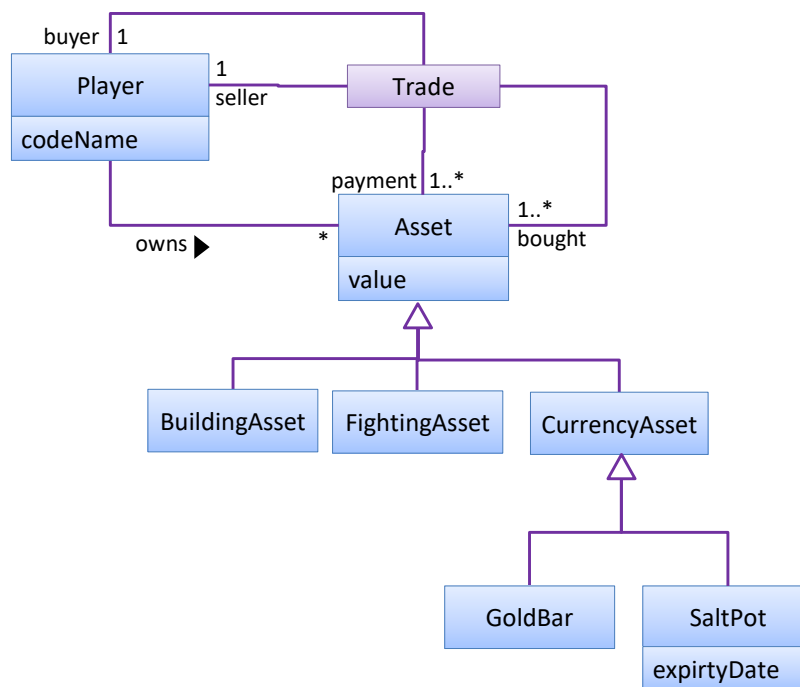


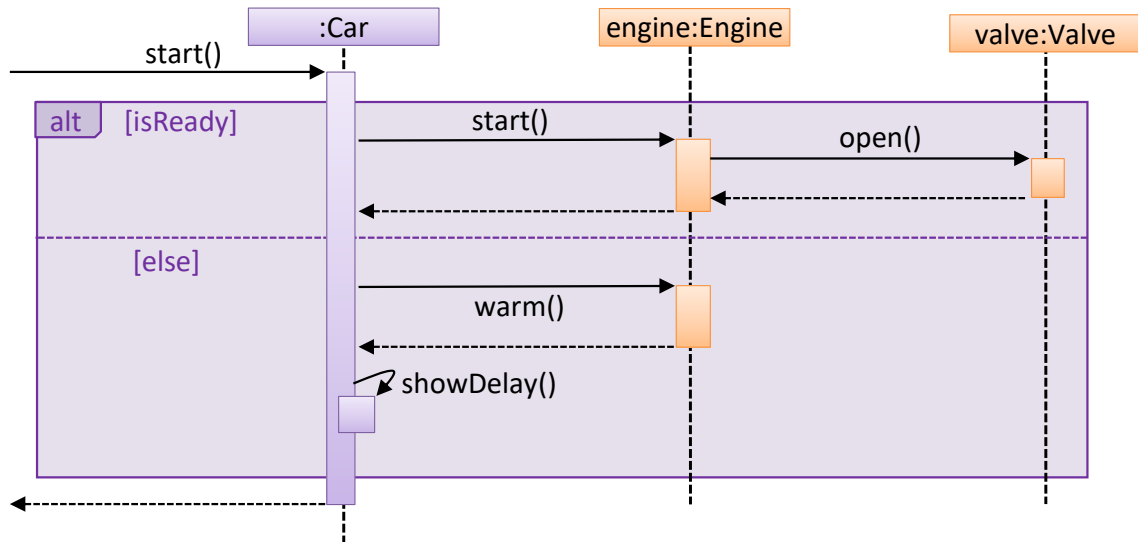
Q1.



Examiner notes:

- In questions like this one, usually the exam UML diagram expected is not specified; it is usually your job to pick the most suitable diagram type.
- Some information in the description may not be relevant to the diagram.
- The diagram above is an OODM. That is why methods and navigability are not shown.
- There may be multiple correct answers to a question like this one.

Q2.



Q3.

	Equivalence classes	Values to test
moduleCode	≤ 999	999
	1000...6999	1000, 6999
	≥ 7000	7000
Is instructor?	Yes	Yes
	No	No
Is logged in?	Yes	Yes
	No	No

Test cases:

	moduleCode	Is instructor?	Is logged in?	Expected
1	1000	Yes	Yes	Success
3	6999	Yes	Yes	Success
3	999	Yes	Yes	Exception
4	7000	Yes	Yes	Exception
5	Any value in 1000...6999	No	Yes	Exception
6	Any value in 1000...6999	Yes	No	Exception
7	A non-boundary value in 1000...6999	Yes	Yes	Success

Examiner notes:

- For questions like these you are expected to use equivalence classes, boundary values, and heuristics for combining multiple test inputs.

- As we have room for 7 test cases, we can add a test case to test a non-boundary valid value (see test case 7).

Q4.

- i. [line 2] Add student → Adds student (to follow the coding standard for method header comments)
- ii. [2] Give more accurate details of what the method does, for example, the fact that it creates a Student object.
- iii. [3] Add a blank line after the overview
- iv. [3] Give more details on what 'valid' means e.g. student cannot have been added to the module already
- v. [6] Give more details on what 'valid' means
- vi. [11] Adding a duplicate student could be a user error, which should be handled by an exception rather than an assertion.
- vii. [14] Log message can contain more details (e.g. student number).
- viii. [14] Rephrase to '*Attempting* to add student ...'
- ix. [14] Log level should be lower than WARN
- x. [16][19] Braces missing
- xi. [16] Validity checking can be extracted into separate methods to increase SLAP
- xii. [16] Can be more defensive: should check for numbers smaller than 1
- xiii. [19] Validity checking can be extracted into separate methods to increase SLAP
- xiv. [20] Supply a descriptive error message for the exception
- xv. [20] Inconsistent indentation
- xvi. [24] Variable named as a verb. newStudent is a better name.
- xvii. [22] Perhaps creating a Student object should not be the job of this method?
- xviii. [various places] More logging can be added