1) **There are 3 different chatbot names (alpha,beta,prod) and when we give name and versionid for a chatbot, we get the corresponding transition graph**

```
create view TransitionAlpha as select q1.query as query1, t.response,
q2.query as query2 from question q1, transitionto t, question q2 where
t.QID1 = q1.QID and t.QID2 = q2.QID and t.ChatbotName = “0/1Helix-
beta" and t.ChatbotVersionID = 1;
Query OK, 0 rows affected (0.01 sec)

select * from Transition;
24 rows in set (0.00 sec)

create view TransitionBeta as select q1.query as query1, t.response,
q2.query as query2 from question q1, transitionto t,question q2 where
t.QID1 = q1.QID and t.QID2 = q2.QID and t.ChatbotName = "0/1Helix-
beta" and t.ChatbotVersionID = 2;
Query OK, 0 rows affected (0.01 sec)

select * from transitionbeta;
24 rows in set (0.00 sec)

create view Transitionprod as select q1.query as query1, t.response,
q2.query as query2 from question q1, transitionto t,question q2 where
t.QID1 = q1.QID and t.QID2 = q2.QID and t.ChatbotName = "0/1Helix-
prod" and t.ChatbotVersionID = 0;
Query OK, 0 rows affected (0.01 sec)

select * from transitionprod;
24 rows in set (0.00 sec)
```

2)

```
create view throbbing as select distinct t1.query, x.response from
ResponseTo q, Question t1, question t2, transitionto x where t1.QID =
q.QID1 and t2.QID = q.QID2 and q.QID1 = x.QID1 and q.QID2 = x.QID2 and
q.PatientEmail in (select h.PatientEmail from Headache h where
h.HeadacheName = "throbbing");
Query OK, 0 rows affected (0.04 sec)

select * from throbbing;
19 rows in set (0.12 sec)
```

(Making processing faster by indexing)

```
create index HeadacheName on Headache(HeadacheName);
```

```
select * from throbbing;
19 rows in set (0.02 sec)
```

3)

```
create view Aspirin as select distinct e.Email, e.Phone, e.Fname,
e.Lname from Patients e, Medication m where m.PatientEmail = e.Email
and m.MedicationName = “Aspirin";
Query OK, 0 rows affected (0.01 sec)

select * from aspirin;
163 rows in set (0.02 sec) {before indexing}
```

(Making processing faster by indexing)

```
create index medicationname on Medication(MedicationName);

select * from aspirin;
163 rows in set (0.01 sec) {after indexing}
```

4)

```
SELECT h.HeadacheName,h.Severity,h.Duration FROM Headache h WHERE
PatientEmail = "kathy.johnson@usc.edu" AND h.Duration > (SELECT
AVG(Duration) FROM Headache WHERE PatientEmail =
"kathy.johnson@usc.edu");
12 rows in set (0.02 sec) {before indexing}

create index HeadacheDuration on Headache(Duration);
12 rows in set (0.00 sec)  {after indexing}
```

5)

```
select date(Timestamp) as Date, count(h.PatientEmail) as numHeadache,
avg(severity) as severe,avg(duration) as duration from Headache h
where h.PatientEmail = "bob.smith@usc.edu" and h.timestamp between
'2020-01-01' and '2020-02-01' group by date(Timestamp) order by
date(Timestamp);
28 rows in set (0.02 sec)  {before indexing}

create index HeadacheDate on Headache(Timestamp);
28 rows in set (0.00 sec)  {after indexing}
```