

TEAM 12

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Coursework Submission Cover Sheet

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Student Number 1883100

Module Code CM1202

Submission Date 2/05/2019

Hours spent on this exercise 10

Special Provision

(Please place an x in the box above if you have provided appropriate evidence of need to the Disability & Dyslexia Service and have requested this adjustment).

Group Submission

For group submissions, *each member of the group must submit a copy of the coversheet*. Please include the student number of the group member tasked with submitting the assignment.

Student number of submitting group member 1841485

By submitting this cover sheet you are confirming that the submission has been checked, and that the submitted files are final and complete.

Declaration

By submitting this cover sheet you are accepting the terms of the following declaration.

I hereby declare that the attached submission (or my contribution to it in the case of group submissions) is all my own work, that it has not previously been submitted for assessment and that I have not knowingly allowed it to be copied by another student. I understand that deceiving or attempting to deceive examiners by passing off the work of another writer, as one's own is plagiarism. I also understand that plagiarising another's work or knowingly allowing another student to plagiarise from my work is against the University regulations and that doing so will result in loss of marks and possible disciplinary proceedings.

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Please use Adobe Reader to complete this form. Other applications may cause incompatibility issues.

Student Number	<input type="text" value="1841485"/>
Module Code	<input type="text" value="CM1202"/>
Submission Date	<input type="text" value="05/02/2019"/>
Hours spent on this exercise	<input type="text" value="13"/>
Special Provision	<input type="checkbox"/>

(Please place an x in the box above if you have provided appropriate evidence of need to the Disability & Dyslexia Service and have requested this adjustment).

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Student number of submitting group member	<input type="text" value="1841485"/>
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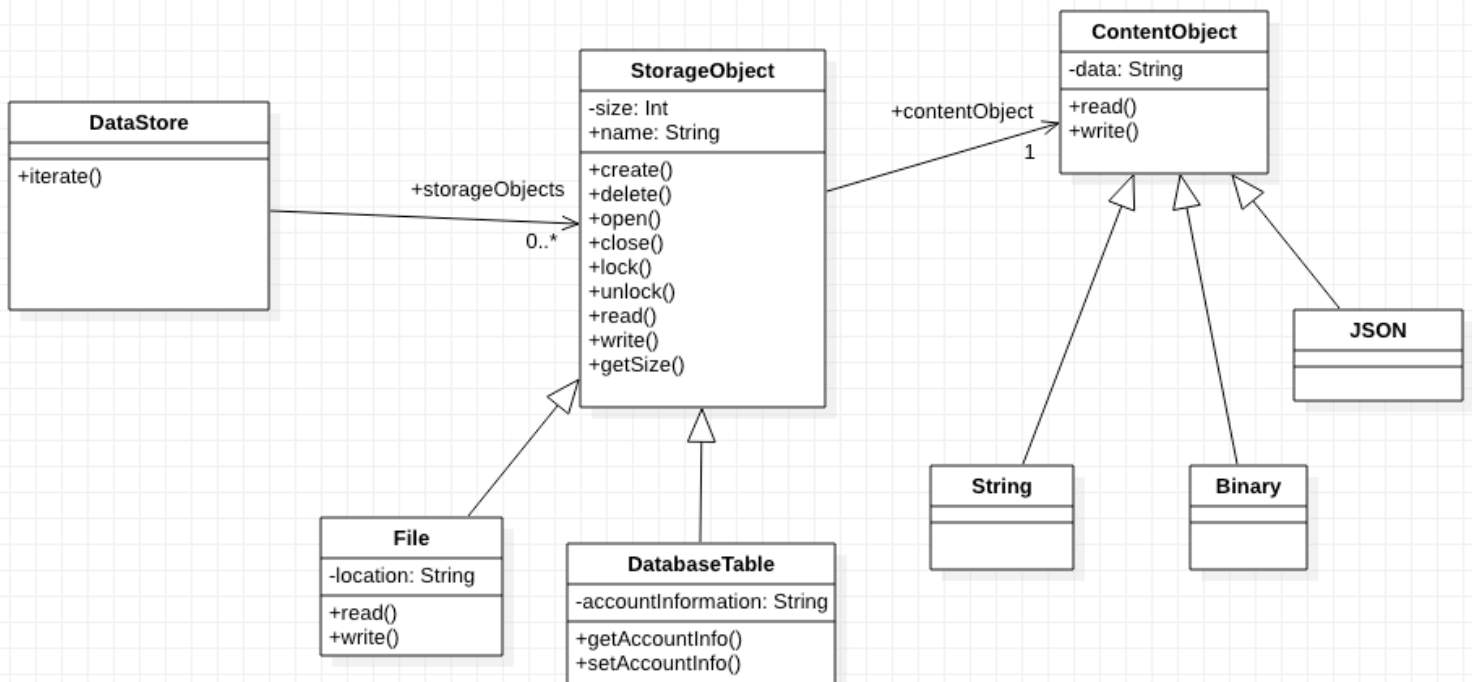
Declaration

