**Debre Markos University**

**College of Technology**

**Department of Software Engineering**

**Requirements Engineering model exam**

Prepared by: Yayehudar Tamene

1. Requirements might describe:
2. A user level facility
3. A very general system property
4. A specific constraint on a system
5. A constraint on the development of the system
6. All

Answer: E

1. Which one of the following is not a step of requirement engineering?  
   a) elicitation  
   b) design  
   c) analysis  
   d) documentation

Answer: b  
Explanation: Requirement Elicitation, Requirement Analysis, Requirement Documentation and Requirement Review are the four crucial process steps of requirement engineering. Design is in itself a different phase of Software Engineering.

1. The best way to write requirements is:
2. Using natural language
3. Using system models
4. Using engineering terms
5. Using diagrams and tables
6. None

Answer E  
There is no best way to write requirements.

It depends on normal organizational practice and the notations which are used by writers and readers of the requirements.

1. Detailed requirements are:
2. The requirements of stakeholders
3. The requirements of users
4. System requirements
5. A and B

Answer: C

The abstract requirements are the requirements of the stakeholders of the system and the detailed requirements are a system specification.

1. One of the following doesn’t define Stakeholder requirements?
2. Sometimes called user requirements.
3. They are written from the point-of-view of system stakeholders.
4. These are more detailed specifications of requirements which may be expressed as an abstract model of the system.
5. None

Answer: C

Stakeholder requirements are not usually expressed in great detail.

System Requirements are more detailed specifications of requirements which may be expressed as an abstract model of the system.

1. Which of the following activities are categorized under requirements development process of requirements engineering?
2. Requesting changes to the baselined requirements
3. performing impact analysis for the requested changes
4. implementing the approved changes.
5. All of these mentioned above
6. None of the above

Answer: E

Software requirements engineering is made up of two major processes: **requirements development** and **requirements management.**

**Requirements development** encompasses all of the activities involved in eliciting, analyzing, specifying, and validating the requirements.

**Requirements management** encompasses the activities involved in requesting changes to the baselined requirements, performing impact analysis for the requested changes, approving or disapproving those changes, and implementing the approved changes.

1. Conflicting requirements are common in Requirement Engineering, with each client proposing his or her version is the right one.  
   a) True  
   b) False

Answer: a  
This situation is seen in every field of work as each professional has his/her way of looking onto things & would argue to get his/her point approved.

1. Which one of the following is a functional requirement ?  
   a) Maintainability  
   b) Portability  
   c) Robustness  
   d) None of the mentioned

Answer: d

All are non-functional requirements representing quality of the system. Functional requirements describe what the software has to do.

1. “Consider a system where, a heat sensor detects an intrusion and alerts the security company.” What kind of a requirement the system is providing ?  
   a) Functional  
   b) Non-Functional  
   c) Known Requirement  
   d) None of the mentioned

Answer: a  
 Functional requirements describe what the software has to do.

1. Which of the following statements explains portability in non-functional requirements?  
   a) It is a degree to which software running on one platform can easily be converted to run on another platform  
   b) It cannot be enhanced by using languages, OS’ and tools that are universally available and standardized  
   c) The ability of the system to behave consistently in a user-acceptable manner when operating within the environment for which the system was intended  
   d) None of the mentioned

Answer: a

Option c is termed as reliability and option e refers to efficiency.

1. Functional requirements capture the intended behavior of the system.  
   a) True  
   b) False

Answer: a  
The behavior of functional requirements may be expressed as services, tasks or functions the system is required to perform.

1. Does software wear & tear by decomposition ?  
   a) Yes  
   b) No

Answer: b  
Unlike hardware, software is reliable.

1. What is the first step of requirement elicitation ?  
   a) Identifying Stakeholder  
   b) Listing out Requirements  
   c) Requirements Gathering  
   d) All of the mentioned

Answer: a  
Stakeholders are the one who will invest in and use the product, so its essential to chalk out stakeholders first.

1. Starting from least to most important, choose the order of stakeholder.  
   i. Managers  
   ii. Entry level Personnel  
   iii. Users  
   iv. Middle level stakeholder  
   a) i, ii, iv, iii  
   b) i, ii, iii, iv  
   c) ii, iv, i, iii  
   d) All of the mentioned

Answer: c  
Users are your customers, they will be using your product, thus making them most important of all.

