

Object Oriented Conceptual Modelling

Team Actimel

Go team Actimel.

Department of Engineering

School of Informatics & Engineering

Institute of Technology, Blanchardstown

Dublin 15.

Software Design and Quality

Submission Date

# Table of Contents

[Table of Contents i](#_Toc468880978)

[Table of Figures i](#_Toc468880979)

[Introduction 1](#_Toc468880980)

[Problem Statement 1](#_Toc468880981)

[Use Case Analysis 2](#_Toc468880982)

[Use Case Model 1 2](#_Toc468880983)

[Description 2](#_Toc468880984)

[Conceptual Model 2](#_Toc468880985)

[UML Class Conceptual Model 2](#_Toc468880986)

[Modelling Assumptions 2](#_Toc468880987)

[System Design Observations and Recommendations 2](#_Toc468880988)

# Table of Figures

[Figure 1 1](#_Toc463988282)

[Figure 2 2](#_Toc463988283)

[Figure 3 2](#_Toc463988284)

[Figure 4 3](#_Toc463988285)

[Figure 5 4](#_Toc463988286)

[Figure 6 5](#_Toc463988287)

[Figure 7 6](#_Toc463988288)

[Figure 8 6](#_Toc463988289)

[Figure 9 7](#_Toc463988290)

# Introduction

In this assignment, you are required to form a team of 3 as a software development team (with discussion from your lab lecturer groups of 2 or 4 may be allowed in certain circumstances). Your team has been tasked with solving a software problem which is defined in the problem statement section below. The assignment has been designed to ensure full coverage of all content delivered within the module as such to be successful you will need to be familiar with all lecture and lab material delivered to-date. This assignment is worth 12% of your overall grade. Keep in mind that successful completion of this assignment will mean you are very well prepared for your exam paper in January. Please familiarise yourself with the marking scheme at the end of this document to understand what is required as assignment deliverables. Be sure to delegate tasks to team member. Clever allocation of tasks versus team resources will significantly lessen the work load on each person. Also, you are required to use GIT to manage your project between the team members. All projects should be hosted on GitHub. Once you have completed Lab 5, you and your team may use all lab time for the remainder of the semester to completing this work.

# Problem Statement

You are required to develop a C++ Multiple Choice Quiz application to aid students taking the module “Software Design & Quality” understand agile software development methodologies (specifically Kanban & SCRUM) and hence study for their January exams. Users will be presented with a randomly chosen set of 10 questions from a question bank and be presented with a choice of solutions. The user must then choose a correct answer and move to the next question. The application will generate a report of how well the student did after the quiz has completed. The student’s result is saved to their profile. The application can manage many student profiles and can generate an overall class report. The quiz may be administrated by an admin user. An admin user has full access to all student’s attempts, but a student user can only see their own attempts as such Student’s must login to their profile before starting the quiz. Students are allowed have multiple attempts which are all persistently saved against their individual profile. Questions and solutions are saved in an XML file which is read by the quiz application. You will need to research Agile developmental lifecycles to define your questions and you will need to investigate how to parse XML using C++.

# Use Case Analysis

## Use Case Model 1

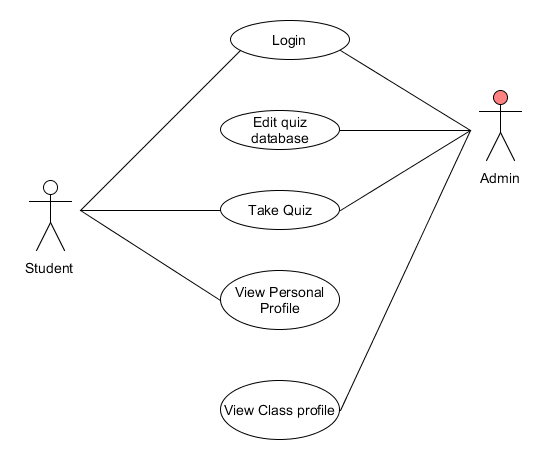


Figure 1

### Description

There are 2 actors, student and admin. Both are able to login in and take the quiz. Student can also view their personal profile meanwhile the admin can view the class profile and edit the quiz database.

# Conceptual Model

## UML Class Conceptual Model

Figure 2

## Modelling Assumptions

# System Design Observations and Recommendations