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Assignment – 1  
Course No. – 3005

Q1) Get the names of hobbies that “lastname” plays.

A1)

T1 := Project P# (Select Name = “lastname” (Person));

T2 := Project H# (Select P# = T1 (Play));

Project Name (Select H# = T2 (Hobby));

Hobby

Name
Chess
Dancing

Q2) Get the names of persons who play Bowling.

A2)

T1 := Project H# (Select Name = “Bowling” (Hobby));

T2 := Project P# (Select H# = T1 (Play));

Project Name (Select P# = T2 (Person));

Person

Name
Smith
Jones

Q3) Get the names of persons who play a hobby more than 3 times.

A3)

T1 := Project H# (Select Times > 3 (Play));

Project Name (Select P# = T1(Person));

Person

Name
Smith
Jones
Lastname

Q4) Get the names of persons who play either chess or dancing.

A4)

R := Project H# (Select Name = "Chess" (Hobby));

S := Project H# (Select Name = "Dancing" (Hobby));

T1 := R union S;

T2 := Project P# (Select H# = T1 (Play));

Project Name (Select P# = T2(Person));

Person	
<b>Name</b>	
Smith	
Jones	
Blake	
Lastname	

Q5) Get the names of persons who play both chess and dancing.

A5)

T2 := Project H# (Select Name = "Chess" (Hobby));

T3 := Project H# (Select Name = "Dancing" (Hobby));

T4 := Project P#(Select H# = T2(Play));

T5 := Project P# (Select H# = T3(Play));

Project Name (Select P# = (T4 Intersect T5)(Person));

Person	
<b>Name</b>	
Smith	
Jones	
Blake	
Lastname	

Q6) Get the person name/hobby name pairs such that the indicated person plays the indicated hobby.

A6)

T1(P#, Name, Age, H#, Times) := Person NJoin Play;

T2(P#, Name, Age, H#, Times, Hobby\_name) := T1 NJoin Play;

T3(Name, Hobby\_name) := Project Name, Hobby\_name(T2);

**T3**

<b>Name</b>	<b>Hobby_name</b>
Smith	Bowling
Smith	Chess
Smith	Dancing
Smith	Hiking
Smith	Skating
Smith	Ski
Jones	Bowling
Jones	Chess
Jones	Dancing
Jones	Hiking
Blake	Chess
Blake	Dancing
Lastname	Chess
Lastname	Dancing

Q7) Get the names of persons who do not play Ski.

A7)

T1 := Project H# (Select Name = "Ski" (Hobby));

T2 := Project P# (Select H# = T1 (Play));

T3 := Project Name (Person);

T4 := Project Name (Select P# = T2(Person));

T3 – T4;

Person	
Name	
Jones	
Blake	
Lastname	
Adams	

Q8) Get the names of persons who do not play any hobby.

A8)

T1 := Project P# (Play);

T2 := Project Name (Person);

T3 := Project Name (Select P# = T1(Person));

T2 – T3;

Person	
Name	
Adams	

Q9) Get the names of persons who play all hobbies.

A9)

S1 := Project H# (Hobby);

T1(P#, H#) := Project P#, H#(Play);

T2 := T1 / S1;

Project Name (Select P# = T2(Person));

Person	
Name	
Smith	

Q10) Get the names of persons who play all hobbies that “lastname” plays.

A10)

T1 := Project P# (Select Name = “Lastname”(Person));

S1(P#, H#) := Project P#, H#(Play);

T2 := S1 / T1;

T3 := S1/ T2;

Project Name (Select P# = (T3 – T1)(Person));

**Person**

Name
Smith
Jones
Blake

Q11) Get the names of persons who play only all the hobbies that “**lastname**” plays.  
A11)

**Person**

Name
Blake

Q12) Get the names of persons who play all hobbies except Skating and Ski.  
A12)

T1 := Select Name = “Skating” (Hobby);

T2 := Select Name = “Ski” (Hobby);

R := T1 Union T2;

S := Project H# (Hobby – R);

T3 := Project P# (Play / (Project H# (Hobbies)));

T4 := Project P# (Play / S);

Project Name( Select P# = (T4-T3)(Person));

**Person**

Name
Jones

Q13) Get the names of persons, the number of hobbies and total number of times they play those hobbies.

A13)

T1( P#, Name, Age, H#, Times) := Person NJoin Play;

T2 := Project Name, H#, Times(T1);

**T2**

<b>Name</b>	<b>H#</b>	<b>Times</b>
Smith	H1	3
Smith	H2	2
Smith	H3	4
Smith	H4	2
Smith	H5	1
Smith	H6	1
Jones	H1	3
Jones	H2	4
Jones	H3	5
Jones	H4	2
Blake	H2	2
Blake	H3	3
Lastname	H2	3
Lastname	H3	4

Q14) Get the names of persons who play hobbies but play the least number of hobbies.

A14)

R := Person njoin Play;

S(name, count):= Aggregate name, count (P#) (R);

Project name (select count < (S));

<b>Name</b>
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Lastname
Blake