

 <p>MANUKAU INSTITUTE OF TECHNOLOGY <i>Te Whare Takiri o Manukau</i></p>	<div>Business and Information Technology, Manukau Campus</div> <div>502.522 Object Oriented Programming</div>
Assessment	Project
Due Date:	Friday, 06 April 2018
Assessment Weighting:	This project contributes 40% towards the course total.
Student ID:	
Student Name:	
Student E-mail:	
<div>Statement of Original Authorship</div> <p>I hereby confirm that this project is my own work. In addition, the project has not previously been submitted for assessment, either in whole or in part, by either myself or any other student at either Manukau Institute of Technology or at any other tertiary institution. To the best of my knowledge and belief, the project contains no material which has been previously published or written by another person except where due reference has been made. All unpublished sources of information have been acknowledged. I make this statement in full knowledge of an understanding that, should it be found false, I will, in most circumstances, receive zero marks for this project and may face disciplinary action.</p> <p>Signed by student: _____</p> <p>Date: _____</p> <p>_____</p>	

This signed form must be submitted with your project.

Learning Outcomes

This project will test your understanding of the following learning outcomes:

LO2	Apply an Object-Oriented programming language
LO3	Code Object-Oriented software solutions for small systems involving multiple objects
LO4	Correct, test and debug Object-Oriented programs

Case Study

"Quality Guitars" is an Auckland based guitar rental company providing rental services of different types of guitars to customers Auckland wide. To get rid of most of the paper work involved in the business, they are looking to set up automation software to manage the rental business. You are hired as a software developer for this company to develop Guitars Rental management system. The system should mainly consist of three components: "Stock Maintenance", "Rental Record Management", and "Employee and Customer Management".

The "Stock Maintenance" component must keep track of Guitars. It maintains guitar Information such as serialNumber, price, builder, model, type, backWood and topWood, year of manufacture, rent charge per day, colour, status (whether it is in the shop, rented out or under maintenance), date it rents and date due back in. A guitar can:

- be one of two types: ACOUSTIC and ELECTRIC
- be built by one of the builders: FENDER, MARTIN and GIBSON
- be made of one of the woods: INDIAN_ROSEWOOD, BRAZILIAN_ROSEWOOD and MAHOGANY

The "Employee and Customer Management" subsystem manages the information of both person types: Employees and Customers. Basic information about all persons is person ID, name, date of birth, address, and telephone number. For Employees, additional information is office address, phone extension number, login details (username and password) and role like admin or staff. For Customers, information such as licence number, age and license expiry date is maintained.

The "Rental Record Management" subsystem manages information about rental records. A rental is a somewhat abstract object. A rental occurs when a customer approaches the company reception desk and selects a guitar or guitars to rent out. Over time a customer can have many rental records. A rental record can have many guitars associated with it. A guitar can be on many rental records over a period of time.

Note Your design should be flexible enough to add another music instrument that this business may decide to rent out in future.

What you are required to do:

You have a choice to work in teams (maximum of 3 people) or individually for this project but you will only be assessed on your own contribution to the overall work.

There are three components to code: "Stock Maintenance", "Employee and Customer Management" and "Rental Record Management". You are only required to create one of these if you work in a team of three, but each member creates a separate and different component (there cannot be two of the same component). If you are working on your own (or in a team of two) identify which component you wish to be marked for and fully code this. You will need to code some elements of the other components to ensure you can adequately test your component. Teams are expected to combine their work into a cohesive whole but you may not copy code from one of your teammates for your component, this is seen as misconduct. Your component should be your own development. It is acceptable to assist your team members if they are having problems but it should be a troubleshooting exercise on their code, not a copy from your own code.

Stock Management Component should be able to

- Add new guitar information
- Display a list of guitars available for rent
- For a selected model, display: model, builder, colour and type
- For a selected serialNumber, display: colour, backwood, topwood, builder, type and status
- For a selected year of manufacture, display: model, backwood, topwood and builder
- Update the information of a selected guitar (Hint: search guitar by its serialNumber and allow to update its details, you need to check what details of a guitar can be changed in real life).

Rental Management Component should be able to

- Display a list of guitars rented by a selected customer
- Rent guitar/guitars to a customer
- Return guitar/guitars rented by a customer
- Display the list of all guitars rented between two selected dates

Employee and Customer Management Component should be able to

- View and update information for a selected customer
- View and update information for a selected employee
- Add details of a new employee
- Search and display information of a person by id

When you have built this system you must test that your system meets requirements. This will include testing that all of the above components work. Each team member should create a test matrix for their component and test its functionality. This will be white box testing, looking at the functionality from the developers' perspective.

Submission

You are required to submit the Java project in zip format via Canvas by the due date. Moreover, you are also required to present your project. Please note that **your submission will be marked only if you present your project**. You must be able to explain your code and answer questions about it.

Failure to present the project and/or submit the code means zero mark for this assessment.

A presentation schedule will be provided and you are expected to present on time. Please contact me if you need to reschedule your presentation and you have a good reason for doing so.

Late submission

If you have not completed your project by the due date, I may allow you to hand it in up to 5-days late. In this case a penalty of 5% per day will be deducted from your mark.

Marking Scheme

You are required to submit the following items:

Details of submission items	Possible Marks	Learning Outcomes
<p>Your component code that may include various classes such as Employee, Customer, Guitar Rental, classes to store and manage Guitar information etc. and demonstrate the following:</p> <ul style="list-style-type: none">○ Correctly passing object references and persistence of objects○ Correctly demonstrating associations and aggregation○ Correctly demonstrating inheritance○ Use of collections such as ArrayList, adding, removing and searching items○ Creating a model which accurately reflects the business process	35	2,3
Your Unit Testing code	5	4

Feedback to Student:

Feedback will be uploaded on canvas along with your marks.