RAMDE - Engenharia Orientada a Requisitos e Modelos

Project - Assignment 1
Design, Code and Test Best Practices

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Outline

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Required: Team and Project Repository

1. Have you already formed a team (2 students) to develop the project?
   - NO!!! What are you waiting for...
2. Have you already informed the teacher by email of your team?
   - NO!!! Do it ASAP to "pam@isep.ipp.pt"
   - Do not forget to had your team mate(s) in "cc"
3. Did you receive the link/invitation to the assigned team project repository?
   - NO!!! Please, contact the teacher reporting this issue (if necessary)
4. Did you check that you have read/write access to the assigned team project repository?
   - NO!!! Do it ASAP
   - Please, contact the teacher in case you do not have read/write access to it

When you answer "Yes" to all these questions, then you are ready to proceed.

Software and Tools

Before proceeding to the assignment tasks, ensure that you have the following tools installed and properly operational:

- Java IDE (e.g.: Eclipse) and a (recent) Java Virtual Machine (e.g.: >=17)
  - In last practical class you should have installed Eclipse
  - But, in this assignment, if necessary, you might use other
- Git
- Bitbucket account registered with ISEP email
- **Maven** (see instructions in `https://maven.apache.org`))
  - Check it by executing "mvn –version" on command line terminal
  - If not working, check installation and/or if the "Path" environment variable has the right "maven home"
- **Maven Plugin for Eclipse** (for those using Eclipse)
  - Menu "Help/Install New Software..."
  - Select "2024-06 - https://download.eclipse.org/releases/2024-06" on the "Work with" field
  - Search for "m2e" (this is the name of the Maven plugin for Eclipse)
  - Install the M2E plugin

Outline

State Machines Overview

1. Navigate to the following website:
   `https://www.itemis.com/en/products/itemis-create/documentation/user-guide/overview_what_are_state_machines`

2. Read the available content in order to get knowing (at least)
   - What a state machine is?
   - What are **Moore** state machines?
   - What are **Mealy** state machines?
   - What are the differences between Moore and Mealy state machines?

State Machine Project Example

1. Navigate to the following example project:
   `https://github.com/pafomaio/easy-states`

   (original author: Mahmoud Ben Hassine (mahmoud.benhassine@icloud.com), archived repository https://github.com/j-easy/easy-states)

