

Sample Solutions

Question 1

The Unified Process has two dimensions:

The vertical process that are more technical oriented

(Requirement, Analysis, Design, Implementation, Testing,

The horizontal processes that are more business oriented

(Inception, Elaboration, Construction and Transition).

The vertical process is similar to the company's description of the "Unified process" (incrementation)

The company does not focus on horizontal process at all (Iterations among workflows) which are more business oriented. The main thing that makes unified process is the combination of these two dimensions- iteration and incrementation.

From the CTO description, the company process is therefore too similar to traditional waterfall model – step by step – one workflow after another is like one phase after another.

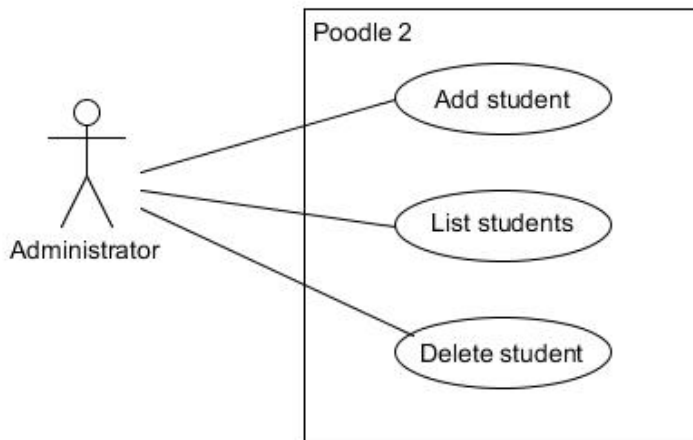
From the description, the company focuses on testing at the end of the process. Testing should not just be done at the end for the Unified Process! Testing should also be done in every workflow – the entire process!

Test Workflow should cover testings during every workflow

- inspection, human reviews and checking for traceability of artefacts

There should also be more testing of program at the end like integration testing, system testing and acceptance testing in the final testing.

Question 2 (a)



Question 2 (b)

Solutions (reasonable exceptions include (but not limited to):

- 2.1 If the administrator enters the wrong id, then System displays message to try again
- 2.1 If the administrator enters the wrong password, then System displays message to try again.
- 3.1 If the student is not found, go back to the main page.
- 3.1 If the id entered is not a student, go back to the main page.
- 4.1 If the unit is not found, go back to the main page.
- 5.1 If the student cannot be added because he is already enrolled in the unit, go back to the main page.
- 6.1 Administrator hits cancel, go back to the main page.

Question 3(a)

MAKE SURE ALL THE NOUNS ARE BEING ADDRESSED AND CLASSIFIED!!

