

Student Number

Student Name:

Date:

CS5483 Tutorial Question 6

Convert the following relational database into an XML document:

Relation Car\_rental

<u>Car_model</u>	<u>Staff_ID</u>	*Trip_ID
MZ-18	A002	T0001
MZ-18	B001	T0002
R-023	B004	T0001
R-023	C001	T0004
SA-38	A001	T0003
SA-38	A02	T0001

Relation Trip

<u>Trip_ID</u>	*Department_ID
T0001	AA001
T0002	AA001
T0003	AB001
T0004	BA001

Relation Department

<u>Department_ID</u>	Salary
AA001	35670
AB001	30010
BA001	22500

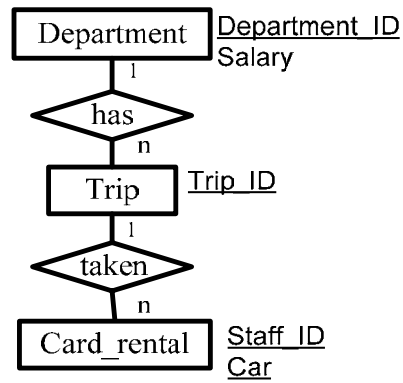
Model answer

Derived Classification table

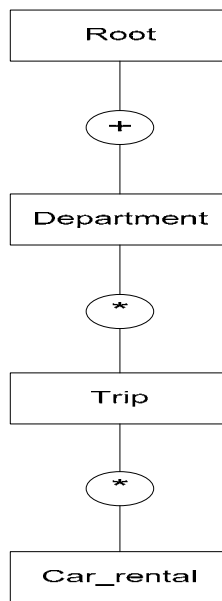
Relation Name	Rel Type	Primary-Key	KAP	KAG	FKA	NKA
Department	PR2	Department_ID	Department_ID			Salary
Trip	PR1	Trip_ID			Department_ID	
Car_rental	SR1	Car_model Staff_ID			Trip_ID	

Mapped Extended Entity Relationship model

A derived EER model for car rental



Mapped XML Tree Model with Department as Root



## Mapped Document Type Definition

```
<!ELEMENT ROOT (DEPARTMENT+)*>
<!ELEMENT DEPARTMENT (TRIP*)>
<!ELEMENT TRIP (CAR_RENTAL*)>
<!ELEMENT CAR_RENTAL EMPTY>
<ATTLIST DEPARTMENT
    DEPARTMENT_ID CDATA #REQUIRED
    SALARY CDATA #IMPLIED>
<ATTLIST TRIP
    TRIP_ID CDATA #REQUIRED>
<ATTLIST CAR_RENTAL
    CAR_MODEL CDATA #REQUIRED
    STAFF_ID CDATA #REQUIRED>
```

## Mapped XML document

```
<ROOT>
  <DEPARTMENT DEPARTMENT_ID = "AA001" SALARY = '35670">
    <TRIP TRIP_ID = "T0001">
      <CAR_RENTAL CAR_MODEL="MZ-18" STAFF_ID="A002"/>
      <CAR_RENTAL CAR_MODEL="R_023" STAFF_ID="B004"/>
      <CAR_RENTAL CAR_MODEL="SA_01" STAFF_ID="A002"/>
    </TRIP>
    <TRIP TRIP_ID = "T0002">
      <CAR_RENTAL CAR_MODEL="MZ-18" STAFF_ID="B001"/>
    </TRIP>
  </DEPARTMENT>
  <DEPARTMENT DEPARTMENT_ID = "A0001" SALARY = '30010">
    <TRIP TRIP_ID = "T0003">
      <CAR_RENTAL CAR_MODEL="SA-38" STAFF_ID="A001"/>
    </TRIP>
  </DEPARTMENT>
  <DEPARTMENT DEPARTMENT_ID = "BA001" SALARY = '22500">
    <TRIP TRIP_ID = "T0004">
      <CAR_RENTAL CAR_MODEL="R-023" STAFF_ID="C001"/>
    </TRIP>
  </DEPARTMENT>
```