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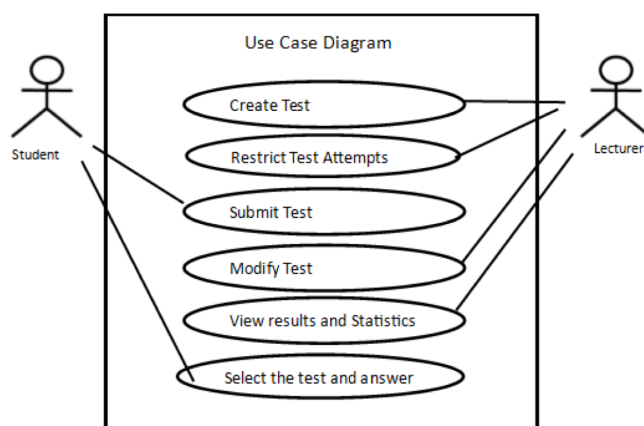
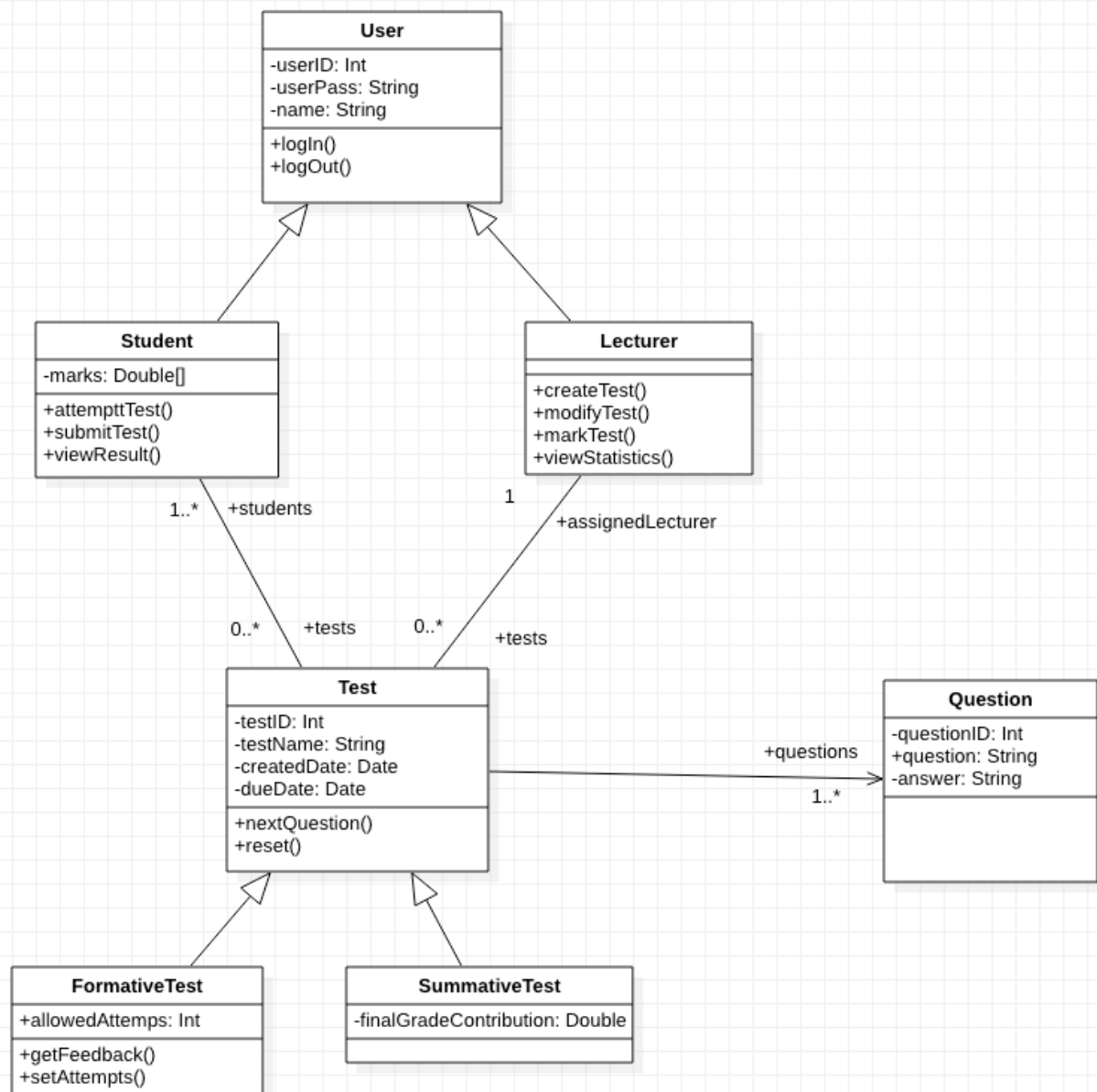
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Task 1 - Class Diagrams

Class Diagram for Example System



Class Diagram for Use Case and Explanation



Our class diagram includes 3 base classes and 4 subclasses. At the top of the diagram, we have a parent class called User which represents every student and lecturer in our system. Each user has a userID of type Integer to identify each user account in our system. We also store our users' password and name in a String variable. There are two types of User account, a student and a lecturer.

