b>	<i>WokWi: Introduction and Usage</i> <i>Simulation of IoT devices and networks with WokWi</i> <i>Hands-on project 2: Modeling and testing an IoT system with WokWi</i>
15-May-24	<b>IoT and Networking Communications</b>	<i>Protocols and technologies for network communication in IoT</i> <i>Wireless networks for IoT (Bluetooth, WiFi, LAN, ZigBee, LoRaWAN)</i> <i>Practical project 3: Setting up IoT communications</i>
22-May-24	<b>ESP Rainmaker</b>	<i>Principle of operation with ESP Rainmaker</i> <i>Connecting ESP Rainmaker to AWS IoT</i> <i>Hands-on Project 4: Building an IoT Cloud Application with AWS IoT</i>
29-May-24	<b>Cyber Security in IoT</b>	<i>Threats and risks in IoT</i> <i>Strategies for securing IoT devices</i> <i>Hands-on project 5: Improving the security of your IoT devices</i>
05-June-24	<b>Integration and Advanced Opportunities</b>	<i>Interaction between different IoT devices</i> <i>Work with sensors and actuators</i> <i>Practical project 6: Creating a smart IoT system</i>
12-June-24	<b>Energy Efficiency and Power Management</b>	<i>Efficient power management in IoT devices</i> <i>Use of batteries and alternative energy sources</i> <i>Practical project 8: Optimizing the power supply of the IoT system</i>
19-June-24	<b>Exam Preparation</b>	
23-June-24	<b>Exam</b>	
30-June-24	<b>Retake Exam</b>	



**Trainers Team**

- Electrical engineer **@Visteon**
- Designed or led the design process of over **30 devices**
- Worked for almost every industry including medical, automotive, manufacturing, consumer
- Experience as a **software architect** and **consultant**







# Course Schedule

# Training Duration

- Lectures: ~ 25 hours
- Exam: 4 hours
- Schedule: April - June 2024
  - Every Wednesday between 18:30 h and 21:30 h
- Exam date
  - Regular Exam— 23 June 2024
  - Retake Exam — 30 June 2024



18:30 – 19:30 Part 1  
19:30 – 19:45 Break 1  
19:45 – 20:45 Part 2  
20:45 – 21:00 Break 2  
21:00 – 21:30 Part 3

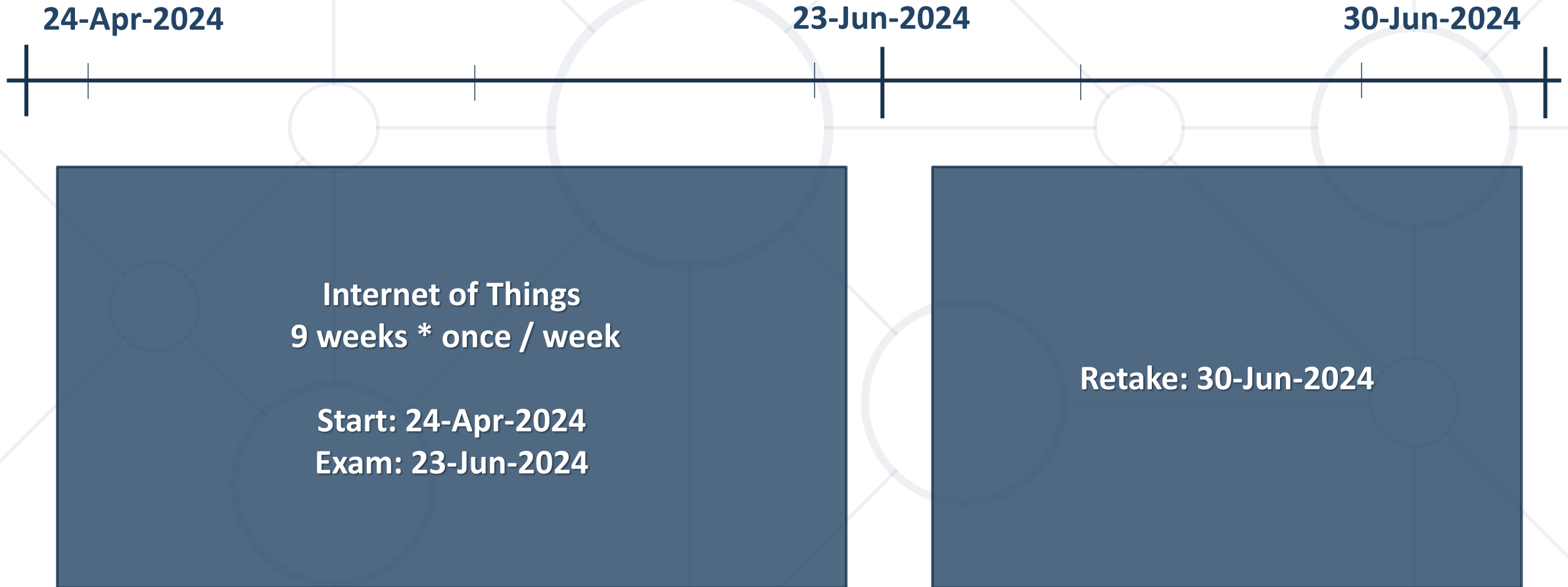
# In the End of the Course, You Can...