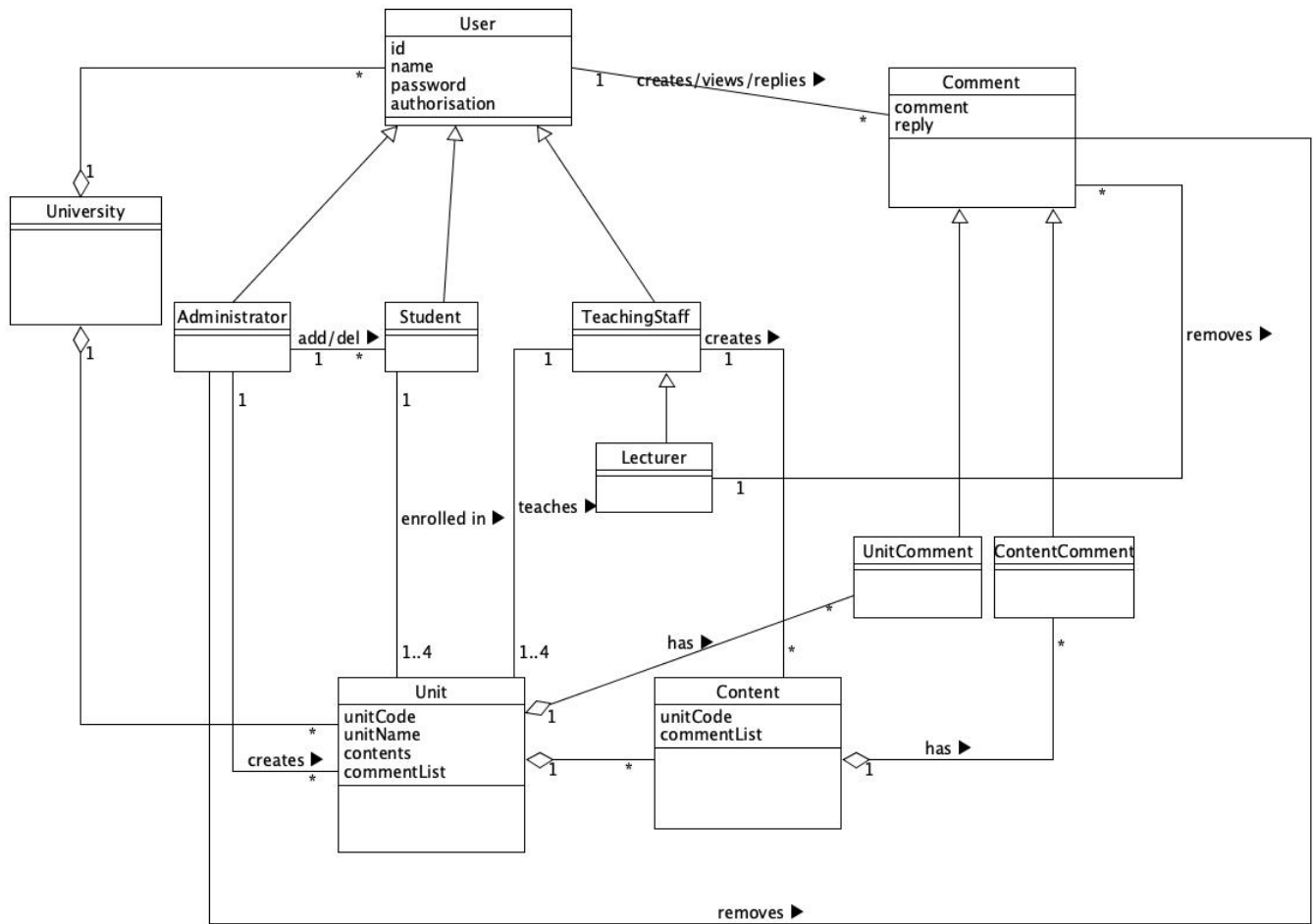
Outside the problem boundary and may therefore be ignored: platform, experience, Poodle 2 (okay to make this an entity class), project, system, Poodle, Improvement

Candidate entity classes: University, Unit, Administrator, User, Teaching Staff, Student, Comment, Lecturer, Content