1. Arrange the tasks involved in requirements elicitation in an appropriate manner.  
   i. Consolidation  
   ii. Prioritization  
   iii. Requirements Gathering  
   iv. Evaluation  
   a) iii, i, ii, iv  
   b) iii, iv, ii, i  
   c) iii, ii, iv, i  
   d) ii, iii, iv, i

Answer: b  
Requirements gathering captures viewpoint from different users followed by evaluation of those viewpoints. Now comes the task of checking the relative importance of the requirements and finally to consolidate or bind together the information collected.

1. Why is Requirements Elicitation a difficult task?  
   a) Problem of scope  
   b) Problem of understanding  
   c) Problem of volatility  
   d) All of the mentioned

Answer: d  
Users specify unnecessary technical detail that may confuse, rather than clarify overall system objectives. Also, the customers/users are not completely sure of what is needed, have a poor understanding of the capabilities and limitations of their computing environment and they do not understand that the requirements change over time.

1. Requirements elicitation is a cyclic process  
   a) True  
   b) False

Answer: a  
Requirements traceability provides bi-directional traceability between various associated requirements.

1. Requirements Analysis is an Iterative Process.  
   a) True  
   b) False

Answer: a  
Requirements analysis is conducted iteratively with functional analysis to optimize performance requirements for identified functions, and to verify that synthesized solutions can satisfy customer requirements.

1. Requirements should specify ‘what’ but not ‘how’.  
   a) True  
   b) False

Answer: a  
‘What’ refers to a system’s purpose, while ‘How’ refers to a system’s structure and behavior.

1. Another name for requirements document is:
2. Functional Specification
3. Requirements Definition
4. Software Requirements Specification
5. All

Answer: D

1. Which of the following property does not correspond to a good Software Requirements Specification (SRS) ?  
   a) Verifiable  
   b) Ambiguous  
   c) Complete  
   d) Traceable

Answer: b  
The SRS should be unambiguous in nature which means each sentence in SRS should have a unique interpretation.

1. Which of the following property of SRS is depicted by the statement : “Conformity to a standard is maintained” ?  
   a) Correct  
   b) Complete  
   c) Consistent  
   d) Modifiable

Answer: b  
The SRS is complete full labeling and referencing of all figures, tables etc. and definition of all terms and units of measure is defined.

1. The SRS is said to be consistent if and only if  
   a) its structure and style are such that any changes to the requirements can be made easily while retaining the style and structure  
   b) every requirement stated therein is one that the software shall meet  
   c) every requirement stated therein is verifiable  
   d) no subset of individual requirements described in it conflict with each other

Answer: d  
Real world object may conflict with each other for example one requirement says that all lights should be red while the other states that all lights should green.

1. Which of the following statements about SRS is/are true ?  
   i. SRS is written by customer  
   ii. SRS is written by a developer  
   iii. SRS serves as a contract between customer and developer  
   a) Only i is true  
   b) Both ii and iii are true  
   c) All are true  
   d) None of the mentioned

Answer: c  
The SRS acts as a communication media between the Customer, Analyst, system developers, maintainers etc. Thus it is a contract between Purchaser and Supplier. It is essentially written by a developer on the basis of customer’ need but in some cases it may be written by a customer as well.

1. The SRS document is also known as \_\_\_\_\_\_\_\_\_\_\_\_\_ specification.  
   a) black-box  
   b) white-box  
   c) grey-box  
   d) none of the mentioned
2. Answer: a  
   The system is considered as a black box whose internal details are not known that is, only its visible external (input/output) behavior is documented.
3. Which of the following is included in SRS ?  
   a) Cost  
   b) Design Constraints  
   c) Staffing  
   d) Delivery Schedule

Answer: b  
Design constraints include standards to be incorporated in the software, implementation language, resource limits, operating environment etc.

1. Which of the following is not included in SRS ?  
   a) Performance  
   b) Functionality  
   c) Design solutions  
   d) External Interfaces

Answer: c  
The SRS document concentrates on:”what needs to be done” and carefully avoids the solution (“how to do”) aspects.

1. Arrange the given sequence to form a SRS Prototype outline as per IEEE SRS Standard.  
   i. General description  
   ii. Introduction  
   iii. Index  
   iv. Appendices  
   v. Specific Requirements  
   a) iii, i, ii,v, iv  
   b) iii, ii, i, v, iv  
   c) ii, i, v, iv, iii  
   d) iii, i, ii

Answer: c  
The given sequence correctly resemble a standard SRS prototype as per IEEE.

