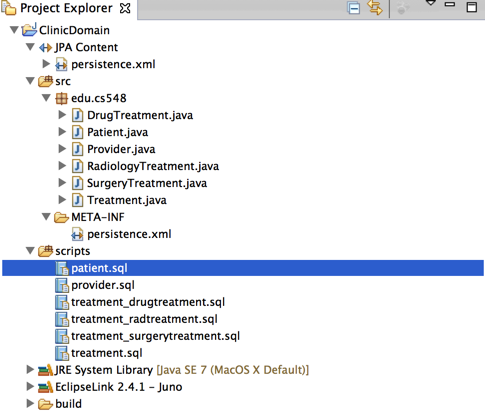
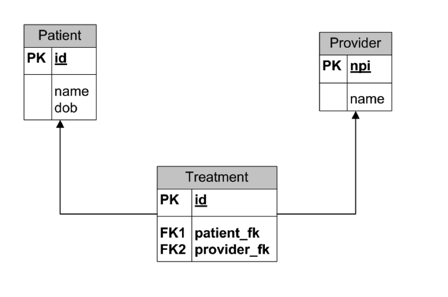
# CS548 – Assignment Report

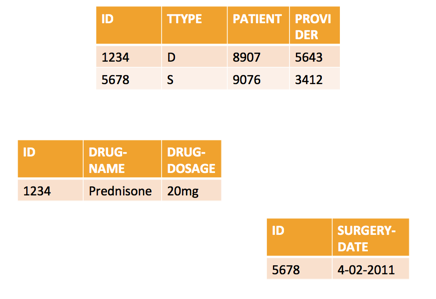
## Project Structure – Relationship between Classes



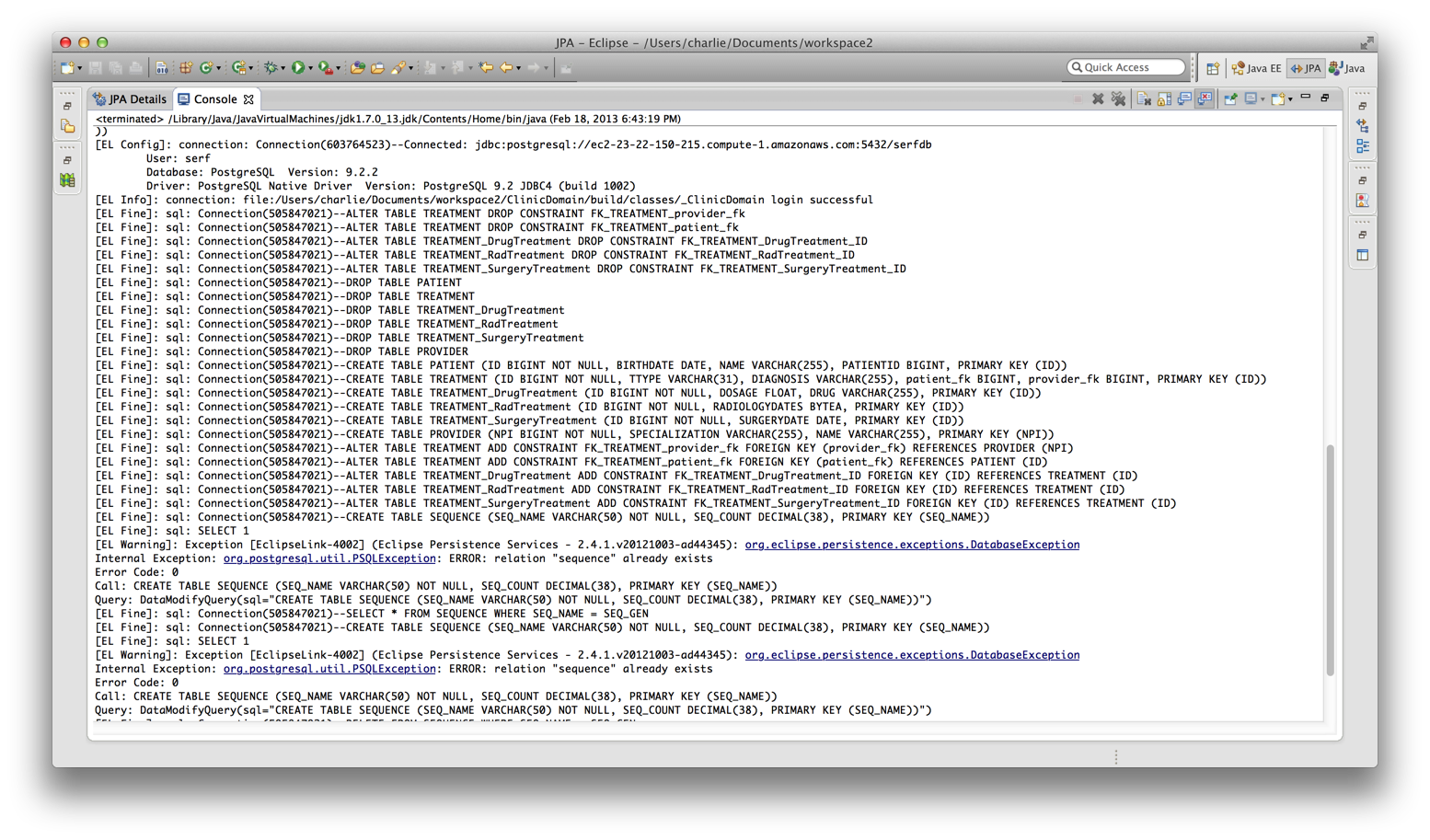
There is a one-to-many relationship between patients and treatments. There is a one-to-many relationship between providers and treatments.The relationships are represented like the following in database:



