NAME OF STUDENT:……...**STUDENT NUMBER:**……...

SUBJECT/VAK	**DATE/DATUM**	**TIME/TYD**
PRACTICAL TECHNICAL PROGRAMMING 3	1st June 2018	3 HOURS 00 MINUTES

Cape Peninsula University of Technology

FACULTY OF INFORMATICS AND DESIGN

COURSE(S): ND: INFORMATION TECHNOLOGY

EXAMINER : A ANIKWUE
INTERNAL MODERATOR : B KABASO

SPECIAL INSTRUCTIONS/SPESIALE INSTRUKSIES

Read the full Instructions on the first page of this Paper

REQUIREMENTS/BENODIGDHEDE
None.

Instructions

1. Do not use your flash disk or any external disk storage for development as your process may be slow. However, you can back-up your attempt.
2. Do not create extra domain entities or add extra attributes to existing domain entity attributes.
3. Please use IntelliJ or Netbeans only. Any other IDE used will not be graded.
4. Use the maven build tool for development and JUnit as your test framework.
5. The root/base package of your application MUST be ***com.fivehl.tp2***.
6. Your application/project name MUST follow this format: ***AXXXXXXXXX*** where XXXXXXXXX is your student number. Example: A217433923.
7. Marks will be given for clear codes that follow all software design concepts taught.
8. Zip your entire application/project folder, save it as **<*your-lastname*>_<*student-number*>** (e.g.: Whitebread_217422923) and upload on Blackboard when you are done.
9. Blackboard is the ONLY place for submission. A link will be made available on Blackboard for submission. You will not be graded if you do not submit on Blackboard.

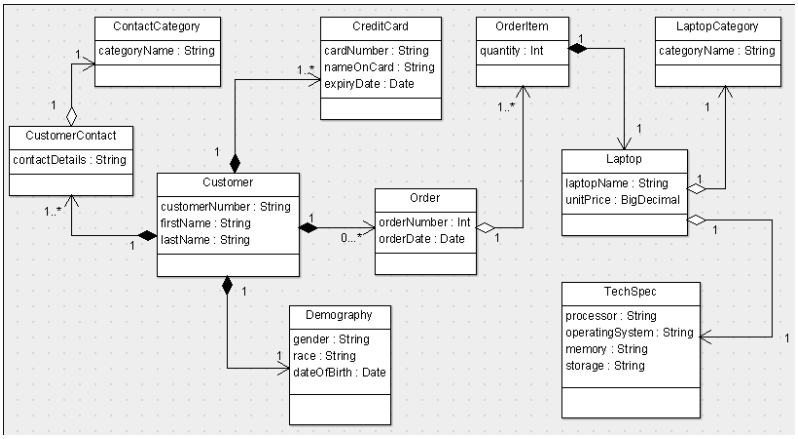
Practical Test
[100 Marks]
Question Specification

Problem Statement

You have been hired to help develop part of an application for a store called 5HL. 5HL sells Laptops and wishes to grow their business by leveraging the Internet to provide its customers with an online store.

The project is divided into three layers: the Presentation, Service and Repository layers. You are tasked to develop a section of the Service and Repository layers using **TDD** and the **Open-Closed Principle**.

Below is a class diagram for your task.



Using the class diagram as a reference point, attempt the following tasks using either IntelliJ or Netbeans:

1. Create a maven project called ***A<your-student-number>*** (e.g. A212988312), and base package as: *com.fivehl.tp2*. **[2 marks]**
2. In a **model** package, create domain classes for all classes in the class diagram above. **[10 marks]**
3. In another package called **repository**, create repositories for the domain classes. **[15 marks]**
4. In a package called **factory**, create factories for the domain classes. **[10 marks]**
5. In a service package, write the following services:
   a. A service that returns a customer's order(s) given the *customerNumber*. **[8 marks]**

b. A service that returns the *TechSpec* of a Laptop, given the *laptopName*. **[8 marks]**

c. A service that returns all laptops. **[4 marks]**

d. A service that returns the quantity of an order item given the *orderNumber* and *laptopName*. **[15 marks]**

e. A service that returns all order items in a customer order given the *customerNumber* and *orderNumber*. **[8 marks]**

f. A service that returns the expiry date on a customer's credit card given the *customerNumber* and *cardNumber*. **[12 marks]**

g. A service that returns all the customer contacts given the *customerNumber*. **[8 marks]**

THE END