- Understand the concepts of **IoT**
- Simulate your **IoT device**
- Make end-to-end sample of your **IoT idea**
- Understand the data flow of **IoT devices**
- Decide on different **IoT architectures**

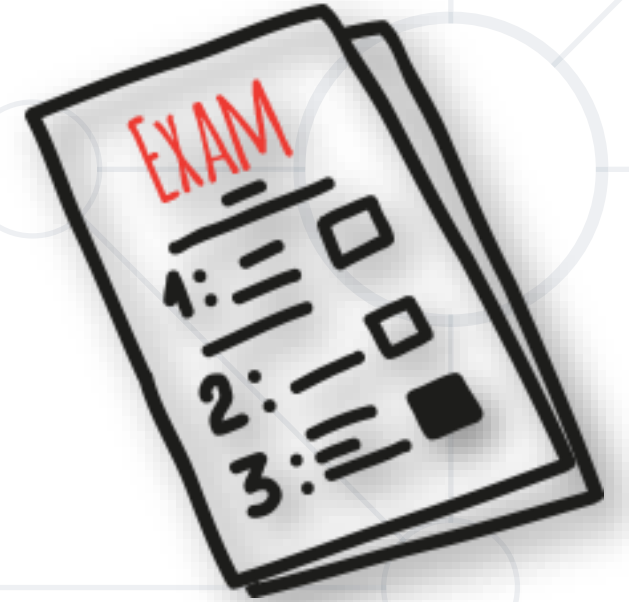


# Exams and Evaluation



# Practical Exam

- Exam: **23 June 2024**
- Retake: **30 June 2024**
- Time: **9:00 – 13:00**
- Needed time: **4 hours**



# Theoretical Exam

- 10 questions for 30 minutes
  - Multiple-choice
  - English
- Time: 9:00 – 13:30
- Automated quiz system
- Available online
  - You can submit your answers just one time



# Scoring System for the Course

- **Practice** grade:

**Practical Exam**

100 %

- **Theory** grade:

**Theoretical Exam**

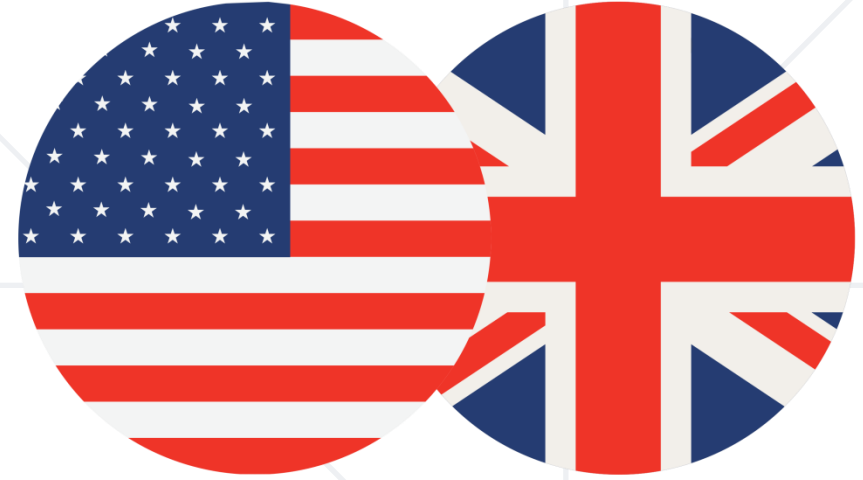
100 %

- SoftUni Certificate: **5.00** from **Practice**
- CPE Certificate: **3.00** average from **Practice + Theory**



# Why English?

- Why the slides are in English?
  - English is the native language of the engineers
  - Specific terminology should be in English
    - Translations are inaccurate and funny
- Just learn English!
- No excuses!



- Official web site:

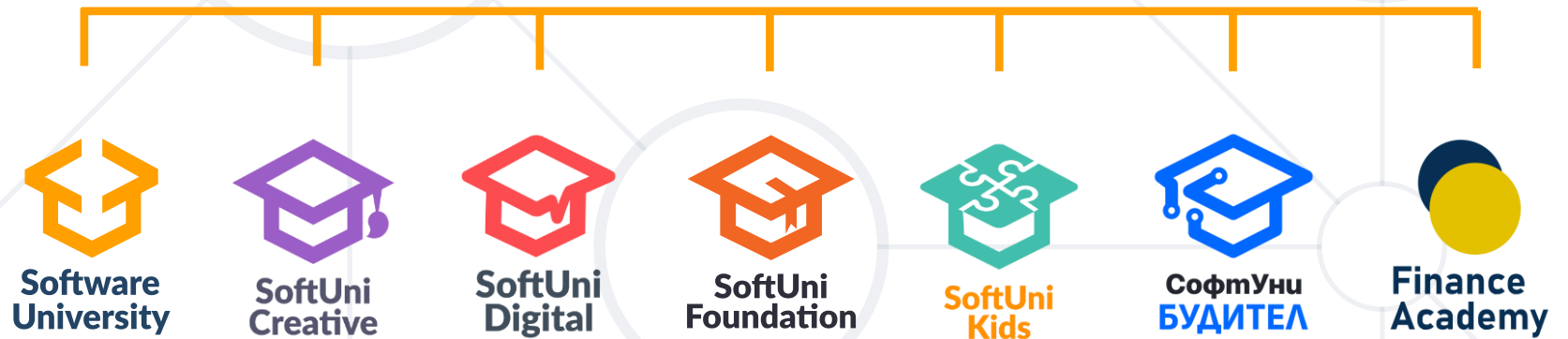
<https://softuni.bg/trainings/4599/internet-of-things-april-2024>

- Official Facebook group:

<https://www.facebook.com/groups/internetofthingsapril2024>



# Questions?



- Software University – High-Quality Education, Profession and Job for Software Developers

- [softuni.bg](https://softuni.bg)

- Software University Foundation

- [softuni.foundation](https://softuni.foundation)

- Software University @ Facebook

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