1. Write the inferred axioms using description logic after conducting classification in forward reasoning on the following axioms.

Endocarditis Heart\_Disease

Miocardial\_Infarction Heart\_Disease

Heart\_Disease Disease

Enterococcal\_Endocarditis Endocarditis

答案：

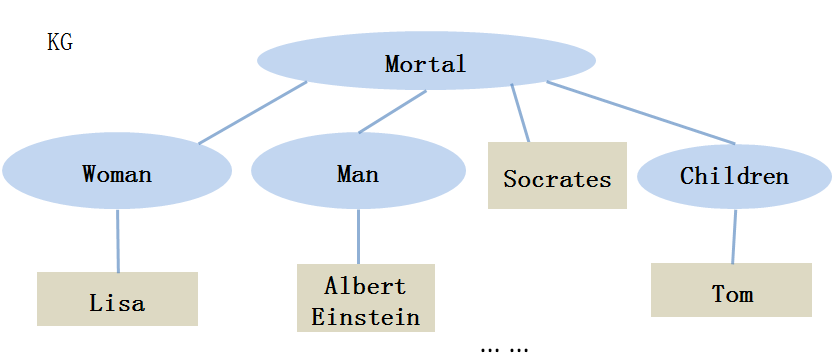
Endocarditis Disease

Miocardial\_Infarction Disease

Enterococcal\_Endocarditis Heart\_Disease

Enterococcal\_Endocarditis Disease

2） Given the following KG, please answer the question “Is Albert Einstein a mortal?” using query rewriting on the query *Mortal(Albert Einstein)* (this query is used for checking whether Albert Einstein is a mortal) .



答案： Yes, and the rewritten query is Woman(x) ⋁ Man(x) ⋁ Children(x) ⋁ Mortal (x)

3) The following ontology is inconsistent. Please remove one axiom in it to make it consistent and explain why it should be removed in natural langauge.

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6 University

答案：we can remove either 1,2,3,4,6 to make the ontology consistent.

This is because 1,3,6 can infer that so , but this is in conflict with 2 and 4.

4）Give a model of the following ontology and verify it is a model:

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答案：

An interpretation I:

I(John)=, I(Lisa)=l, I(Jack)=

I()={}, I(Employee)={l},

I(={}, I(Student)={,}

I()={()}

Verify: it is necessary to verify the given interpretation I is a model of the ontology by verify it satisfies every axiom and assertion of the ontology.