AARHUS
UNIVERSITET
INGENIØRHØJSKOLEN

Mandatory design pattens assignment
I4SWD

1   Introduction
This document contains the requirements to the mandatory design patterns assignment in Software Design (I4SWD).
Approval of this assignment is a pre-requisite for the exam in I4SWD and the assignment is one of the exam subjects.

2   Description:
You shall choose and examine a software design pattern, which has *not* been covered by the course.
The purpose is for you to explain the design pattern, in a way which another software developer is able to understand and you shall use your knowledge about software design principles and other patterns to clearly analyze and describe the applicability of your chosen pattern as well as its relation to other patterns.

You shall:
1.   Create a group of 3-4 persons and enroll in a group on Blackboard.
2.   Choose a design pattern for the assignment.
3.   Write a **report**.
4.   **Exemplify the pattern** with 1 or more implementations in C#
5.   Make a **presentation video**.
6.   Make a **demonstration video**.
7.   Perform **peer-review** of the handins of two other groups.

3   Approval of the chosen pattern:
One of the teachers has to approve your choice of pattern, before you begin with the assignment.
To get approval, you shall write a short e-mail to the teacher (with CC to all group members).
The e-mail shall contain:

- Which Blackboard group have you chosen?
- Who are the members of the group? (name and auId)
- Which pattern have you chosen?
- A reference to the chosen pattern.

An example of such an e-mail could be: *"Group 7, consisting of Maverick (au000001), Goose (au001000) and Charlie (au100000) wish to examine Chain-Of-Responsibility, see this link: <link>"*.

You can find a positive and negative list of patterns on Blackboard.
Patterns can be added to the positive list, if you have good suggestions.
Patterns on the negative list are too small for the assignment and can't be chosen (except if you have really good arguments to why you want to choose the pattern).

The teacher will inform the group, when the pattern is approved. The teacher holds the right to dis-approve the choice if he finds that too many groups have chosen the same pattern.

4   Time schedule:
The time schedule for the assignment, hand-in and peer-review is available on the course Blackboard page.

5   Hand-in:

You must hand in five artefacts:

1. A **report**, where you:
    a. Describe the chosen pattern – purpose, type, structure, dynamics, consequenses, etc.
    b. And use relevant and correct UML diagrams, e.g. class diagrams and sequence diagrams for the description.
    c. Compare the chosen pattern with other, related patterns. The related patterns are allowed to be patterns covered in the course.
    d. Exemplify the pattern with 1 or more C# implementations.
    e. Concludes on the examination – when is the pattern useful and when is it not applicable?
2. A **presentation video**, where you:
    a. Present the chosen pattern, your examination, example and conclusion.
3. **Slides used in the presentation video.**
4. A **demonstration video**, where you:
    a. Demonstrate your C# implementation(s) of the pattern.
5. A **visual studio project**, with a functioning version of your C# implementation.

Formalities:

1. Both report and videos shall include the group number, names and auID of the group members.
2. The **report** shall be a PDF-file. The name shall be: E19-I4SWD-DesignPatternsAssignment-Group[*groupnumber*]-[*chosen-pattern*]-report.pdf
3. The **presentation video** shall be between 7 and 10 minutes. The size shall be less than 100MB. The name shall be: E19-I4SWD-DesignPatternsAssignment-Group[*groupnumber*]-[*chosen-pattern*]-presentation.[mkv|mp4]
4. The **presentation slides** shall be a PDF-file. The name shall be: E19-I4SWD-DesignPatternsAssignment-Group[*groupnumber*]-[*chosen-pattern*]-presentation.pdf
5. The **demonstration video** shall be between 2 and 5 minutes. The size shall be less than 50MB. The name shall be: E19-I4SWD-DesignPatternsAssignment-Group[*groupnumber*]-[*chosen-pattern*]-demonstration.[mkv|mp4]
6. The Visual studio project shall be zipped (**standard zip** not 7z/rar/tgz/..). The name shall be: E19-I4SWD-DesignPatternsAssignment-Group[*groupnumber*]-[*chosen-pattern*]-vs-project.zip
7. The **report, presentation video, demonstration video, presentation slides and visual studio project** shall be zipped in a single .zip file. The name shall be: E19-I4SWD-DesignPatternsAssignment-Group[*groupnumber*]-[*chosen-pattern*].zip

Note again, that your hand-in on Blackboard is a single .zip file, containing the five artefacts.

6   Peer review

You will individually give feedback to 2 groups. The list of groups will be on Blackboard.

Feedback is given in Google-forms, based on a rubric. Links will be on Blackboard.

Giving proper feedback is required in order to get approval for the assignment.

You shall **create an empty hand-in** in the peer-review assignment on Blackboard, when you have completed your review. This is to indicate, that the review is complete.

7   Grading:

The assignment is individually graded as APPROVED/NOT APPROVED. It is a requirement for the individual approval, that:

*   The teachers are able to see that the individual group members have participated in the assignment.
*   The individual feedback to the 2 peer review groups are of an adequate quality. The teachers will perform spot-checks to e.g. verify that it is correct, that the code example is working.

Both the hand-in and the peer-review has to be approved, in order to have the assignment approved.

And remember that approval of the assignment is a pre-requisite for attending the exam.