Simple Queries

1,2,3 - Akshaya

4,5,6 - Aishwarya

7,8,9 - Nivedha

10,11 - Praveen

**Part -1 - Simple Queries**

-- The winning percentage of home team and away team over the years

SELECT

LOCATION

,TEAM\_NAME

,SUM(WIN\_COUNT)\*100/SUM(GAME\_COUNT) AS `WIN %`

FROM

game\_analysis

WHERE

SEASON >= 2000

GROUP BY 1,2;

db.Game\_Analysis.find({SEASON:{$gte:2000}}, {LOCATION:1, TEAM\_NAME:1, WIN\_COUNT:1, GAME\_COUNT:1, \_id:0})

db.Game\_Analysis.aggregate([{ $group:{ \_id : '$LOCATION', sum : { $sum: "$WIN\_COUNT" } }}])

db.Game\_Analysis.aggregate([{ $group:{ \_id : ['$LOCATION', '$TEAM\_NAME'], sum : { $sum: "$WIN\_COUNT"} }}])

db.Game\_Analysis.aggregate([{ $group:{ \_id : ['$LOCATION', '$TEAM\_NAME'], win\_count : { $sum: "$WIN\_COUNT"}, game\_count: {$sum: "$GAME\_COUNT"} }}])

db.Game\_Analysis.aggregate([{ $group:{ \_id : ['$LOCATION', '$TEAM\_NAME'], win\_percentage : {'$multiply': [{'$divide':[ {$sum: "$WIN\_COUNT"}, {$sum: "$GAME\_COUNT"}]},100]}}}])

-- Offensive and defensive metrics

-- Defense Metrics

SELECT

`game\_analysis`.`LOCATION` AS `LOCATION`,

`game\_analysis`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

AVG(`game\_analysis`.`AVERAGE\_NUMBER\_OF\_BLOCKS`) AS `AVERAGE\_NUMBER\_OF\_BLOCKS`,

AVG(`game\_analysis`.`AVERAGE\_NUMBER\_OF\_STEALS`) AS `AVERAGE\_NUMBER\_OF\_STEALS`,

AVG(`game\_analysis`.`AVERAGE\_POINTS\_AFTER\_TURNOVER\_PERCENTAGE`) AS `AVERAGE\_POINTS\_AFTER\_TURNOVER\_PERCENTAGE`,

AVG(`game\_analysis`.`DEFENSIVE\_REBOUND\_PERCENTAGE`) AS `DEFENSIVE\_REBOUND\_PERCENTAGE`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1,2;

-- Offense Metrics

SELECT

`game\_analysis`.`LOCATION` AS `LOCATION`,

`game\_analysis`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

AVG(`game\_analysis`.`AVERAGE\_2ND\_CHANCE\_POINTS`) AS `AVERAGE\_2ND\_CHANCE\_POINTS`,

AVG(`game\_analysis`.`AVERAGE\_ASSISTS`) AS `AVERAGE\_ASSISTS`,

AVG(`game\_analysis`.`AVERAGE\_PAINT\_POINTS`) AS `AVERAGE\_PAINT\_POINTS`,

AVG(`game\_analysis`.`OFFENSIVE\_REBOUND\_PERCENTAGE`) AS `OFFENSIVE\_REBOUND\_PERCENTAGE`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1,2;

-- Point distribution of top 5 and bottom 5 teams

-- Top 5 teams - Point Distribution %

SELECT `game\_analysis`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

AVG(`game\_analysis`.`AVERAGE\_2ND\_CHANCE\_POINTS`) AS `AVERAGE\_2ND\_CHANCE\_POINTS`,

AVG(`game\_analysis`.`AVERAGE\_2\_POINT\_GOAL\_PERCENTAGE`) AS `AVERAGE\_2\_POINT\_GOAL\_PERCENTAGE`,

AVG(`game\_analysis`.`AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`) AS `AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`,

AVG(`game\_analysis`.`AVERAGE\_PAINT\_POINTS`) AS `AVERAGE\_PAINT\_POINTS`,

AVG(`game\_analysis`.`AVERAGE\_POINTS\_AFTER\_TURNOVER\_PERCENTAGE`) AS `AVERAGE\_POINTS\_AFTER\_TURNOVER\_PERCENTAGE`,

SUM(WIN\_COUNT)\*100/SUM(GAME\_COUNT) AS `$\_\_alias\_\_0`

FROM `game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1

ORDER BY `$\_\_alias\_\_0` DESC,`TEAM\_SLUG` ASC

LIMIT 5;

-- Bottom 5 teams - Point Distribution %

SELECT `game\_analysis`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

AVG(`game\_analysis`.`AVERAGE\_2ND\_CHANCE\_POINTS`) AS `AVERAGE\_2ND\_CHANCE\_POINTS`,

AVG(`game\_analysis`.`AVERAGE\_2\_POINT\_GOAL\_PERCENTAGE`) AS `AVERAGE\_2\_POINT\_GOAL\_PERCENTAGE`,

AVG(`game\_analysis`.`AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`) AS `AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`,

AVG(`game\_analysis`.`AVERAGE\_PAINT\_POINTS`) AS `AVERAGE\_PAINT\_POINTS`,

AVG(`game\_analysis`.`AVERAGE\_POINTS\_AFTER\_TURNOVER\_PERCENTAGE`) AS `AVERAGE\_POINTS\_AFTER\_TURNOVER\_PERCENTAGE`,

SUM(WIN\_COUNT)\*100/SUM(GAME\_COUNT) AS `$\_\_alias\_\_0`

FROM `game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1

ORDER BY `$\_\_alias\_\_0` ASC,`TEAM\_SLUG` ASC

LIMIT 5;

-- Offensive rebound % over years vs win %

SELECT

`game\_analysis`.`SEASON` AS `SEASON`,

AVG((`game\_analysis`.`WIN\_COUNT` / `game\_analysis`.`GAME\_COUNT`)) AS `WIN %`,

AVG(`game\_analysis`.`OFFENSIVE\_REBOUND\_PERCENTAGE`) AS `OFFENSIVE\_REBOUND\_PERCENTAGE`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1;

-- 3 point efficiency and win %

SELECT

`game\_analysis`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

AVG(`game\_analysis`.`AVERAGE\_3\_POINT\_GOAL\_EFFICIENCY`) AS `AVERAGE\_3\_POINT\_GOAL\_EFFICIENCY`,

AVG((`game\_analysis`.`WIN\_COUNT` / `game\_analysis`.`GAME\_COUNT`)) AS `WIN %`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1;

-- Free throw goal efficiency all the teams

SELECT

`game\_analysis`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

AVG((`game\_analysis`.`WIN\_COUNT` / `game\_analysis`.`GAME\_COUNT`)) AS `WIN %`,

AVG(`game\_analysis`.`FREE\_THROUGH\_GOAL\_EFFICIENCY`) AS `FREE\_THROUGH\_GOAL\_EFFICIENCY`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1;

-- Free throw goal percentage all the teams

SELECT

`game\_analysis`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

AVG((`game\_analysis`.`WIN\_COUNT` / `game\_analysis`.`GAME\_COUNT`)) AS `WIN %`,

AVG(`game\_analysis`.`FREE\_THROUGH\_GOAL\_PERCENTAGE`) AS `FREE\_THROUGH\_GOAL\_PERCENTAGE`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1;

-- -- TEAM ANALYSIS

-- Salary Distribution of Teams

SELECT

`team\_winning\_stats\_with\_salary`.`TEAM\_SLUG` AS `TEAM\_SLUG`,

SUM(`team\_winning\_stats\_with\_salary`.`2021-2022 SALARY`) AS `2021-2022 SALARY`,

SUM(`team\_winning\_stats\_with\_salary`.`2022-2023 SALARY`) AS `2022-2023 SALARY`,

SUM(`team\_winning\_stats\_with\_salary`.`2023-2024 SALARY`) AS `2023-2024 SALARY`,

SUM(`team\_winning\_stats\_with\_salary`.`2024-2025 SALARY`) AS `2024-2025 SALARY`,

SUM(`team\_winning\_stats\_with\_salary`.`2025-2026 SALARY`) AS `2025-2026 SALARY`

FROM

`team\_winning\_stats\_with\_salary`

GROUP BY 1;

-- Win/Loss % of Teams and Team salary vs win %

SELECT

`team\_winning\_stats\_with\_salary`.`TEAM\_NAME` AS `TEAM\_NAME`,

MIN(`team\_winning\_stats\_with\_salary`.`YEAR\_FOUNDED`) AS `YEAR\_FOUNDED`,

SUM(`team\_winning\_stats\_with\_salary`.`2021-2022 SALARY`) AS `2021-2022 SALARY`,

SUM(`team\_winning\_stats\_with\_salary`.`TOTAL WIN %`) AS `TOTAL WIN %`,

SUM(`team\_winning\_stats\_with\_salary`.`TOTAL LOSS %`) AS `TOTAL LOSS %`,

SUM(`team\_winning\_stats\_with\_salary`.`HOME WIN %`) AS `HOME WIN %`,

SUM(`team\_winning\_stats\_with\_salary`.`HOME LOSS %`) AS `HOME LOSS %`,

SUM(`team\_winning\_stats\_with\_salary`.`AWAY WIN %`) AS `AWAY WIN %`,

SUM(`team\_winning\_stats\_with\_salary`.`AWAY LOSS %`) AS `AWAY LOSS %`

FROM

`team\_winning\_stats\_with\_salary`

GROUP BY 1;

**Part -2 - Queries with Joins:**

-- Average foul and FT % for home and away teams over the years

SELECT

`game\_analysis`.`LOCATION` AS `LOCATION`,

`game\_analysis`.`SEASON` AS `SEASON`,

AVG(`game\_analysis`.`AVERGAE\_FOULS`) AS `AVERGAE\_FOULS`,

AVG(`game\_analysis`.`FREE\_THROUGH\_GOAL\_PERCENTAGE`) AS `FREE\_THROUGH\_GOAL\_PERCENTAGE`

FROM

`game\_analysis`

INNER JOIN

(

SELECT

`game\_analysis`.`SEASON` AS `SEASON`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1

) `t0`

ON (`game\_analysis`.`SEASON` = `t0`.`SEASON`)

GROUP BY 1,2;

-- 3 point average percentage and efficiency

-- Average 3 Point Goal Percentage of Top 5 Teams

SELECT

`game\_analysis`.`SEASON` AS `SEASON`,

`game\_analysis`.`TEAM\_NAME` AS `TEAM\_NAME`,

AVG(`game\_analysis`.`TOTAL\_AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`) AS `TOTAL\_AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`

FROM

`game\_analysis`

INNER JOIN

(

SELECT

`game\_analysis`.`TEAM\_NAME` AS `TEAM\_NAME`,

SUM(WIN\_COUNT)\*100/SUM(GAME\_COUNT) AS `$\_\_alias\_\_0`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1

ORDER BY `$\_\_alias\_\_0` DESC,`TEAM\_NAME` ASC

LIMIT 5

) `t0`

ON (`game\_analysis`.`TEAM\_NAME` <=> `t0`.`TEAM\_NAME`)

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1,2;

-- Average 3 Point Goal Percentage of Bottom 5 Teams

SELECT

`game\_analysis`.`SEASON` AS `SEASON`,

`game\_analysis`.`TEAM\_NAME` AS `TEAM\_NAME`,

AVG(`game\_analysis`.`TOTAL\_AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`) AS `TOTAL\_AVERAGE\_3\_POINT\_GOAL\_PERCENTAGE`

FROM

`game\_analysis`

INNER JOIN

(

SELECT

`game\_analysis`.`TEAM\_NAME` AS `TEAM\_NAME`,

SUM(WIN\_COUNT)\*100/SUM(GAME\_COUNT) AS `$\_\_alias\_\_0`

FROM

`game\_analysis`

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1

ORDER BY `$\_\_alias\_\_0` ASC,`TEAM\_NAME` ASC

LIMIT 5

) `t0`

ON (`game\_analysis`.`TEAM\_NAME` <=> `t0`.`TEAM\_NAME`)

WHERE (`game\_analysis`.`SEASON` >= '2000')

GROUP BY 1,2;

-- PLAYER ANALYSIS

-- Player Salary Contract Type Distribution

SELECT

`player\_stats\_with\_salary`.`2021 - 2022 CONTRACT TYPE` AS `2021 - 2022 CONTRACT TYPE`,

COUNT(DISTINCT `player\_stats\_with\_salary`.`PLAYER\_ID`) AS `COUNT\_OF\_PLAYERS`

FROM

`player\_stats\_with\_salary`

INNER JOIN

`team\_winning\_stats\_with\_salary`

ON (`player\_stats\_with\_salary`.`TEAM\_ID` = `team\_winning\_stats\_with\_salary`.`TEAM\_ID`)

WHERE

(

(NOT ISNULL(`player\_stats\_with\_salary`.`2021 - 2022 SALARY`))

AND

(`team\_winning\_stats\_with\_salary`.`TEAM\_NAME` >= 'Atlanta Hawks')

AND

(`team\_winning\_stats\_with\_salary`.`TEAM\_NAME` <= 'Washington Wizards')

)

GROUP BY 1;

-- Player Points vs Salary

SELECT

`player\_stats\_with\_salary`.`PLAYER\_ID` AS `PLAYER\_ID`,

SUM(`player\_stats\_with\_salary`.`2021 - 2022 SALARY`) AS `2021 - 2022 SALARY`,

SUM(`player\_stats\_with\_salary`.`PTS`) AS `TOTAL POINTS`

FROM

`player\_stats\_with\_salary`

INNER JOIN

(

SELECT

`player\_stats\_with\_salary`.`TEAM\_ID` AS `TEAM\_ID`,

`player\_stats\_with\_salary`.`2021 - 2022 CONTRACT TYPE` AS `2021 - 2022 CONTRACT TYPE`,

`player\_stats\_with\_salary`.`2021 - 2022 SALARY` AS `2021 - 2022 SALARY`

FROM

`player\_stats\_with\_salary`

INNER JOIN

`team\_winning\_stats\_with\_salary`

ON (`player\_stats\_with\_salary`.`TEAM\_ID` = `team\_winning\_stats\_with\_salary`.`TEAM\_ID`)

WHERE

(

(`team\_winning\_stats\_with\_salary`.`TEAM\_NAME` >= 'Atlanta Hawks')

AND

(`team\_winning\_stats\_with\_salary`.`TEAM\_NAME` <= 'Washington Wizards')

)

GROUP BY 2,3,1

) `t0`

ON ((`player\_stats\_with\_salary`.`TEAM\_ID` = `t0`.`TEAM\_ID`) AND (`player\_stats\_with\_salary`.`2021 - 2022 CONTRACT TYPE` <=> `t0`.`2021 - 2022 CONTRACT TYPE`) AND (`player\_stats\_with\_salary`.`2021 - 2022 SALARY` <=> `t0`.`2021 - 2022 SALARY`))

WHERE

(

(`player\_stats\_with\_salary`.`2021 - 2022 CONTRACT TYPE` = 'Guaranteed')

AND

(NOT ISNULL(`player\_stats\_with\_salary`.`2021 - 2022 SALARY`))

)

GROUP BY 1;