What we are looking for in your answers!

Please follow the BCPC rule in your answers:
“Be Clear, Precise and Concise!”

Q1: **Methodology Engineering:** Sum up your knowledge of “Software Development Methodologies” and solve the problem proposed (115 points)

(The aim of the proposed question is to develop a bespoke software development methodology which fulfills the requirements of the situation at hand and removes its problems.)

“Software Methodologies are Software too!” Regarding this point the general activities of development lifecycle such as analysis, design and implementation should be performed in order to develop the target method.

In the proposed problem, the following activity should be performed:

**S1: [Project Characterization]** Read the case study thoroughly for several times and characterize the situation described.

- Project Characterization aims at identifying the features of the specific situation of the project at hand. In the proposed case study two points help with identifying the features:

  1. The general features of the target environment which directly help with the identification of a set of features.

  2. The antipatterns exemplified which identify the problems existing in the target environment and complements set of features obtained in the previous steps.

**S2: [Identification of Methodology Requirements]** In this activity the following steps should be followed:

  1. Translate the project characteristic specified in the previous steps into a set of methodology requirements.
2. Add the requirements which should be satisfied in a typical software development methodology.

[You are familiar with some of the methodology requirements. The criteria introduced in lecture 1.]

S1 and S2 form the analysis phase of developing a software method.

S3: [Designing the target method] In this activity the following steps should be followed:

A: Choose an appropriate method development strategies from among the following approach:

1. Ad-hoc
2. Assembly-based
3. Paradigm-based
4. Extension-based
5. Hybrid

based on your current knowledge of the methodology engineering approaches and the variety software development methodologies with which you are familiar.

B: Use your overall knowledge of software development methods in order to design a method which satisfies the set of method requirements specified in the previous step.

S4: [Implementing the target method] In this activity the following steps should be performed:

1. Add details to the design method to the level which it is implementable in the situation of the case study.

2. [Use EPFC a CAME tool in the implementation step].

S5: [Validate and Verify the developed method] In this activity the
following steps should be performed:

1. Provide a discussion about how the developed methodology tackles the problems introduced in the case study and resolves them.

2. Does the developed methodology fulfill the requirement specified? (Is it valid)?

3. Is the developed method enactable in the situation of the case study (Is it verified [practical, practicable])?

S1-S5 forms the software method development lifecycle. You could choose a methodology to perform these steps. [A methodology for methodology development] (This deserves bonus.)