# MET CS473/673 Quiz 3

**Due 10/19/2015**

**Your name:**

1. **How might you use a model of a system that already exists? Explain why it is not always necessary for such a system model to be complete and correct. Would the same be true if you were developing a model of a new system?**

To understand and document the operation and architecture of the existing system, To decrease the cost and time when setting up the corresponding system model, To act as the focus of discussion about changes to that system, and To inform the implementation of the system after discussion of changes. Models of existing system are used during requirements engineering. This can help us know what system does and help us on discussing about strengths and weaknesses, this can lead to a new system requirement. If it’s complete and correct, then we cannot make requirements engineering for new system easily. If we are developing a model for a new system, then we need this model meet the requirements, so this model must be complete and correct.

1. **Develop a sequence diagram showing the interactions involved when a student registers for a course in a university. Courses may have limited enrolment, so the registration process must include checks that places are available. Assume that the student accesses an electronic course catalog to find out about available courses.**

Student

|-------------------------------------------------------------------------------------------------------------------🡪 Login

|-----🡪Lookup | |

|available🡨---- | |

| | |🡪Regatmp(UID) | |

| | | | |-----🡪Authorize | |

| | | | |Authorization<- | |

| | | | |-----------------------------------------------🡪Register |

Alt1 | | | | |RegisterOK🡨-------------------------------------------|

| | |Succed! 🡨----------| | |

Alt2 | | | | |NoOpenSeat 🡨----------------------------------------|

| | |Failed! 🡨------------| |

1. **You are a software engineering manager and your team proposes that model-driven engineering should be used to develop a new system. What factors should you take into account when deciding whether or not to introduce this new approach to software development?**

Factors: Are models rather than programs are the principal outputs of the development process?

Can programs that execute on a hardware/software platform be generated automatically from the models?

Whether we should have a significant effect on software engineering practice by using MDE?

Are models for abstraction right for implementation?

1. **Imagine a situation where 2 developers are simultaneously modifying 3 different software components. What difficulties might arise when they try to merge the changes that they have made?**

If these components have a relationship that one need to take use of another, then things will get worse if 2 developers modifying these components in the same time, which means these software components may fail after modified, because these modifications may break the relationships between software components, and it’s hard to be recognized. And also, 2 developer modifying the same component in the same time may lead to a conflict.

1. **(Only graduate students need answer this question) Look carefully at how messages and mailboxes are represented in the email system that you use. Model the object classes that might be used in the system implementation to represent a mailbox and an e-mail message.**

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| --- | --- |
| **messages** | **Mailboexes** |
| Sender  Date  Subject  Receivers  Messageinfo  Messagecontent  Attachments  flag | Contacter  readMessages  unreadMessages  flaggedMessages  DeletedMessages  Spam  Path |
| Read()  Replyto()  Forwardto()  Send()  Draft()  Print()  Delete()  Setflag() | DeleteMessages()  ReadMessages()  FlagMessages()  SaveMessages()  NewMessages()  NewContactors() |