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### Question #1

Modelling is an important aspect/activity in everyday life. Explain how does it help to solve real life problems? Explain its importance in software engineering. Also explain what without modelling, what problems can be faced by a software developer during software development.

### Answer

Modelling is an important activity in everyday life because models are ways of expressing a design. Usually some sort of abstract language or pictures are used to express the design. Modelling can help us solve real life problems like weather. Regional weather models are used everyday to give you the weather forecast. Tsunami models predict landfall and severity of tidal waves. Computer algorithms are used in google searches. Computational chemistry is used to predict possible new drugs etc.

The importance of modelling in software engineering is that models are forms of description often adopted in software development. They are abstractions used to represent and communicate what it

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is important, devoid of unnecessary detail, and to help developers deal with the complexity of the problem being investigated or the solution being developed. Without a software model we cannot specify the structure or behaviour of a system. Difficulty in visualizing a system. No template that guides you in constructing a system. It will be difficult to understand complex system part by part. Difficulty in documentation.

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Question #2

Analysis model is composed of 3 individual models. Name and explain all three. Mention how each one of them is represented.

Answer

Analysis model is a technical representation of the system. It acts as a link between system description and design model. In analysis modelling, information, behaviour and functions of the system is defined and translated into the architecture, component and interface level design in the design modelling. The analysis model is composed of three individual models:

- The functional model, represented by use cases and scenarios.
- The analysis object model, represented by class and object diagrams.
- The dynamic model, represented by state machine and sequence diagram.

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