

CIS 671, Winter 2002

Homework 5: Object Query Language (ODL)

The following questions refer to the database shown below:

```
class Customer
( extent Customers
  key CustID )
{ attribute struct Contact {string FirstName, string LastName} ContactName;
  attribute integer CustID;
  attribute string CompanyName;
  attribute string BillingAddress;
  attribute string City;
  attribute string State;
  attribute integer ZipCode;
  attribute string PhoneNumber;
  relationship set<ScheduleDetail> CustSchedDetails inverse ScheduleDetail::CustRequesting;
};

class ResourceType
( extent ResourceTypes
  key ResourceTypeID )
{ attribute integer ResourceTypeID;
  attribute string ResourceType;
  relationship set<Resource> ResOfType inverse Resource::TypeOfResource;
};

class Resource
( extent Resources
  key ResourceID )
{ attribute integer ResourceID;
  attribute string ResourceName;
  attribute string Comments;
  relationship ResourceType TypeOfResource inverse ResourceType::ResOfType;
  relationship set <Schedule> SchedOfResource inverse Schedule::ResourceScheduled;
};

class Schedule
( extent Schedules )
{ attribute date ScheduleDate;
  relationship set <ScheduleDetail> DetailsOfSchedule inverse ScheduleDetail::FromSchedule;
  relationship Resource ResourceScheduled inverse Resource::SchedOfResource;
};

class ScheduleDetail
( extent ScheduleDetails )
{ attribute time StartTime;
  attribute time EndTime;
  attribute Boolean Confirmed;
  relationship Schedule FromSchedule inverse Schedule::DetailsOfSchedule;
  relationship Customer CustRequesting inverse Customer::CustSchedDetails;
};
```

1. (10 points) Give the graphical ODL schema for this database using the notation shown in Figure 12.5.
2. Translate the following queries into *OQL*.
 - 2.1. (10 points) List the names of all resource and their types.
 - 2.2. (10 points) List the customer name of all customers that have scheduled a resource of type projector or laptop.
 - 2.3. (10 points) List the resource names and resource types of all resources scheduled by Lazy K Kountry Store on 5/22/95 **or** Let's Stop & Shop on 5/23/95.
 - 2.4. (10 points) List the resource names and resource types of all resources scheduled by Lazy K Kountry Store on 5/22/95 **and** Let's Stop & Shop on 5/23/95.
 - 2.5. (10 points) List each resource type and the number of times it has been reserved.
 - 2.6. (10 points) List the names of any resource that has been scheduled by all customers in California (CA).