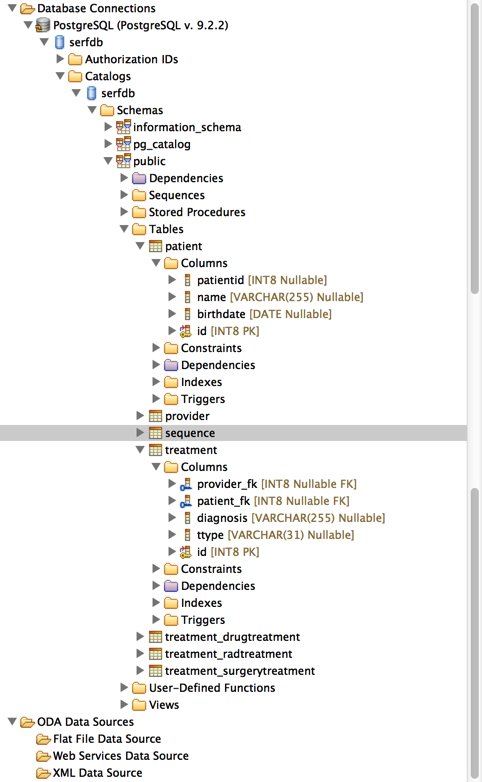
Treatment is an abstract class with concrete sub-classes of DrugTreatment, RadiologiTreatment, and SurgeryTreatment. This relationship of inheritance is represented in Database using **Join Strategy.**



## 2. Console Result



## 3. Database Schema



## Appenix – SQL Scripts

--<ScriptOptions statementTerminator=";"/>

**CREATE** **TABLE** patient (

id INT8 **NOT** **NULL**,

birthdate **DATE**,

name **VARCHAR**(255),

patientid INT8

);

**CREATE** **UNIQUE** **INDEX** patient\_pkey **ON** patient (id **ASC**);

**ALTER** **TABLE** patient **ADD** **CONSTRAINT** patient\_pkey **PRIMARY** **KEY** (id);

--<ScriptOptions statementTerminator=";"/>

**CREATE** **TABLE** provider (

npi INT8 **NOT** **NULL**,

specialization **VARCHAR**(255),

name **VARCHAR**(255)

);

**CREATE** **UNIQUE** **INDEX** provider\_pkey **ON** provider (npi **ASC**);

**ALTER** **TABLE** provider **ADD** **CONSTRAINT** provider\_pkey **PRIMARY** **KEY** (npi);

--<ScriptOptions statementTerminator=";"/>

**CREATE** **TABLE** treatment (

id INT8 **NOT** **NULL**,

ttype **VARCHAR**(31),

diagnosis **VARCHAR**(255),

patient\_fk INT8,

provider\_fk INT8

);

--<ScriptOptions statementTerminator=";"/>

**CREATE** **UNIQUE** **INDEX** treatment\_pkey **ON** treatment (id **ASC**);

**ALTER** **TABLE** treatment **ADD** **CONSTRAINT** treatment\_pkey **PRIMARY** **KEY** (id);

**ALTER** **TABLE** treatment **ADD** **CONSTRAINT** fk\_treatment\_provider\_fk **FOREIGN** **KEY** (provider\_fk)

**REFERENCES** provider (npi);

**ALTER** **TABLE** treatment **ADD** **CONSTRAINT** fk\_treatment\_patient\_fk **FOREIGN** **KEY** (patient\_fk)

**REFERENCES** patient (id);

--<ScriptOptions statementTerminator=";"/>

**CREATE** **TABLE** treatment\_radtreatment (

id INT8 **NOT** **NULL**,

radiologydates BYTEA(2147483647)

);

**CREATE** **UNIQUE** **INDEX** treatment\_radtreatment\_pkey **ON** treatment\_radtreatment (id **ASC**);

**ALTER** **TABLE** treatment\_radtreatment **ADD** **CONSTRAINT** treatment\_radtreatment\_pkey **PRIMARY** **KEY** (id);

**ALTER** **TABLE** treatment\_radtreatment **ADD** **CONSTRAINT** fk\_treatment\_radtreatment\_id **FOREIGN** **KEY** (id)

**REFERENCES** treatment (id);

--<ScriptOptions statementTerminator=";"/>

**CREATE** **TABLE** treatment\_surgerytreatment (

id INT8 **NOT** **NULL**,

surgerydate **DATE**

);

**CREATE** **UNIQUE** **INDEX** treatment\_surgerytreatment\_pkey **ON** treatment\_surgerytreatment (id **ASC**);

**ALTER** **TABLE** treatment\_surgerytreatment **ADD** **CONSTRAINT** treatment\_surgerytreatment\_pkey **PRIMARY** **KEY** (id);

**ALTER** **TABLE** treatment\_surgerytreatment **ADD** **CONSTRAINT** fk\_treatment\_surgerytreatment\_id **FOREIGN** **KEY** (id)

**REFERENCES** treatment (id);

--<ScriptOptions statementTerminator=";"/>

**CREATE** **TABLE** treatment\_drugtreatment (

id INT8 **NOT** **NULL**,

dosage FLOAT8,

drug **VARCHAR**(255)

);

**CREATE** **UNIQUE** **INDEX** treatment\_drugtreatment\_pkey **ON** treatment\_drugtreatment (id **ASC**);

**ALTER** **TABLE** treatment\_drugtreatment **ADD** **CONSTRAINT** treatment\_drugtreatment\_pkey **PRIMARY** **KEY** (id);

**ALTER** **TABLE** treatment\_drugtreatment **ADD** **CONSTRAINT** fk\_treatment\_drugtreatment\_id **FOREIGN** **KEY** (id)

**REFERENCES** treatment (id);