Ques:

i) You are designing a frame-based dialog system for movie booking.   [5 marks]
a). What are the different slots in your design? Mention along with their corresponding entity types and questions that the system would ask a user.
b). Show a finite-state dialog manager for the system
c). What changes would you make to the design to change it from a single initiative system to multi initiative system?

ii) Find Domain, Intent and Define Slots for each of the following Sentences: [4 marks]
a) Book me a table at Mariott hotel.
b) Search the list of movies directed by Satyajit Roy

iii) Develop an OWL ontology using the following for animal kingdom for classes like carnivorous,
herbivorous and omnivorous. Use following Property characteristics, restrictions and Class expressions   [4 marks]
   a) inverseOf
   b) domain
   c) range
   d) Cardinality
   e) disjointWith
   f) subClassOf

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(1) Slots for movie booking

Slots	Type	Question
1 movie name	String (Name)	which movie you want to book ticket
2 Date, Time	Date, Time	Booking for which date & time
3 Theatre	String (Place)	which theatre you want to visit
4 # of persons	At Int (No)	How many ppl
5 Mobile	long int	Share your mobile

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(5) Ticket booking

(6) Finite state dialogue Manager

which movie do you want to book ticket
↓
which date you want ticket for
↓
which theatre you would like to go
↓
for How many ppl do you want to bo tic
↓
Thanks I proceed to book ticke

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M T W T F S S | T W T F | M T W T F S S M T W T F S S M T W T
· · · · 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 2

Book ticket

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(i) © To make it a multi-multi initiative system, we can follow a (General understander system)

It is a kind of mixed initiative system. The conversation shifts b/w user & system.

The structure of frame guides, dialogue system asks question from user, filling any slots that user specifies. When form is filled, do database query.

28 THURSDAY

If the user answers 3 questions at once, the system can fill the slots & not asks them questions again.

(ii) ⓐ Book me a table at Marriott

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Domain : Hotel Restaurant or hotel
Intent : Book a table
Hotel name : Marriott

ⓑ Search list of movies directed by Satyajit Ray.

Domain : Movie
Intent : Searching a movie
Director : Satyajit Ray.

the class lion in the RDF/XML format, so then a machine-processable version of the class lion in the RDF/XML format looks as follows:

```xml
<owl:Class rdf:about="&AWO;lion">
    <rdfs:subClassOf rdf:resource="&AWO;animal"/>
    <rdfs:subClassOf>
        <owl:Restriction>
            <owl:onProperty rdf:resource="&AWO;eats"/>
            <owl:someValuesFrom rdf:resource="&AWO.owl;Impala"/>
        </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
        <owl:Restriction>
            <owl:onProperty rdf:resource="&AWO;eats"/>
            <owl:allValuesFrom rdf:resource="&AWO;herbivore"/>
        </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:comment>Lions are animals that eat only herbivores.</rdfs:comment>
</owl:Class>
```

where the "$\forall$" from equation 1.1 is serialised as owl:allValuesFrom, the "$\exists$" is