

A composite background image featuring a snowy mountain range, a city skyline, wind turbines, an offshore oil rig, and an airplane in the sky.

MODELING OBLIG 2017

Modeling a system for managing recruitment
of new employees

Please note that the oblig should be solved by each student **individually**. Please send your solution as an attachment by email to kst@sintef.no. The format of the solution should be **pdf**. The solution should be named with your name.

Since this has been misunderstood before: **Your name is not your ifi-username but your official name. A named solution is not a pdf file with your name in the file name.**

Drawing tool

- You may use the modeling/drawing tool of your preference. For example:
 - <https://www.eclipse.org/papyrus/> (powerful but involves a lot to install and use)
 - [https //www.draw.io](https://www.draw.io) app (light weight)
 - Visio supported by a UML stencil
- However, the diagrams are required to be syntactically correct

Recruitment-system

The company Bang! is planning a new recruitment system. They see the need for a dedicated tool but has not yet decided whether to buy it from a vendor or develop it themselves

As a first step towards a decision they have decided to make a model of the system and its intended use

This oblig will focus on some aspects of this modeling task

Exercise I

a) Make a class diagram. The class diagram should contain classes for at least

- Recruitment tool, HR-manager, Applicant, Department head (who is recruiting), Application (sent by an applicant to apply for a position), Interview, Interviewer

Relate the classes using associations and the UML operators for aggregation, composition, generalization, navigation etc.

Annotate the model with multiplicities

b) Argue the goodness of the resulting model

Exercise II

- a) Make a sequence diagram modeling an interview of an applicant describing only positive behaviour. The sequence diagram should at least contain lifelines of type Applicant, Department head, Interviewer and Recruitment tool
- b) What is the length of the shortest trace described by the diagram?
- c) What is the length of the longest trace described by the diagram?
- d) Specify one trace of the diagram in full detail - its length should be greater than 10
- e) Update the diagram with some negative behaviour

Exercise III

- Make a state machine reflecting the behaviour of the Recruitment tool as described by the sequence diagram from Exercise II
- Argue that the state machine is consistent with the sequence diagram (when restricted to the Recruitment tool)