**Object-Oriented Analysis and Design with UML**

**Due: March 13, 7:00 pm**

**Mail To: ooad\_02@163.com**

**(Title & Attachment Name: project title + student No.+student name)**

**Part I: Project Proposal**

**Weight in course grade:** 10%

Decide on a project topic and write a project proposal of between 800 and 2000 words. Clearly and concisely indicate the following:

1. Proposed project title
2. Project description:
3. main goals (what’s the project about)
4. main functionality and characteristics
5. intended users and key usability goals (how users will benefit from your project)
6. notes on existing similar products: their utility and limitations and/or advantages and disadvantages
7. novelty of your solution and/or enhancements suggested
8. potential for further development
9. challenges that you think you may encounter during the project’s development
10. related technologies (platform, languages, libraries, tools, etc.)

**Part II: Requirements**

**Weight in course grade: 20**%

For Part II of the project you should provide a Software Requirements Specification

(SRS) document and related UML models. The SRS should include the following

sections and subsections:

**0 Table of contents**

1 **Introduction**: a general description of 400 to 800 words. You can reuse some text

from the Project Proposal but try as much as possible to refine and enhance it.

2 **Use case modeling**:

 Necessary use case diagrams: between 10 and (recommended) 20 use cases.

 Detailed use cases: concise text descriptions (two to four lines each) for all the

above use cases as well as detailed specification for at least 5 use cases.

 Necessary activity diagrams

3 **Glossary of terms** (at least 20 terms related to the problem’s domain).

**4 Supplementary specification**

5 **List of references**: domain-related book and 4 reference articles, with a brief

description (30 to 60 words each).

**Part III: Analysis Model**

**Weight in course grade: 35%**

For Part III of the project you should provide an analysis model together with a

primary design document with the following structure

**0 Table of contents**

1 **Introduction**: a general description of 400 to 800 words that briefly re-states the

goals of your project and gives a concise account of progress made since the

previous report (software requirements specification). Indicate changes in the

project, refinements, and current status.

2 **Architectural Analysis**: present the project in terms of high level architecture,

sub-systems and detail the architectural decisions taken until the current stage.

Given the diversity of projects, there is significant flexibility here. In any case,

you should include at least one system-level diagram, for example, the layered

architecture of the system. You should also provide textual descriptions for your

system-level diagram.

3 **Analysis mechanisms in your project**

4 **Analysis model:** Include the following diagrams organized with use case

realization where appropriate, or show why not appropriate:

i) Class diagram(s), with each class having responsibilities, and attributes in

most cases.

ii) Sequence diagram(s).

iii) Communication diagram(s) that models a different behaviour from that

captured in the sequence diagram.

5 **Annotated references:** describe how the project references (project domain book

and four reference articles) relate to your project. The description for the book

should be between 200 and 360 words, and for each article between 100 and 200

words.

**Part IV: Design Model**

**Weight in course grade: 35**%

For Part IV of the project you should provide a platform dependent detailed design

model and then complete your Software Architecture Document (SAD)

Deliverables of Part IV

0 **Introduction and Overview**: The introduction file should describe the UML

models and other artifacts created for your system analysis and design. The file

should concisely indicate changes and additions, if any, of your project’s

specification and design. The introduction file should also include the following

parts:

a. A two-page (maximum) discussion on the software lifecycle model

adopted to manage the process of software development.

b. A description of an architectural style, analysis or design pattern, or an

idiom, that you investigated during the research phase of your project.

**1 Updated use case model and analysis model**

2 **Design model**: Include the refined architecture and at least 5 examples of detailed

use case realizations.