

# **CSE-HomeWork4**

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**Computer Engineering**

**CSE341-HW4**

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## Part 1

This project has 4 part. In first part we have a graph.

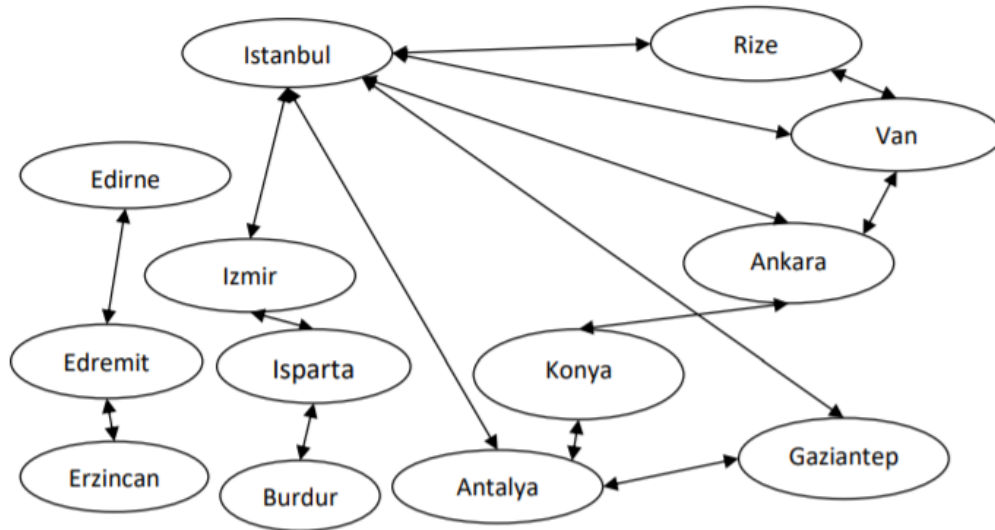


Figure 1: Flights

In the graph below you see the possible flights between some of the cities in Turkey. Write the predicate “route(X,Y) – a route between X and Y exists” that returns true if there is a route between any given two cities. My program has all the facts and predicates/rules. See the following:  
flight(istanbul,antalya).

route(X,Y) :- flight(X,Y).

A single query to complete your program should check if there is a direct route between two given cities. Alternatively, it can list all the connected cities for a given city. See the following:

?- route(edirne,X).

I implement predicate where ,when ,schedule, usage,conflict and meet

## Part 2

I implemented predicate distance and sroute.

## Part 3

In part 3 we have two table that show Lectures

I implement predicate where ,when ,schedule, usage,conflict and meet

Classes			Enrollment	
Class	Time	Room	Student	Class
102	10	z23	a	102
108	12	z11	a	108
341	14	z06	b	102
455	16	207	c	108
452	17	207	d	341
			e	455

Figure 2: Lectures

## Part 4

I implemented a Prolog predicate “element(E,S)” that returns true if E is in S. I implemented a Prolog predicate “union(S1,S2,S3)” that returns true if S3 is the union of S1 and S2. I implemented a Prolog predicate “intersect(S1,S2,S3)” that returns true if S3 is the intersection of S1 and S2. I implemented a Prolog predicate “equivalent(S1,S2)” that returns true if S1 and S2 are equivalent sets

## Output Examples

```
Welcome to SWI-Prolog (threaded, 64 bits, version 8.0.3)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

For online help and background, visit http://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- flight(istanbul,antalya).
true.

?- route(edirne,X).
X = edremit ;
X = edirne ;
X = erzincan.
```

Figure 3: Examlle 1

```
?- route(edirne,X).
X = edremit ;
X = edirne ;
X = erzincan.

?- sroute(edremit,erzincan,X).
X = 1044.
```

Figure 4: Examlle 2

```
?- schedule(a,P,T).
P = z23,
T = 10 ;
P = z11,
T = 12.

?- usage(207,T).
T = 16 ;
T = 17.

?- meet(a,b).
true.
```

Figure 5: Examlle 3

```
?- element(1,[1,2,3]).  
true.  
  
?- element(5,[1,2,3]).  
false.  
  
?- union([1,2,3],[4,5],L).  
L = [1, 2, 3, 4, 5].  
  
?- intersect([1,2,3],[2,9,10],L).  
L = [2].  
  
?- equivalent([1,2,3],[1,2,3]).  
true.  
  
?- equivalent([1,2,3],[1,2]).  
false.
```

Figure 6: Examlle 4