

Software Modeling 2021/22

doc. Ing. Valentino Vranić, PhD., ÚISI FIIT STU

Exam – January 14, 2022

The questions require you to use parts of your own project in Software Modeling. At the exam, you may use any sources. However, you must write your exam on your own. Communicating with persons other than the examiner is not allowed.

To write your exam, you may use whatever text editor you wish. If you need to draw a diagram, you can do so in Enterprise Architect, but you can do so also in tools for quick diagram sketching, such as UMLet. Afterwards, create one PDF file and submit it to the corresponding submission site in AIS by the end of the exam.

- if the answer is not related to the student's own project, that question score is zero
- the scores of the individual aspect of the questions are assessed in whole points only

1. (6 b) Explain the meaning of the generalization/specialization relationship between two use cases on a use case model example from your own project. Take into account the case when the more general use case is not completely abstract. If necessary, modify the example.

- a) basic explanation of the generalization/specialization relationship on a relevant example: 4 p
- b) explanation of step overriding: 2 p

2. (6 b) Explain the use of composite states on a state machine diagram example from your own project. If necessary, modify the example.

- a) explanation of basic (nonparallel) composite states on a relevant example: 4 p
- b) explanation parallel states: 2 p

3. (6 b) Set another precondition to one of the operations in the class that occurs in the algebraic specification in your project. How the algebraic specification should be modified to take this into account?

- a) amending of the corresponding precondition: 4 p
- b) explanation: 2 p

4. (6 b) Explain the meaning of the realization and usage of an interface on an example from your own project. If necessary, modify the example.

- a) introducing a relevant example (a class diagram): 2 p
- b) interface realization explanation: 2 p
- c) interface use explanation: 2 p

5. (6 b) Explain the alt combined fragment on a sequence diagram example from your own project. If necessary, modify the example.

- a) introducing a relevant example: 3 p
- b) explanation: 3 p