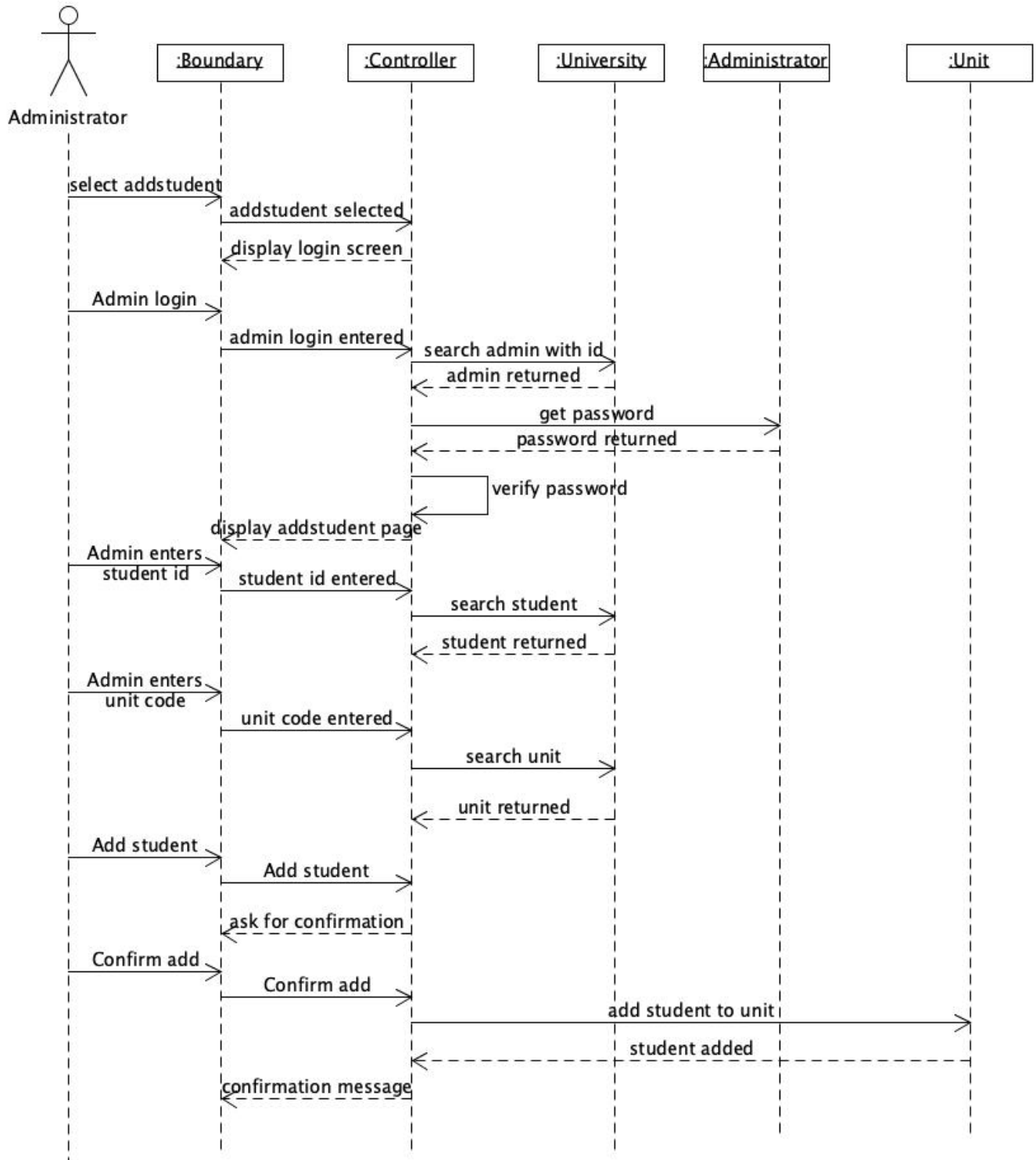
Attributes: id, name, password, unit code, unit name, replies (reply), authorisation.

Question 3(b)

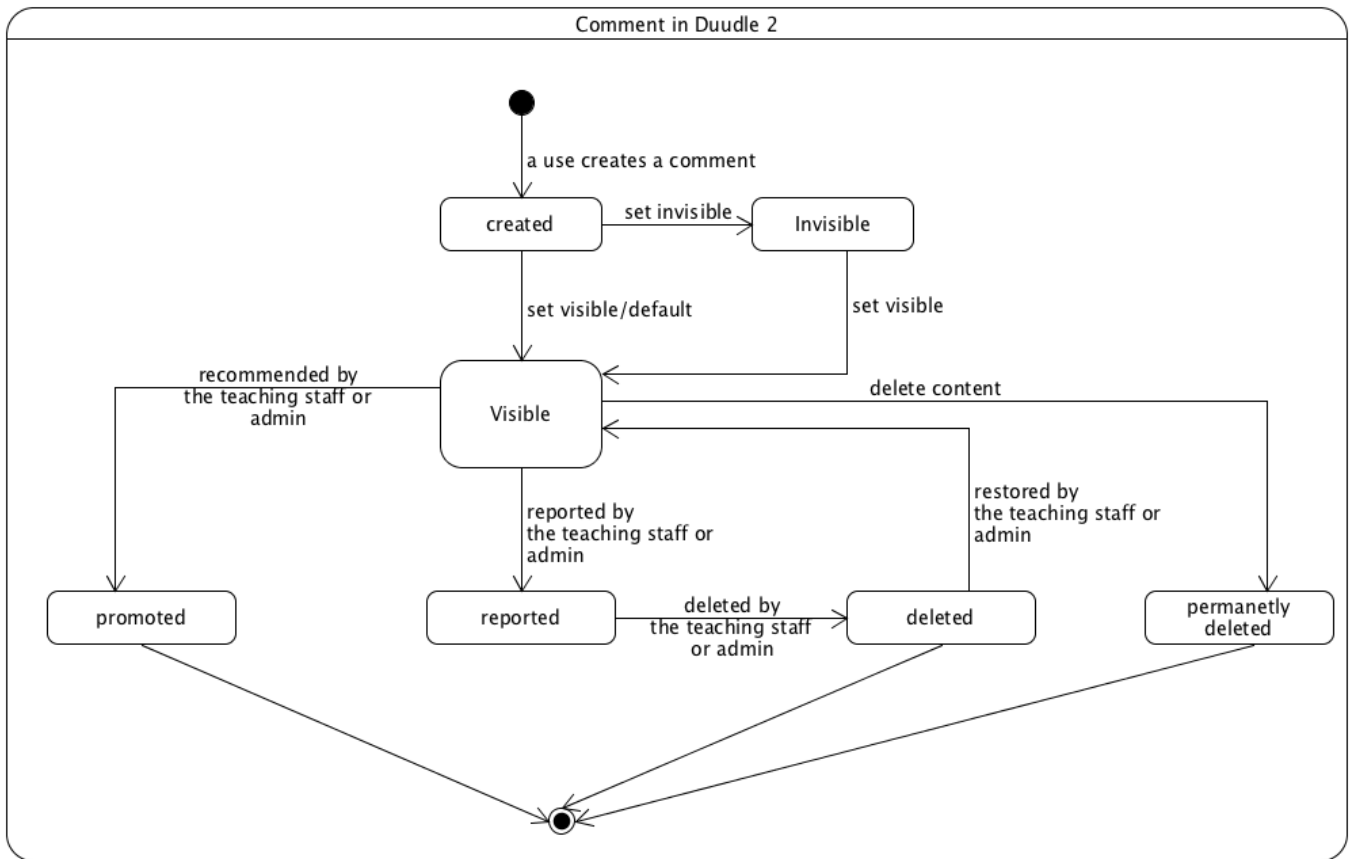
Solution based on nouns extracted in 3(a).



Question 4



Question 5



Question 6:

Team leader (and I) did the right thing initially because we try to raise the initial concerns with the CTO. We tried to adhere to the following clauses:

2.06 Identify, document, collect evidence and report to the employer promptly if, in their opinion, a project is likely to be problematic.

3.10 Ensure adequate testing, debugging and review of software and related documents on which they work

However, after the initial meeting CTO as well as the team leader did not take care of the issue with free and open source software:

- “Open Source” doesn’t necessarily mean you can reuse portions of the code for your work.
- They need to find out what OS (Open Source) license the author has before they can reuse and copy.

They are therefore in breach of the following clauses:

2.02 Not knowingly use software that is obtained or retained either illegally or unethically.

3.03 Identify, define and address ethical, economic, cultural, legal and environmental issues related to work projects.

3.05 Ensure an appropriate method is used for any project on which they work or propose to work

3.13 Be careful to use only accurate data derived by ethical and lawful means, and use it only in ways properly authorised.

By telling the team leader to go ahead and copy, CTO has also breached the following management clauses:

5.01 Ensure good management for any project on which they work, including effective procedures for promotion of quality and reduction of risk (This risk is breaking IP law!)