The student must be able to access his or her marks and we store their marks in a Double array. A student is able to start a test by calling the attemptTest() function and at the end of test, submission is possible by calling the submitTest() function using a Student instance. Once the lecturer finished marking the student's test, the student can view the result by calling the viewResult() function which would display the score the student achieved.

The lecturer has the power to create a new test by calling the createTest() function, which would open up a test creation form for the lecturer. After assigning a test, the lecturer is able to go back and modify certain informations of the test by calling the modifyTest() function. When the deadline of an assigned test is passed, then the lecturer can mark each student's test by entering the marking screen through the markTest() function. We also included a feature for the lecturers that helps them get an overall idea of their students' performance by analysing the statistics of grades with visual diagrams. They can access this feature by calling the viewStatistics() function.

When the lecturer writes a new test, a Test object is created. A lecturer may create more than one tests, so we hold those test instances in an array called tests. However, one test object can only belong to one lecturer. The concept is similar for the students, except a test object may belong to many students as there are usually more than one student in a module. Each student may have zero or more tests and we store the students' test instances in an array called tests. We identify the tests by their numeric testID. Each test has a name and the date it was created and the date the test is due.

A test consists of one or more questions. Each question has an integer identifier and the question itself in a String representation as well as the answer.

There are two types of tests in our system, formative and summative, they are both subclasses of the Test class. A student may have multiple attempts at each question in a formative assessment but the lecturer has the ability to limit the allowed attempts using the `setAttempts()` function. After the student completed a formative assessment, feedback can be generated by the formative test by calling the `getFeedBack()` function. A summative type of test is similar but the student can only have one attempt and the mark contributes to the student's final grade for the module.

Task 2 - Risk Analysis / Plan

<u>#</u>	<u>RISK</u>	<u>LIKELIHOOD</u>	<u>IMPACT</u>	<u>STRATEGY</u>
1	Data corruption	In this system there will be a medium likelihood of data corruption as it normal happens due to bad software or hardware which we should pass	The impacts of data corruption include missing data and unreadable data. This will be a high impact.	A way to minimize disruption would be to create backups and to scan for malware in the system.
2	Bugs in code	Highly likely as the project will be built by 6 different members who will all have different styles of coding	High impact as bugs in the program can lead to the entire system to crash or data to be lost, this can have serious impacts as students results could be lost.	The software can never be 100% bug free, to minimize the amount of bugs and severity of the consequences we can test the code as a whole piece of software as well as the individual functions. By communicating well as a team of programmers we can make each function integrate easily with each other. By allocating the correct amount of time and the correct people for the job we can reduce the amount of errors caused from being rushed or from a lack of technical knowledge.

#	RISK	LIKELIHOOD	IMPACT	STRATEGY
3	Time Management	Poor time management would have a medium likelihood of occurring	The impact of poor time management would be high . The proposed software would be delivered late to the client causing them to be very unsatisfied with the professionalism and management of the project.	To minimise the risk of poor time management the development process should be broken down with several targets and deadlines set that would need to be met. This would help to keep track of development progress - how much has been developed and how much is yet to be developed. Planning and managing the development time effectively will ensure that the software would be developed and ready for implementation before the deadline.
4	Difference in programming abilities.	Medium Once the task is split up, people with poor programming skills may struggle to complete their part	High Not having specific parts/modules of the project finished will mean we cannot submit the final project. Some modules may also be dependant on others, which will mean people's time may be wasted doing tasks that can't be included in the project.	To minimise the risk of this, we should confirm that each member is happy with tackling their task before beginning. If people are struggling we can also help them out. Incorporating the strategies in time management, tasks can be further broken down, so as that someone isn't tackling a large task in one go.
5	Vulnerabilities, exploits	High The likelihood of discovering different types of vulnerabilities and exploits would be high.	High Ignoring proper security measures in the process might lead to different kind of problems later on, such as: data leakage, unsafe data transmission, app injections.	To minimize the risk of this, we should make sure the app is updated from time to time, thus improving the code. In addition to that, data should be encrypted, so that it would be harder for it to be leaked. Moreover, we should test the app thoroughly for key features: authentication, authorization..
6	Complexity in user interface	Low The likelihood of our users finding our product's user interface complicated and difficult to use is low.	Medium Having too much features can lead to a very complicated UI/UX, which the user would not enjoy and therefore our product would lose value if people don't enjoy using it.	We will make sure to not include too many features and we will provide our users a guide on how to get the most out of our system. We will be careful with designing our UI and UX to make it easy to use for everyone

Likelihood / Impact	High Impact	Medium Impact	Low Impact
High Likelihood	(2), (5)		
Medium Likelihood	(1), (3), (4)		
Low likelihood		(6)	