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| <b>Summer Semester 2017</b><br><b>Part Prof. Wanner</b> |             | No. of pages: 6<br>Page no.: 1 |
| Examination: Software Engineering 2                     |             | Time: 120 min                  |
| Aids: One double sided sheet A4, simple calculator      |             | Semester: ST                   |
| Name:   | First name: | Matricul.-No.:                 |

**Note:** The area left blank on the sheets usually is sufficient for the answer of the questions in terms of catchwords and/or for the solutions. Therefore write your name, semester and your matriculation number on each sheet and use these sheets for the delivery of your answers and solutions.

The stated points for each exercise are tentative and are subject to change.

### **Exercise 1 (9 Points)**

a) What are the different kinds of Continuous Integration. **Explain!**

b) Describe the important steps for creating an Ant custom task.

c) The following code is part of a project described using the Gradle DSL. Explain it.

```
dependencies {
    compile group: 'commons-collections',
            name: 'commons-collections', version: '3.2'
    testCompile group: 'junit', name: 'junit', version: '4.+'
}
```

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**Exercise 2 (13 Points)**

a) What is the YAGNI principle? What are the problems why you should apply this pattern?

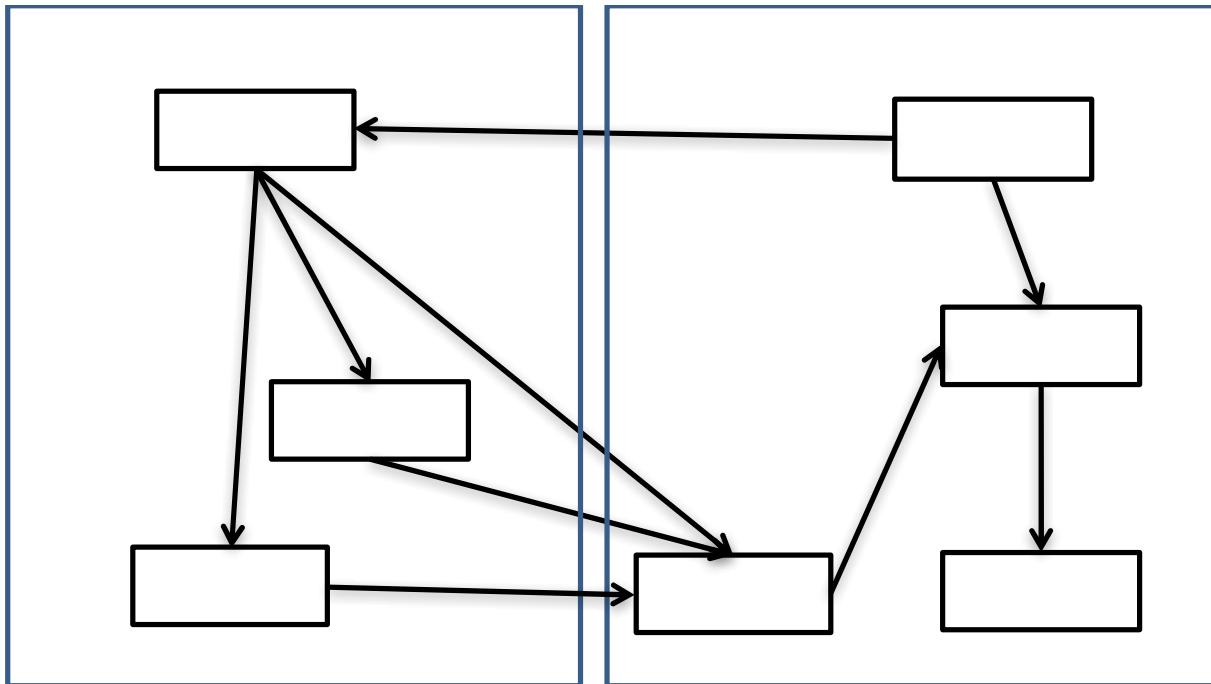
b) What is the Open Closed principle? Explain what the “Open” and the “Closed” part means for modules.

c) What is Cargo Cult Programming? Explain!

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### **Exercise 3 (13 Points)**

- a) Given is the following dependency graph of a system with two subsystems. Calculate the CD (Component Dependency) of all components and also calculate the CCD and the ACD.



|                             |                        |                |    |
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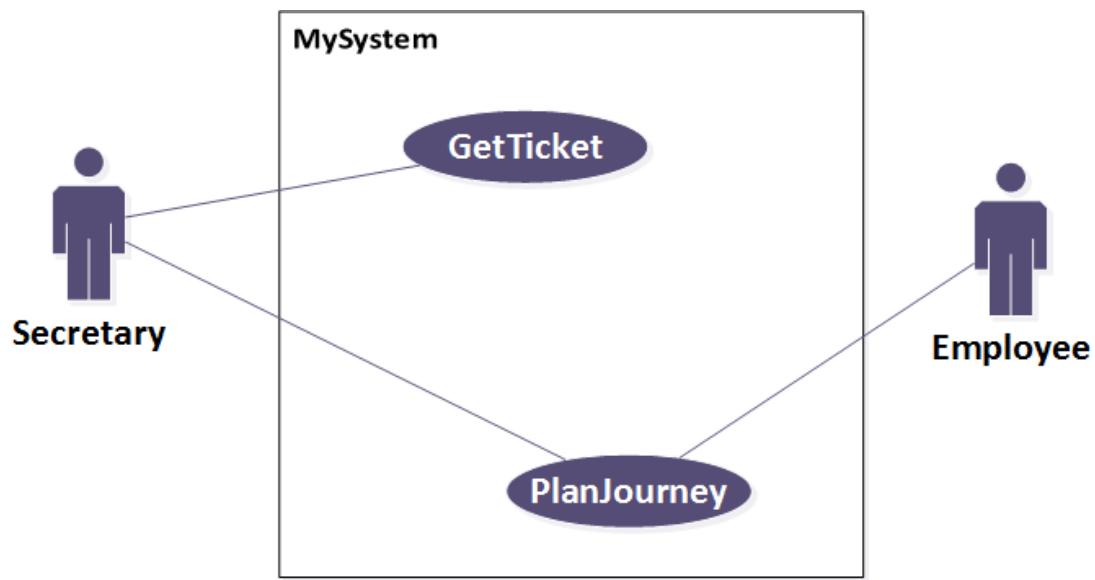
b) Optimize the system by **decoupling** the two subsystems **and** eliminate the cycles.

c) Calculate the CD, the CCD and ACD of your solution for b) (treat interfaces like classes).

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#### **Exercise 4 (13 Points)**

- a) Draw the metamodel for the following UML-model (Use Case model). Only include the necessary parts!



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b) What are the advantages of a DSL compared to a GPL?

c) What is the Meta Meta Model in UML?