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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

|  |
| --- |
| **Name** |
| 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

|  |
| --- |
| **Name** |
| 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**

|  |  |
| --- | --- |
| **Name** | **Hobby\_name** |
| 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 := Project H# (Select Name = “Skating” (Hobby));

T2 := Project H# (Select Name = “Ski” (Hobby));

R := T1 Union T2;

**Person**

|  |
| --- |
| **Name** |
| Jones |
| Blake |
| Lastname |

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**

|  |  |  |
| --- | --- | --- |
| **Name** | **H#** | **Times** |
| 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)