

2013

MID-TRIMESTER TEST

SWEN 102
Introduction to Software
Modelling**Time Allowed:** 50 Minutes

Instructions: There are 50 possible marks on the test.
Answer all questions in the boxes provided.
Every box requires an answer.
Non-electronic foreign language dictionaries are allowed.
Calculators ARE NOT ALLOWED.
No other reference material is allowed.

Question	Topic	Marks
1.	Use Cases	25
2.	Object and Class Diagrams	25
Total		180

Student ID:

Question 1. Use Cases

[25 marks]

(a) [3 marks] Perform a *textual analysis* on the following description, to find candidate use cases.

You should carefully and neatly underline key verb phrases in the text in the box.

SourceForge is a website used for software development. Software developers develop programs and upload new versions. Users search the website looking for programs to download and use.

To upload a new version of a program, the developer provides a log message, and version number. The log message details what changes were made. Version numbers must always increase when new versions are uploaded.

The creator of a project can edit the information shown about their projects. This includes the title, a short description and which programming languages are used. They can also set permissions allowing other users to upload new versions to the project.

Users search the website for software based on keywords they supply. Users can search the website without needing to create an account on SourceForge. Developers must create an account before they can create or work on a project. They must log in whenever they want to work on a project.

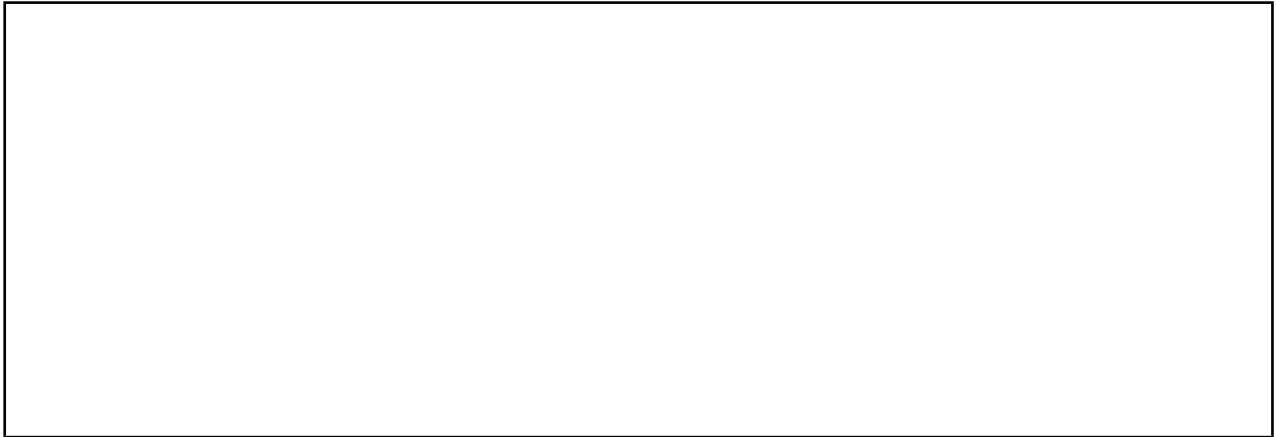
(Question 1 continued on next page)

Student ID:

(Question 1 continued)

(b) [9 marks] Draw **use case descriptions** for the following **three** use cases in this system.

Find project by searching



Upload new version of program



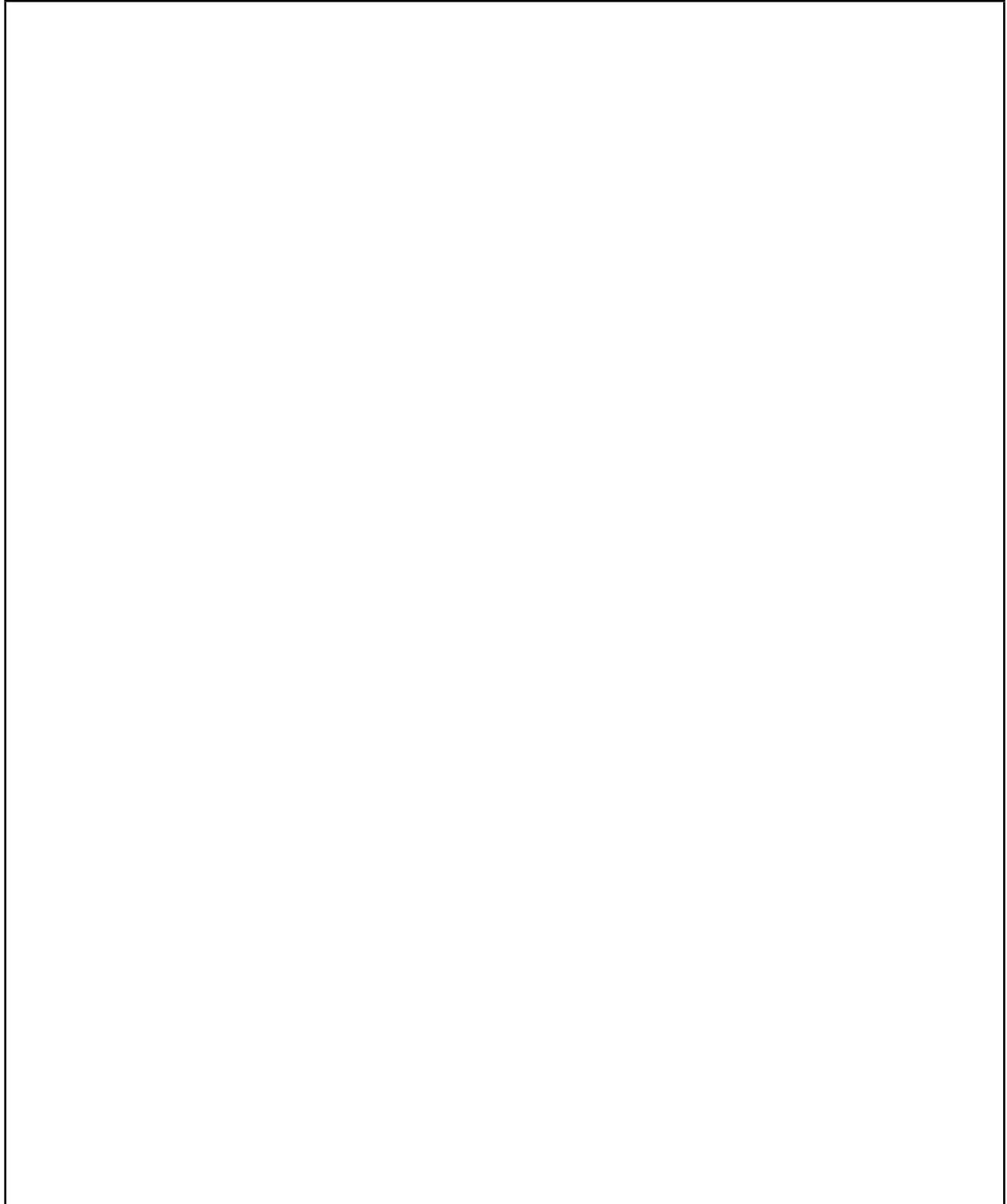
Change project information



Student ID:

(Question 1 continued)

(c) [9 marks] Draw a **use case diagram** showing at least 3 actors and at least 6 use cases that you would produce in a model of this system.



Student ID:

(Question 1 continued)

(d) [4 marks] Give characteristics for one actors in the system.

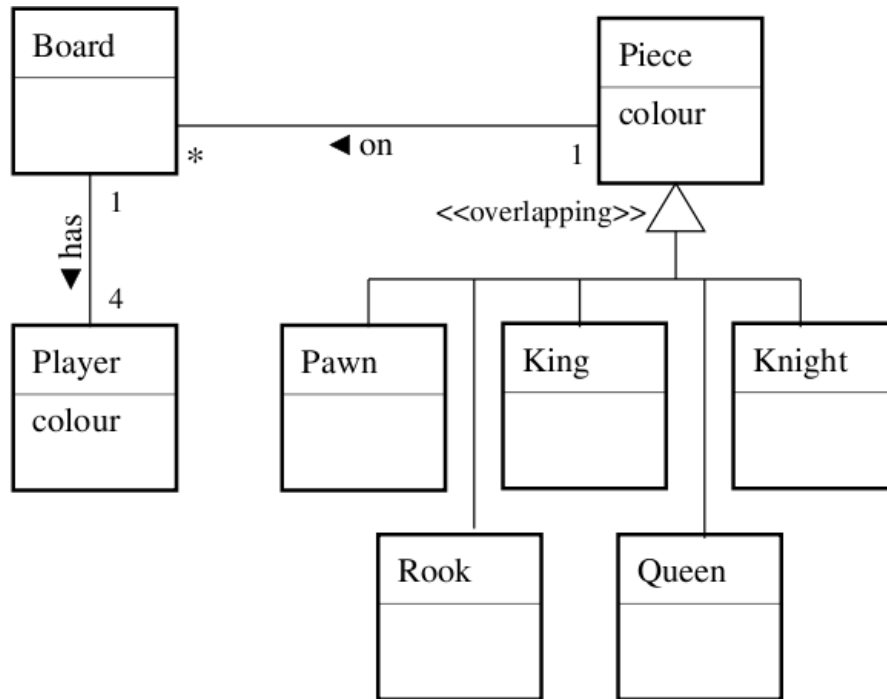
1. **Actor Name**
2. Domain Knowledge
3. System Knowledge
4. Frequency of Interaction

Student ID:

Question 2. Object and Class Diagrams

[25 marks]

Consider the following (incomplete) class diagram which models the game of chess, and answer the following questions.



(a) [12 marks] For each question, state whether or not it is correct with respect to the above diagram. If it is not correct, briefly state why.

1. Each board may have one or more pieces on it

2. Every board has two players

(Question 2 continued on next page)

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(Question 2 continued)

3 Pawns and Kings are pieces

4 A piece cannot be both a Pawn and a King

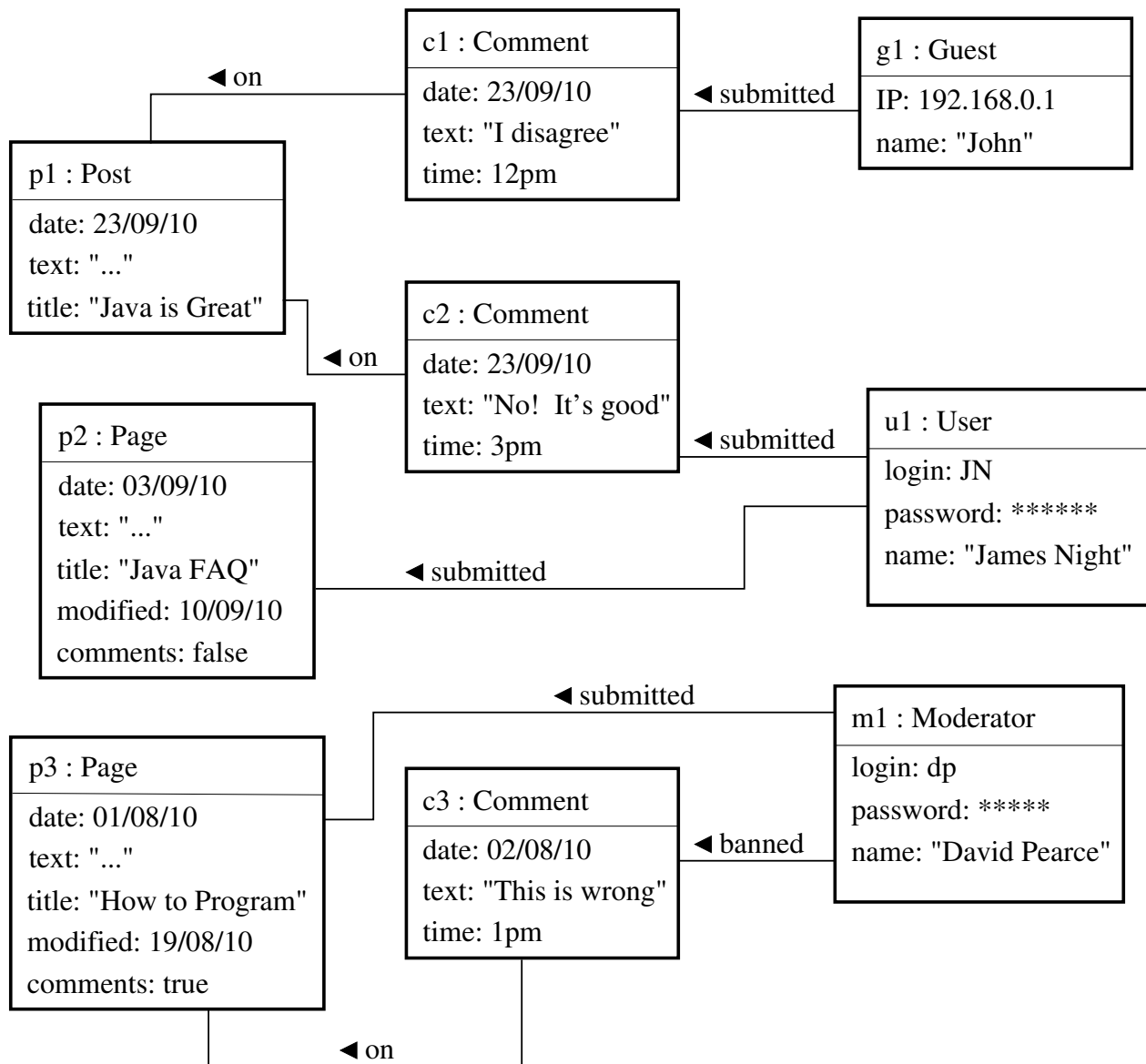
5 Every piece is on a board

6 Every piece is either a Pawn, King, Knight, Rook or Queen (or a combination of them)

Student ID:

(Question 2 continued)

(b) [13 marks] Consider the object diagram below and draw a corresponding class diagram on the facing page.



(Question 2 continued on next page)

Student ID:

(Question 2 continued)

Student ID:

SPARE PAGE FOR EXTRA ANSWERS

Cross out rough working that you do not want marked.
Specify the question number for work that you do want marked.

Student ID:

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Specify the question number for work that you do want marked.

Student ID:
