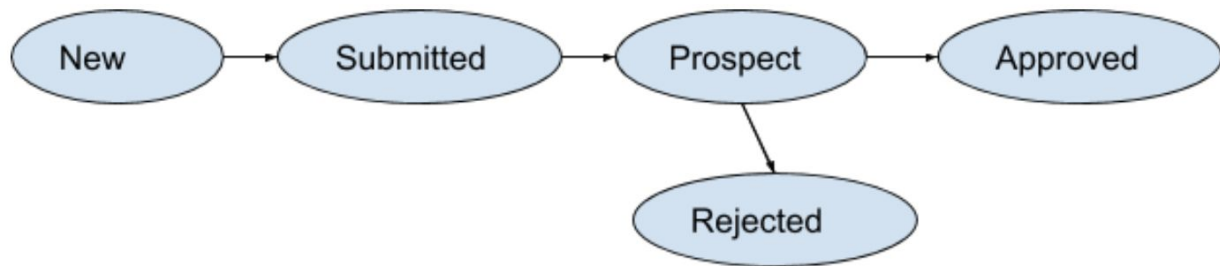


An object's state transition diagram is like this



Given a table with this schema that stores the above

ProjectID (Number) PK
ProjectName (string)
State (Number) PK
StateEntryTime (DateTime)

A given project may have gone through multiple states and as a result have multiple states stored with a different StateEntryTime.

Q1) Write a query to get the following
How many projects in each of the above states at its current final state.

New -- ??
Submitted -- ??
Prospect --??
Approved -- ??
Rejected -- ??

ANSWER:

Q2) How would you **simplify** the query if only Approved and Rejected are needed ?

Approved -- ??
Rejected -- ??

ANSWER:

Q3) Write a query to get the following result

ID	New	Submitted	Prospect	Approved	Rejected
1	2019-01-01	2019-01-11	2019-01-21	2019-01-31	
2	2019-03-03	2019-04-05	2019-04-06		2019-04-10
3	2019-04-04	2019-04-04	2019-04-05		
4	2019-05-18	2019-05-20			
5	2019-05-21				

ANSWER:

Q4) Given a table with 4 cols (Emp_id, emp_name, date_of_joining, dept_id)

- a) write a query to show the number of employees in each department that have more than 50 employees sorted desc on biggest size of employees.

ANSWER:

- b) Generate a serial number for this result set as part of the query

ANSWER:

- c) The records now have a **repeated field called Project, Role** where both are enums.
Enhance the query to find only those departments where number of managers is more than 10.

For example, Employee Yvonne, ITdept, SalesProject:Developer, OrderProject:Analyst, QuotingProject:Manager.

Table Emp:

- Emp_id,
- name,
- date_of_joining,
- Dept_id,
- ProjectRoleEnum
 - Project,
 - Role

Look into: BigQuery Repeated Fields for solution. (nested and repeated columns)

ANSWER:

Q5) Given two tables:

Table 1: Projects (Project_ID, Manager, Project_Name, Status)

Table 2: ProjectsRisks (Project_ID, Risk_Name, Date)

Write a query that lists each manager with their latest risk per project.

ANSWER: