

BSc (Hons) Cloud Computing
ACCC4004
INFORMATION ENGINEERING
3rd September 2021
IN CLASS TEST – June 2021 Term (30%)

Date:

Time: Since this is an online assessment test, you are required complete your work during the given period of time (10:00AM – 5:00PM) and upload your report.

Please read the instructions carefully and meet ALL requirements during the given period of time and submit your work before the deadline (BEFORE 5:00PM TODAY).

INSTRUCTIONS:

You must use several design techniques that you have been looking at to produce a suitable solution for the bellow scenario. For example:

A Data flow diagram: Interface, process, data store and Dataflows (**use suitable designing software tool eg: StarUML, Smart Draw, MS-Visio or any other**)

An Entity Relationship Diagram (use suitable designing software tool) Showing:
Entities, relationships, degree of relationships, membership class and annotated descriptions for each relationship

A Use Case Diagram: actors, use cases (include and extent if any) and the system boundary)

Documentation

Save the diagram as jpeg or any other image format. Use MS Word, insert the diagram and give brief explanation to accompany your completed diagrams. Mention any assumptions you have made with the scenario.

Please hand in the following:

A report of the system you have designed and submit the report to Moodle using the link provided.

CASE STUDY

Q-Taxi Company

Q-Taxi is a small independent taxi company operating in a major city. Q-Taxi owns 25 taxis which it rents out to drivers on an annual basis. Each vehicle is effectively rented out to three drivers to cover three 8 hour shifts in a day: therefore there are 75 taxi drivers contracted to Q-Taxi at any given time. Q-Taxi is a profitable company because it has built up a good reputation locally, and there is always a waiting list of drivers wanting to apply to rent a vehicle.

Each driver pays an annual rental fee in advance to Q-Taxi giving them use of a vehicle for 8 hours a day every day of the year. In addition to the annual rental, Q-Taxi takes 5% of the money a driver earns every week. Q-Taxi is responsible for taxing, insuring and maintaining the vehicles. If a vehicle is due for a service or needs to be repaired Q-Taxi contacts a garage and arranges it. Q-Taxi keeps an account of the repair and service costs for each vehicle.

At the end of each shift drivers give the money they have earned to Q-Taxi. If they needed to refuel the vehicle they also submit an expense claim at the end of the shift. At the end of every week Q-Taxi calculates the amount owing to each driver based on the money earned from fares, the expense claims and the deduction of 5%. The drivers are then paid.

You must use design techniques that you have been looking at to develop a suitable solution for the above scenario.

Maintenance service annual report for each vehicle

Vehicle No: T501ABC	Make: Ford	Date of registration: 4/10/2009	
	Driver: J Smith	Driver's tel. no: 6031240	
	Driver: A Brown	Driver's tel.no: 5084222	
	Driver: J Patel	Driver's tel.no: 6012345	
Service date: 3/2/2014	Description: Regular service	Garage name: ZCars	Garage address: 1 Main Street, London
Service date: 12/8/2014	Description: Regular service	Garage name: Apollo cars	Garage address: 3 Commercial Rd, London
Service date: 23/11/2014	Description: Additional service	Garage name: ZCars	Garage address: 1 Main Street, London
.....			
Vehicle No: X887TWV	Make: Opel	Date of registration: 15/9/2010	
	Driver: B Jones	Driver's tel.no: 6221207	
			

Produce:**An Entity Relationship Diagram showing:**

Entities, relationships, degree of relationships, membership class and annotated descriptions for each relationship

Use Case diagram showing:

Actors, association, use cases (include/extend if any) and system boundary

A Data flow diagram showing:

External entities, processes, data stores and Dataflows

Documentation

Using Microsoft Word, provide brief notes to accompany your completed diagrams and upload the document in the appropriate submission point on Moodle.