2. Download this repository as a ZIP file
   - **Attention: do not clone this repository inside your repository!**

3. Unzip/Copy the repository content to the "assignment 1" folder of your team repository

4. Explore, briefly, the repository content

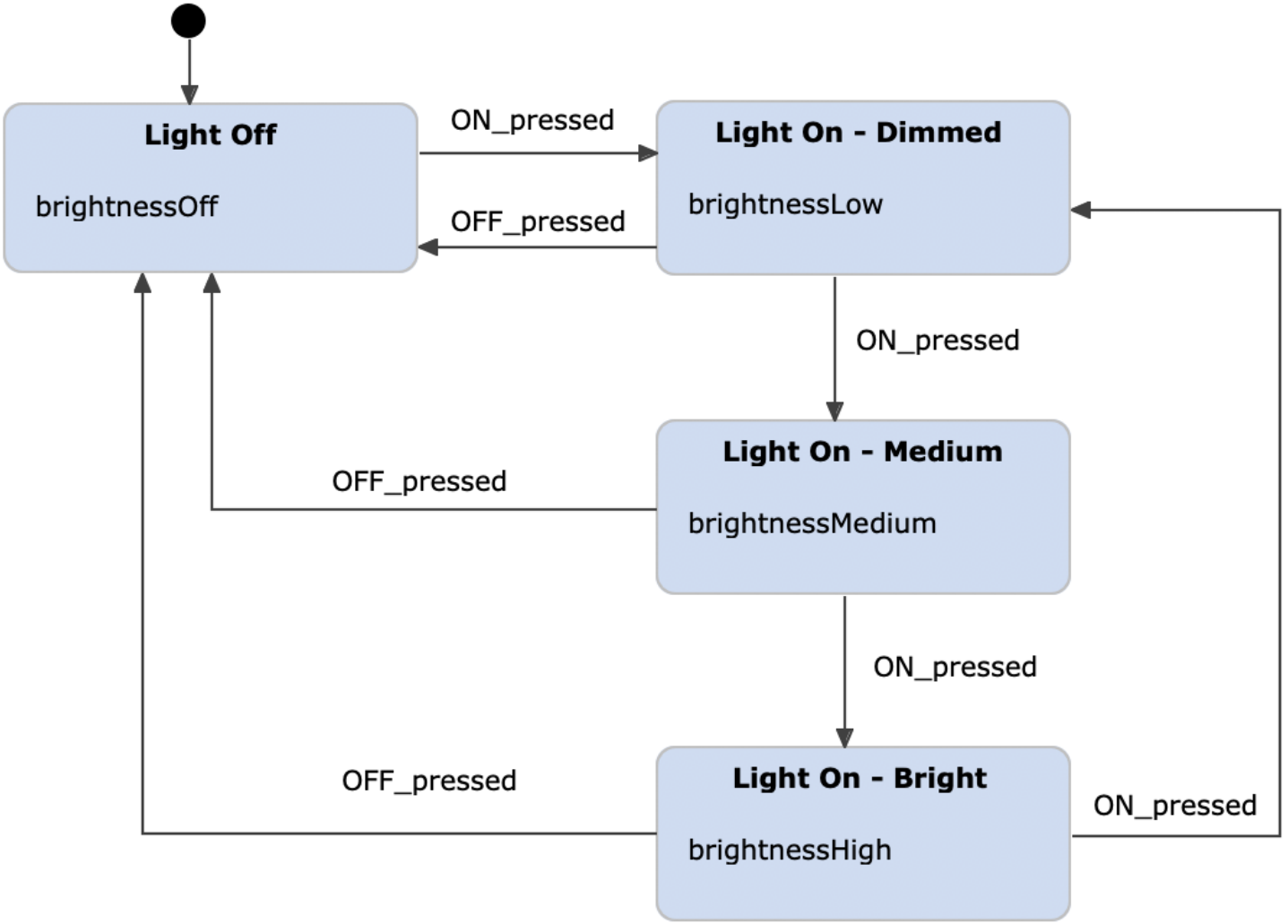
5. Try to run the "turnstile" example

Assignment Tasks

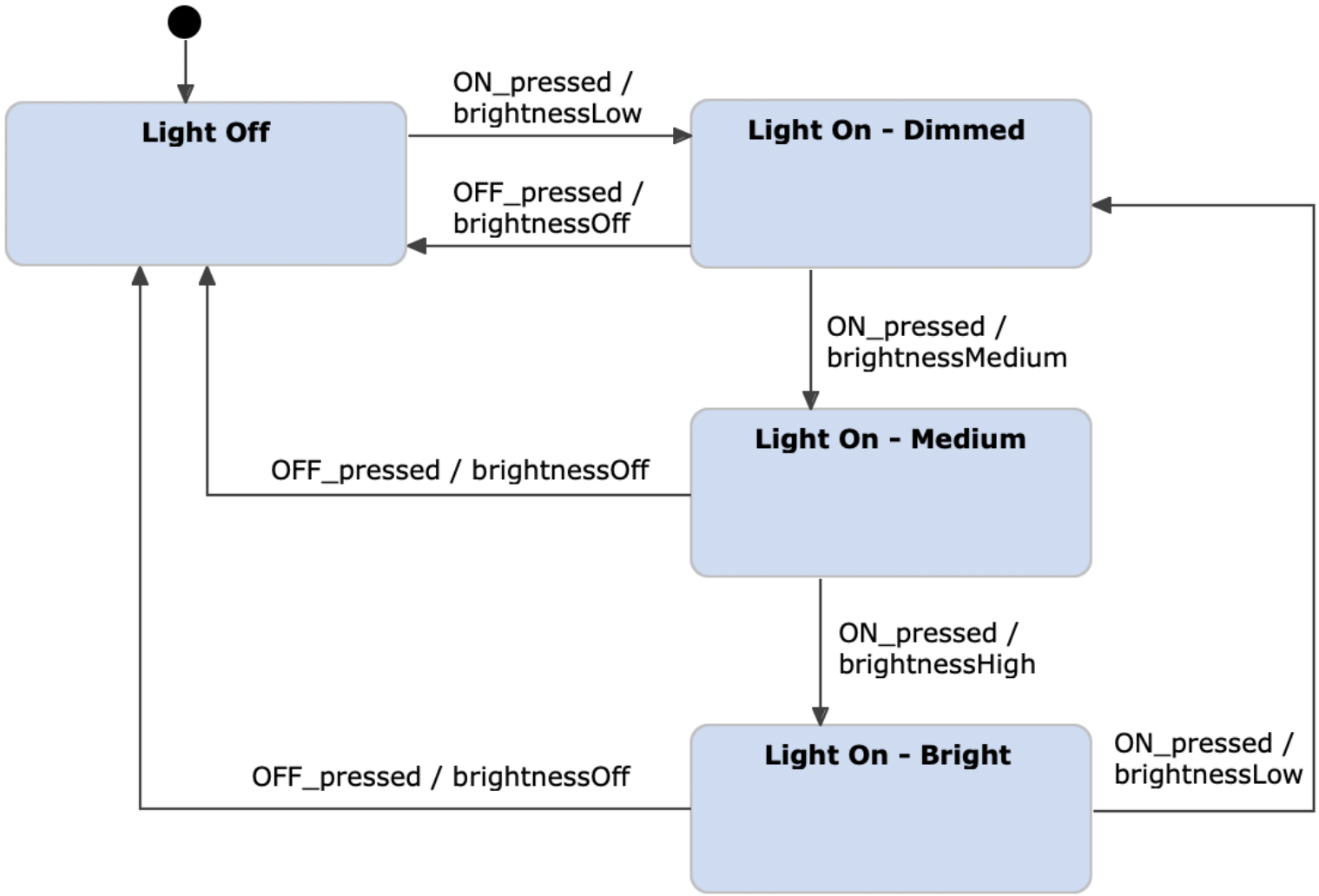
Considering the previous state machine project:

1. Evaluate the project regarding design and coding best practices
2. Evaluate if the project supports Moore State Machines. If not, try to update the project to support it
3. Evaluate if the project supports Mealy State Machines. If not, try to update the project to support it
4. Use the project to create a state machine for the light switch example
   - Depicted in slide 10 as a Moore State Machine
   - Depicted in slide 11 as a Mealy State Machine
5. Analyze the unit tests of the project and, if necessary, add more tests to improve coverage
6. Report your work in the readme file of the repository, following the template

Light Switch Example as a Moore State Machine



Light Switch Example as a Mealy State Machine



Outline

Project Assignment(s) Deadline(s)

Project assignments are drawn up to be developed by students in a sequential order, i.e., first students develop assignment P1, then assignment P2 and so on...

The foreseen project assignments schedule is depicted in the following table:

Part	Assignment	Release Date	Deadline
1	P1	2024/09/23 (W2)	2024/11/03 (W7)
	P2	2024/09/30 (W3)	2024/11/03 (W7)
	P3	2024/10/14 (W5)	2024/11/03 (W7)
	P4	2024/10/28 (W7)	2024/11/03 (W7)
2	P5	2024/11/04 (W8)	2024/11/24 (W10)

Unless stated otherwise, these deadlines must be honoured.

References & Bibliography I

[1] Alexandre Bragança. *Lectures Handouts on Requirements and Model-driven Engineering (RAMDE) 2023/24*. 2023.

Q&A

Questions?

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Thank You!