Phase 2 – Requirements Analysis & Design

1. Summary – Phase 2:

Overall Aim: This phase serves to build upon the research and investigation achieved thus far, including the brainstorming process from Phase 1. The essential outcomes of this phase are organised in two main parts. In essence, the first part aims to formalise **"what"** the project will set out accomplish; while the second part of this phase will address the blueprint about **"how"** the intended system will be implemented.

Accordingly, you may organise the deliverables for this phase, in the following manner:

Part 1. Requirements/Features Analysis. Identify requirements, i.e. features of the project. Requirements analysis provides an important part of the software engineering process, and serves to formalise "**what** needs to be done … input for design; schedule or costing … but also an artifact for discussion…". Requirements are often expressed as **"features"**. Moreover, we may also consider "features" or a "set of features" as a means for satisfying an identified software requirement.

Thereby, upon carefully identifying the features, you are then required to present a set of **use-cases**. Use-cases serve to help convey to the stakeholders: Who is the application/service being developed for, and therefore also help justify the purpose for the identified features.

Use cases can be illustrated using notations such as *sequence diagrams*, *mock-ups,* or even *plain natural language*. For instance, a simple way to specify requirements is a list of features that will be offered, perhaps more conveniently organized by category.

(The following is an example of snippets from previous years…)

Create a new project

User	Teachers and students
Work flow	User clicks on the "Create Project" button, and then the system pops up a window for user to type in the project name User types in the project name, selects the type of project, and clicks on "OK", then the system will create a project according to what user has specified
Preconditions	User need to log into the system
Result	A new project with WSDL and BPEL files is created in the remote server

Create a new file

User	Teachers and students
Work flow	User clicks on the "Create File" button, and then the system pops up a window for user to type in the file name User types in the file name, selects the type of file, and clicks on "OK", then the system will create a file according to what user has specified
Preconditions	User need to log into the system and select a project
Result	A new file is created in the selected project in the remote server

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Remove a project

User	Teachers and students
Work flow	User selects a project and then clicks on the "Remove Project" button, the system pops up a window to make sure the remove User clicks on "Yes", then the system will remove the project the user selected
Preconditions	User need to log into the system and has at least one project
Result	The project in the remote server is removed

Etc…

Part 2. System Design. The second part of this phase will require you to design the main elements of the application, or service; this includes both back-end and/or front-end components. This part of the phase, thus serves to address **"how"** your project will be implemented. At the very least, each project should design and present an *entity-relationship (ER) model* of the database; and/or, an *UML object-model* of the intended classes and/or functions. As well as, a simple *system architectural diagram*, showing the main components and interactions.

2. Other General Guidelines:

- Please ensure to clarify and discuss assumptions you made.
- Be aware, that while in general requirements and design should be agreed upon and expected to be abided – you may nonetheless expect that in some cases requirements and design evolve and might be updated during the implementation phase. Likewise, it is thus important to heed great care during this phase, to establish a comfortable set of requirements and design elements, to ensure development begins on good foundations.
- You should aim that the number of pages should not exceed around 5 pages for this entire phase.

3. Marking Evaluation Metric:

PART	Excellent	Satisfactory	Poor
Part 1. ***(a) Requirements; Features Analysis.*** ***[30%]***	Delineates a set of appropriate features (i.e. requirements), that correctly reflects "what" the intended project will offer.	Set of features are described, but either not correctly expressed (e.g. describes "how" not "what"), and/or does not reflect the	Features are either incorrectly or not specified at all, and/or are not specific enough to reflect the intended scope of the project.

		intended scope of the project.	
(b) Use-Cases. ***[30%]***	Well-thought use-cases specified, showing evidence of insight into the potential of project. Correctly described using notations, such as: *sequence diagrams*, *mock-ups,* or *plain natural language.*	Use-cases are specified but are either incomplete; or not well-thought out, and lacking useful insight to the intended readers. Correct notations are used.	Use-cases are incorrectly specified, vague and/or missing important components. Does not show much evidence of insight into the project.
Part 2. ***System Design.*** ***[40%]***	Adequate system design provided, that reflects upon the requirements/features earlier specified. No gaps in system design. Shows evidence of foresight into "how" the system will be implemented. Uses appropriate diagrams, incl. ER and/or UML, as well as an illustration of the architecture.	System design provided but shows possible gaps. E.g. features and requirements that are described are not reflected in the system design.	Insufficient level of detail of the system design; does not reflect foresight as to how the intended system would be implement. And/or employs an incorrect or inadequate set of diagrams.

4. Submission & Deadline:

You are required to prepare a document for Phase 2 based on the above guidelines, and submit it to through the online course management system. The deadline for submission of Phase 2 is: **[Monday the 3rd of September 2018 @ 23:59:59]**. Please feel free to contact your mentors in order to discuss any further issues and/or details.