1. Consider the following Statement: “The output of a program shall be given within 10 secs of event X 10% of the time.” What characteristic of SRS is being depicted here ?  
   a) Consistent  
   b) Verifiable  
   c) Non-verifiable  
   d) Correct

Answer: b  
An SRS is verifiable, if and only if, every requirement stated therein is verifiable. Here the given condition can be verified during testing phase.

1. Consider the following Statement: “The data set will contain an end of file character.” What characteristic of SRS is being depicted here ?  
   a) Consistent  
   b) Non-verifiable  
   c) Correct  
   d) Ambiguous

Answer: b  
An SRS is unambiguous if and only if, every requirement stated therein has only one unique interpretation. The given statement does not answer the question: “which data set will have an end of file character ?”.

1. Consider the following Statement: “The product should have a good human interface.”What characteristic of SRS is being depicted here ?  
   a) Consistent  
   b) Non-Verifiable  
   c) Correct  
   d) Ambiguous

Answer: b  
An SRS is verifiable, if and only if, every requirement stated therein is verifiable. The statement can only be answered on completion of the software and customer evaluation but still human interface will vary from person to person.

1. Narrative essay is one of the best types of specification document ?  
   a) True  
   b) False

Answer:b  
Narrative essay is one of the worst types of specification document as it is difficult to change, difficult to be precise, has scope for contradictions, etc.

1. Which two requirements are given priority during Requirement Management of a product ?  
   a) User and Developer  
   b) Functional and Non-functional  
   c) Enduring and Volatile  
   d) All of the mentioned

Answer: c  
Enduring requirements are core requirements & are related to main activity of the organization while volatile requirements are likely to change during software development life cycle or after delivery of the product.

1. Considering the example of issue/return of a book, cataloging etc. in a library management. What type of management requirement is being depicted here?  
   a) Enduring  
   b) Volatile  
   c) Both Enduring & Volatile  
   d) All of the mentioned

Answer: a  
For library management system issue/return of a book, cataloging etc. are core activities and are stable for any system.

1. Why is Requirements Management Important ? It is due to the changes  
   a) to the environment  
   b) in technology  
   c) in customer’s expectations  
   d) in all of the mentioned.

Answer: d  
Systems continue to be built as the advancement of new products being launched in the market and so does the market changes, the technology and in turn customer’s expectation.

1. Requirements Management is a prerequisite for Quality-Oriented Development.  
   a) True  
   b) False

Answer: a  
Quality makes no sense without reference to requirements, which means quality-oriented development is requirements-driven development, thus requirements management is a prerequisite for quality-oriented development.

1. Requirements traceability is one of the most important part requirement management. It may also be referred to as the heart of requirement management.  
   a) True  
   b) False

Answer: a  
Requirements traceability refers to the ability to describe and follow the life of a requirement in both forwards and backwards direction. Requirements can be traced from its origins, through its development and specification, to its subsequent deployment and use, and through periods of ongoing refinement and iteration in any of these phases.

1. Requirements Management has a high initial start-up cost but does not need ongoing funding throughout a project.  
   a) True  
   b) False

Answer: b  
Requirements Management needs continued funding throughout a project. Project funding is often limited at the onset of a project, restricted to those aspects of the project which are tangible and visible, and subsequently allocated in a phase-by-phase manner.

1. According to a statistical report: “over 30% of all software projects are cancelled before completion and over 70% of the remainder fail to deliver expected features”. What must be the reason for such a situation ?  
   a) Poor change management  
   b) Poor requirements management  
   c) Poor quality control  
   d) All of the mentioned

Answer: b  
Fundamental to the problem mentioned in the statistical report is poor requirements management. Option a and c are its sub parts.

1. What does the study of an existing system refer to?
2. Details of DFD
3. Feasibility Study
4. System Analysis
5. System Planning

**Answer:** c) System Analysis

The study of an existing system refers to system analysis.

