Midterm Exam Review

Exam Date: Wednesday, October 17, 2018

The midterm exam will occur in class during the normal time. You may bring a single sheet of notes, written or typed on Letter paper ($8\frac{1}{2}'' \times 11''$) or smaller. No other resources will be allowed during the exam.

There are six main areas. They will not be equally weighted.

1. Introduction
2. Process Models
3. Quality Assurance
4. Risk Management
5. Use Case Modeling
6. Requirements Engineering Process

For each of these areas you may be asked to do any of the following:

- Define terminology
- Compare and contrast related ideas
- Draw diagrams
- Describe a model
- Identify problems with a system and how to fix them

There will not be True/False or multiple choice questions.
Sample Problems

Risk Management

For the driving game that you are working on, you have contracted Widgets Inc. to build a module representing the vehicles in the game.

1. What is risk?
2. What are three specific risks in this situation?
3. For each of the above risks, describe a way to reduce it.

Requirements Engineering Process

The following is a (bad) description of a program to implement the autokey cipher. The example encoding is not part of the description; it is for your understanding of the problem.

For each letter in a stream, convert it into a new letter by matching it with the first letter in a keyword and shifting it by the index of the key. Each letter in the keyword is used once this way. Once the keyword has been used up, subsequent letters are matched to the first unused letter of the input stream.

Example encoding “attackatdawn” with “queenly”:

| Plaintext: | attackatdawn |
| Key: | queenlyattackatdawn |
| Ciphertext: | qnxepvytwtwp |

1. Identify three problems with the above description.
2. Write a better description for the autokey cipher.