FIT2001: Systems Development – Workshop 7
Support Material

Objectives:

- Practice requirements gathering and documentation techniques – Domain model class diagram
- Work on Assignment 2

The following activities are involved in this workshop:

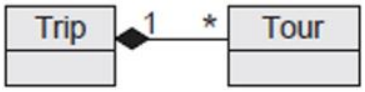
- Activity 1: Review QUIZ (via Flux)
- Activity 2 & 3: Domain Model Class Diagram
- Activity 4: Assignment 2 Discussion
- Workshop Quiz (happen at various time each week)

Activity 1: Review QUIZ

Q1. A trip might comprise of multiple tours, one tour can be included in several trips. Which model represents the description?

A.


B.


C.


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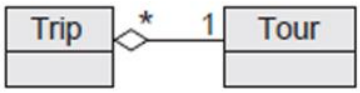

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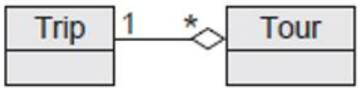

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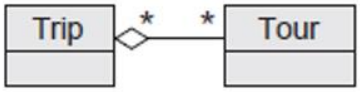
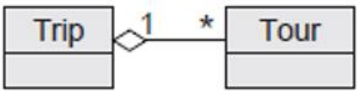


G.


Q1 Discussion

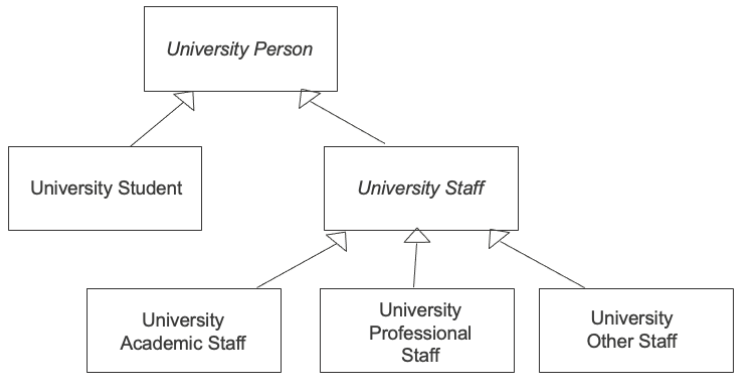
Generally since a TRIP comprises of TOURS, the TOUR is part of the trip and shows aggregation at the TRIP end of the relationship. The aggregation is weak (unfilled diamond) because the TOUR can exist separately, be moved, replaced, etc. So it is not composition, where if you deleted the TRIP all the TOURS contained within it would be deleted as well.

A. Incorrect answer – see above aggregation discussion
B. Incorrect answer – see above aggregation discussion
C. Incorrect answer – see above aggregation discussion
D. Incorrect answer – the aggregation is shown correctly, but the multiplicity is incorrect.
   - A Trip can have one and only one tour (incorrect)
   - A Tour may not be included in any trips, but may be included in multiple trips (correct)
E. Incorrect answer – the aggregation is shown incorrectly – it shows that a trip is part of a tour, rather than the other way around
F. Correct answer

- This relationship shows the correct aggregation as per discussion above
- A Trip can have no tours allocated yet but it may have multiple tours allocated (correct)
- A Tour may not be included in any trips, but may be included in multiple trips (correct)

G. Incorrect answer – the aggregation is shown correctly, but the multiplicity is incorrect.
- A Trip can have no tours allocated yet but it may have multiple tours allocated (correct)
- A Tour can only be included in one and only one trip (incorrect)

Q2. Which of the following statements is NOT TRUE about this model?



A) University Person is a Superclass and an Abstract class

B) University Student is a Superclass, a Subclass and an Abstract Class

C) Abstract classes are shown in italics

D) University Academic Staff, University Professional Staff and University Other Staff are subclasses of the University Staff superclass

Q2 Discussion

A) University Person is a Superclass as shown by the arrow notation. It is an abstract class as shown by the italics It is the generalised version of University Student and University Staff.

B) University Student is a Superclass, a Subclass and an Abstract Class is NOT TRUE (correct answer) as it is just a subclass, and a concrete class as it will be instantiated if a new student is created. It is not a superclass as it is has not subclasses.

C) Yes that is correct - I did not cover this in the lecture, so please make sure to remember this

D) University Academic Staff, University Professional Staff and University Other Staff are subclasses of the University Staff superclass – that is correct as shown by the notation. It means that if a new staff member joins the university, they have to be either an academic, a profession or the general other category.

Activity 2: Domain model class diagram – Melbourne Driving School

- Work together with your tutor and fellow students to develop a domain class model diagram for Melbourne Driving School.

Melbourne Driving School (MDS) offers a range of driving lessons using contract driving instructors.

MDS wants a basic web site that offers information about the driving school and the types of lessons it offers – beginner, refresher, safety. Customers should be able to make a booking for a lesson type (beginner, refresher or safety), and should provide their name, address, mobile phone, email and date of birth, the type of lesson they require and the type of car they want to learn on – automatic or manual. They must also provide additional details depending on the type of lesson they book:

- For a beginner lesson - learner registration no
- For a refresher lesson - length of time not driven, date they first got their licence
- For a safety lesson - how long they have had their licence, reason they want a safety lesson

MDS has a large number of instructors who can provide the types of lessons required. New instructors are added to the list fairly regularly, and the instructor's name, address, mobile number, email, business name and ABN are recorded along with the types of lessons they can deliver, and the type(s) of cars they have. Some instructors have both manual and automatic cars.

When we receive a booking, we want the customer to be given a booking ID and to be informed that they will be contacted by an instructor 24 hours. We want the booking allocated to an available instructor (one who has less than 15 lessons a week) and we want them sent the details of the customer, the lesson type and car type they require. The instructor should then contact the customer to arrange a suitable date/time for their lesson and record it in the system. The system should send the student and instructor an SMS reminder 24 hours before their lesson. The instructor should also record when the lesson is completed, or delete the lesson if it is cancelled. At the end of the month we invoice the instructor – they pay us 10% of all lessons they have completed in the past month. We also need to record the payment when it is made – should be within 2 weeks from the invoice date. They can make partial payments. If they have not paid the full amount within 2 weeks, we want to send them an email reminder every 3 days for 2 weeks. After that, if they have still not paid, we remove them from our system, and no longer give them any work.

A2 Sample solution:

- **Please see separate pdf file in Workshop 7 section of Moodle.**

Activity 3: Domain model class diagrams – Bayside Bikes & Kantini Kegs

- Task 3.1: Review Bayside Bicycles detailed project description and documents, and create the Domain model class diagram, showing attributes, associations and multiplicity.
- Task 3.2 (if you complete Task 2.1 early or for additional practice at home):
  Review Kantini Kegs detailed project description and documents, and create the Domain model class diagram, showing attributes, associations and multiplicity

A3 Sample solution:

- **Please see separate pdf files in Workshop 7 section of Moodle. There are a couple of options for Bayside Bikes and one for Kantini Kegs. Please note that depending on your assumptions there are a number of valid options.**