# COMP 3005 – Assignment 2

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1.

| ALG | TLC |
|---|---|
| T1 := project S# (select name = 'Zutkovic' (Sailer)); <br> T2 := project S#, B# (Reservation); <br> T3 := T2 divideby T1; <br> project Name (T3 njoin Boat); | {B.Name \| B in Boat and (exists R in Reservation, S in Sailer) (R.S# = S.S# and R.B# = B.B# and S.Name = 'Zutkovic')}; |
| **RESULT** | |
| Freedom | |

2.

| ALG | TLC |
|---|---|
| T1 := project B# (select name = 'Paradise' (Boat)); <br> T2 := project S#, B# (Reservation); <br> T3 := T2 divideby T1; <br> project Name (T3 njoin Sailer); | {S.Name \| S in Sailer and (exists R in Reservation, B in Boat) (B.Name = 'Paradise' and B.B# = R.B# and R.S# = S.S#)}; |
| **RESULT** | |
| Smith <br> Jones <br> Blake | |

3.

| ALG | TLC |
|---|---|
| T1 := project S# (Sailer); <br> T2 := project S# (Reservation); <br> T3 := T1 minus T2; <br> project Name (T3 njoin Sailer); | {S.Name \| S in Sailer and not (exists R in Reservation) (S.S# = R.S#)}; |
| **RESULT** | |
| Adams | |

4.

| ALG | TLC |
|---|---|
| T1 := Sailer njoin Reservation; <br> T2 (S#1, B#, Name1) := project S, B, Name (T1); <br> T3 (S#2, B#, Name2) := project S, B, Name (T1); <br> T4 := T2 njoin T3; <br> project Name1, Name2 (select S#1 != S#2) (T4); | {S1.name, S2.name \| S1 in Sailer and S2 in Sailer and (exists R in Reservation) (R.S#=S1.S# and R.S#=S2.S# and S1.S# != S2.S#)}; |
| **RESULT** | |
| Smith    Jones <br> Smith    Blake <br> Smith    Zutkovic <br> Jones    Smith <br> Jones    Blake <br> Jones    Zutkovic <br> Blake    Smith <br> Blake    Jones <br> Blake    Zutkovic <br> Zutkovic    Smith <br> Zutkovic    Jones <br> Zutkovic    Blake | |

5.

| ALG | TLC |
|---|---|
| T1 := project S#, B# (Reservation);<br>T2 := project B# (Boat);<br>T3 := T1 divideby T2;<br>project Name (T3 njoin Sailer); | {S.Name \| S in Sailer and (forAll B in Boat) (exists R in Reservation) (S.S# = R.S# and R.B# = B.B#)}; |
| **RESULT** | |
| Smith | |

6.

| ALG | TLC |
|---|---|
| T1 := project S#, B# (Reservation);<br>T2 := project B# (select Name != 'Splendor' (Boat));<br>T3 := project T1 divideby T2;<br>T4 := project B# (select Name == 'Splendor' (Boat));<br>T5 := T1 divideby T4;<br>T6 := T3 minus T5;<br>project Name (T6 njoin Sailer); | {S.Name \| S in Sailer and (forAll B in Boat) ((B.Name = 'Splendor' and (not exists R in Reservation) (S.S# = R.S# and R.B# = B.B#)) or (B.Name != 'Splendor' and (exists R in Reservation) (S.S# = R.S# and R.B# = B.B#)))}; |
| **RESULT** | |
| Jones | |

7.

| ALG | TLC |
|---|---|
| T1 := project S#, B# (Reservation);<br>T2 := project S# (select Name == 'Zutkovic' (Sailer));<br>T3 := T1 divideby T2;<br>T4 := T1 divideby T3;<br>project Name (T5 njoin Sailer); | {S'.Name \| S' in Sailer and S'.Name != 'Zutkovic' and (exists S in Sailer) (S.Name = 'Zutkovic' and (forAll B in Boat) ((exists R in Reservation) (S.S# = R.S# and R.B# = B.B#) and (exists R' in Reservation (S'.S# = R'.S# and R'.B# = B.B#) or not (exists R in Reservation) (S.S# = R.S# and R.B# = B.B#)))}; |
| **RESULT** | |
| Smith<br>Jones<br>Blake<br>Zutkovic | |

8.

| ALG | TLC |
|---|---|
| T1 := project S# (select Name = 'Zutkovic' (Sailer));<br>T2 := project S#, B# (Reservation);<br>T3 := T2 divideby T1;<br>T4 := T2 divideby T3;<br>T5 := project B# (Boat);<br>T6 := T5 minus T3;<br>T7 := project S# (T6 njoin T2);<br>T8 := T4 minus T7;<br>project Name (T8 njoin Sailer); | {S'.Name \| S' in Sailer and S'.Name != 'Zutkovic' and (exists S in Sailer) (S.Name = 'Zutkovic' and (forAll B in Boat) ((exists R in Reservation) (S.S# = R.S# and R.B# = B.B#) and (exists R' in Reservation) (S'.S# = R'.S# and R'.B# = B.B#) or not (exists R in Reservation) (S.S# = R.S# and R.B# = B.B#) and not (exists R' in Reservation) (S'.S# = R'.S# and S'.B# = B.B#)))}; |
| **RESULT** | |
| Zutkovic | |

9.

| ALG | TLC |
|---|---|
| Aggregate Name, Count (B#) (Sailer njoin Reservation); | {S.Name, Count(R.B#) \| S in Sailer and R in Reservation and S.S# = R.S#}; |
| **RESULT** | |

| Name | Count (B#) |
|---|---|
| Smith | 4 |
| Jones | 3 |
| Blake | 2 |
| Zutkovic | 1 |
| Adams | 0 |

10.

| ALG | TLC |
|---|---|
| T1 := Sailer njoin Reservation;<br>T2 := Aggregate Name, Count (B#) (T1);<br>project Name (select Count > 2 (T2)); | T1 (SName, Count) := {S.Name, Count(R.B#) \| S in Sailer and (exists R in Reservation) (S.S# = R.S#)};<br>{S.Name \| S in T1 and S.Count > 2}; |
| **RESULT** | |
| Smith<br>Jones | |