5.11 Not ask a software engineer to do anything inconsistent with this Code

8.08 Not influenced others to undertake any action that involves a breach of the Code

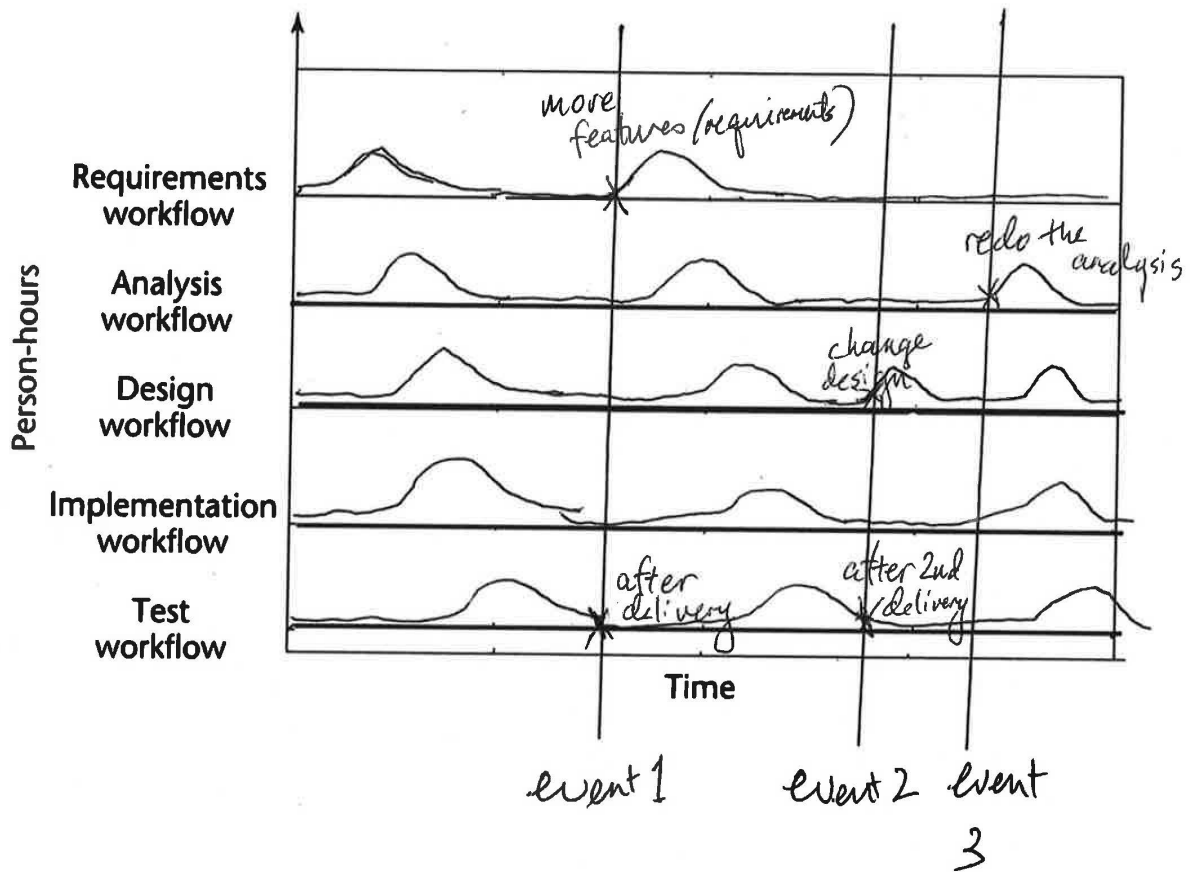
By right, the team leader should:

6.12 Express concerns to the people involved when significant violations of this Code are detected

Therefore, they both should go find out about the legality issues with Open Source, because they should:

8.05 Improve their knowledge of relevant standards and the law governing the software and related documents on which they work,

Question 7



Question 8

Test No and brief description	instructions	Car status	Car speed	Expected output/behaviour
1. Try to start car when stopped	s	stopped	0	"Brmmm! Car started" or "The car won't start"
2. Try to stop car when already stopped	x	stopped	0	"Car is already stopped"
3. Try to stop car while driving	x	Not stopped	60	"Don't turn off the engine while driving"
4. Brake while going at normal speed	b	Not stopped	60	"You are now moving at 60" OR "Couldn't brake! Is something wrong?"
5. Start car when car is broken. Velocity over crash threshold (boundary test)	s	broken	151	"Car is already started" AND "Driving too fast when car broke down. You died."
6.				
7.				
8.				
9.				
10.				

Question 9

“When customers register they have to provide a password, which must be a ‘strong’ one.”

(Note: what is meant by strong password?)

Functional or non-functional requirement? Functional

When users register they must provide a password, which should be comprised of at least 8 characters, at least one of which numeric or taken from the following set: '-', ' ', '.', '\$', '#'

“The shopping website has to work on all the main web browsers.”

(Note: “work”? which browsers?)

Functional or non-functional requirement? Non-Functional

The shopping website must display and react to user input in the same manner on the following browsers: IE7+, Firefox 3.x+, Safari 4.x.

“Customers will be able to search for items”

(Note: simple or more complex search?)

Functional or non-functional requirement? Functional

Customers will be able to search for items in the database by entering a query either including the name or the brand of the product. The system will display all results in a list.