1. Select the developer-specific requirement?
2. Portability
3. Maintainability
4. Availability
5. Both Portability and Maintainability

Answer: D

1. Which one of the following is a requirement that fits in developer’s module?
2. Availability
3. Testability
4. Usability
5. Flexibility

Answer: B

1. How many classification schemes have been developed for NFRs?
2. Two
3. Three
4. Four
5. Five

Answer: D

1. The system specification describes the
2. Function, performance and constraints of a computer-based system
3. Implementation of each allocated system
4. Element software architecture
5. Time required for system simulation

Answer : A

1. The best way to conduct a requirements validation review is to
2. Examine the system model for errors
3. Have the customer look over the requirements
4. Send them to the design team and see if they have any concerns
5. Use a checklist of questions to examine each requirement

Answer : D

1. Who writes the Software Requirements Specification Document (SRS)
2. System Developer
3. System Tester
4. System Analyst
5. None of these above

Answer : C

1. What is the goal of the requirements analysis and specification phase of the software development life cycle?
2. Understanding the customer requirements and organize them in an informal document
3. Analyzing the cost of development
4. Determining scope of the software
5. None of these above

Answer : A

1. Which one of the following is not an input to the requirements engineering process?
2. Domain knowledge
3. Existing system information
4. System models
5. Organizational standards

Answer: C- system models

1. There is no ideal requirements engineering process. This is because of all **Except**:
2. The technologies and methods used for requirements engineering vary from one organization to another.
3. The types of engineering and managerial disciplines involved in requirements engineering vary from one organization to another.
4. Different types of application system need different types of requirements engineering process.
5. As different organizations have the same culture, so too does the requirements engineering process.

Answer: D-

1. Which of the following process models shows the major activities involved in a particular process and their approximate sequencing?
2. Role action models
3. Coarse grain activity models
4. Fine grain activity models
5. Entity relationship models

Answer: B.

1. Which of the following is intended to detect problems in the requirements document before it is used as a basis for the system development?
2. Requirements elicitation
3. Requirements Specification
4. Requirements negotiation
5. Requirements validation.

Answer: D- requirements validation

1. Which one of the following is not a maturity level according to Capability Maturity Model?
2. Repeatable
3. Measured
4. Optimizing
5. Initial

Answer: B- measured.

1. CMM level 5 affirms that the Software Developing Company is at the stage of\_\_\_.
2. Having several well defined and documented standard processes
3. Having adhoc uncontrolled processes
4. Continuous process improvement
5. Using statistical tools in the management of processes and projects

Answer: C- Continuous process improvement

1. CMM stands for  
   A. Capability Management Module
2. Conservative Maturity Model
3. Capability Maturity Module
4. Capability Maturity Model

Answer: D- CMM stand for Capability Maturity Model

1. One of the following is **wrong** about analysis checklists.
2. The questions should be general.
3. Checklists should not include more than ten items.
4. They provide a reminder of what to look for and reduce the chances that you will forget some requirements checks.
5. None

Answer: D- none

1. Which of the following differentiates requirements validation from requirements analysis?
2. It is concerned with checking a final draft of a requirements document.
3. The validation process should be more concerned with the way in which the requirements are described.
4. It should mostly be concerned with answering the question 'have we got the requirements right?'
5. All

Answer: D

1. Which of the following is **not** correct about a document-based approachto developing and managing requirements?
2. It’s difficult to keep the documents current and synchronized.
3. It’s not easy to store supplementary information attributes about each requirement.
4. It’s easy to define links between requirements and other system elements.
5. Tracking the status of both individual requirements and the entire set of requirements is cumbersome.

Answer: C

1. Risk management is one of the most important jobs for a  
   a) Client  
   b) Investor  
   c) Production team  
   d) Project manager

Answer: D

1. Which of the following term is best defined by the statement: “The underlying technology on which the system is built is superseded by new technology.”?  
   a) Technology change  
   b) Product competition  
   c) Requirements change  
   d) None of the mentioned

Answer: A

1. Risk management is now recognized as one of the most important project management tasks.  
   a) True  
   b) False

Answer: A

1. Which of the following strategies means that the impact of the risk will be reduced?  
   a) Avoidance strategies  
   b) Minimization strategies  
   c) Contingency plans  
   d) All

Answer: B

1. Which of the following issues are addressed by an effective risk management plan?
2. Risk monitoring
3. Risk avoidance
4. Contingency planning
5. All

Answer: D all

1. Typical requirements risk includes
2. misunderstanding the requirements
3. inadequate user involvement
4. uncertain or changing project scope and objectives
5. continually changing requirements
6. all

Answer: E all

1. which risk management activity examines the potential consequences of specific risks to your project.
2. Risk identification
3. Risk analysis
4. Risk prioritization
5. Risk monitoring

Answer: B-risk analysis.