**Exercise 1:**

Represent the following sentence by OWL:

1. Every segment can only have two end points;

Answer: exp:Segment rdf:type owl:Restriction ;

owl:onProperty exp:hasEndPoint ;

owl:cardinality “2”^^xsd:integer .

1. The set of integers is divided into the set of positive integers and the set of negative integers;

Answer: exp:Integer rdf:type owl:class ;

owl:unionOf (exp:Positive\_integer exp:Negative\_integer) .

1. Food factories are factories which only produce food.

Answer: ex:Food\_factory rdfs:subClassOf \_:x .

\_:x owl:equivalentClass ex:Factory;

rdf:type owl:Restriction ;

owl:onProperty ex:Produce ;

owl:allValuesFrom ex:Food

**Exercise 2:**

Explain the following OWL triples in natural language:

@prefix ex: <http://example.org/>

@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .

@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .

@prefix owl: <http://www.w3.org/2002/07/owl#> .

ex:LuxuryBathroomApartment rdf:type owl:Class;

rdfs:subClassOf \_:x.

\_:x rdf:type owl:Restriction ;

owl:onProperty ex:hasBathroom ;

owl:allValuesFrom ex:LuxuryBathroom;

owl:equivalentClass ex: Apartment.

Answer: Luxury Bathroom Apartments are apartments that only have luxury bathrooms.

**Exercise 3:**

Are the following valid DL concepts? If not, why?

1. (。No, there is no concept after

2. ) no, R should be restricted by quantifiers

3. ( Yes

4. ( No, there is no between (and

**Exercise 4:**

Express the following sentences in Description Logic.

1. Every teacher must teach someone
2. Every finger is a bodypart and is a part-of hand.
3. Zhang is a teacher of SEU

答案：

1. Teacher
2. Finger BodyPart Part\_of.Hand
3. Teacher(Zhang, SEU)