

***IT - 214***

***DATABASE MANAGEMENT SYSTEMS***

***Title : - Military Database***

***Queries***

***Group Details***

|  |  |
| --- | --- |
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1. **List all the personnel with their pension.  
   We add 3% more to the existing pension of a personnel if he is martyred and has two dependents, 3.5% more if he has 3 dependents and 4% more if he has 4 or more dependents**

SELECT

p.ID,

p.Firstname || ' ' || p.Middlename || ' ' || p.Lastname AS Fullname,

p.Gender,

p.DateofBirth,

p.Rank,

p.ServiceStatus,

p.Martyred,

w.Salary,

COUNT(d.DependentName) AS NumDependents,

CASE

WHEN p.Martyred = 'yes' THEN

CASE

WHEN COUNT(d.DependentName) = 2 THEN (w.Salary) \* (w.rate + 3)/100

WHEN COUNT(d.DependentName) = 3 THEN (w.Salary) \* (w.rate + 3.5)/100

WHEN COUNT(d.DependentName) >= 4 THEN (w.Salary) \* (w.rate + 4)/100

ELSE w.Salary \* w.rate/100

END

ELSE

w.Salary \* w.rate/100

END AS Pension

FROM

Personnel p

JOIN

Work w ON p.ServiceName = w.ServiceName

LEFT JOIN

Dependents d ON p.ID = d.PersonnelID

Joins the result of the previous join with the 'Dependents' table based on the 'ID' column, ensuring that all personnel are included in the result, even if they don't have dependents.

GROUP BY

p.ID, p.Firstname, p.Middlename, p.Lastname, p.Gender, p.DateofBirth, p.Rank, p.ServiceStatus, p.Martyred, w.Salary,w.rate;

1. **Retrieve all equipment stored in locations with a specific status:**

SELECT Equipment.Name, Equipment\_Storage.Quantity

FROM Equipment

JOIN Equipment\_Storage

ON Equipment.EquipID = Equipment\_Storage.EquipID

JOIN Storage

ON Equipment\_Storage.Location = Storage.Location

WHERE Storage.Status = 'Full';

1. **List all strategic locations in a specific war and compute its status i.e. whether they are engaged or lost.**

SELECT

SL.Location,

W.Region AS War\_Region,

CASE

WHEN SUM(CASE WHEN P.Status = 'engaged' THEN 1 ELSE 0 END) > 0 THEN 'engaged'

WHEN COUNT(\*) = SUM(CASE WHEN P.Status IN ('missing', 'POW', 'martyred') THEN 1 ELSE 0 END) THEN 'lost'

ELSE 'unknown'

END AS Status

FROM

StrategicLocation SL

JOIN

pers\_is\_inawar P ON SL.Location = P.Location

JOIN

War W ON SL.Region = W.Region

WHERE

W.Region = 'Jammu and Kashmir'

GROUP BY

SL.Location, W.Region;

1. **Find all equipment manufactured after a certain delivery date:**

SELECT \* FROM EquipmentManufactured WHERE DeliveryDate > '2024-05-12';

1. **List all vehicles used in logistics on a specific route and date:**

SELECT LogisticsVehicles.Name, LogisticsVehicles.Type

FROM LogisticsVehicles

JOIN VehiclesusedinLogistics ON LogisticsVehicles.VehicleNo = VehiclesusedinLogistics.VehicleNo

WHERE VehiclesusedinLogistics.Route = 'Fazilka to Doklam to Petrapole' AND VehiclesusedinLogistics.Date = '2022-04-25';

1. **We want 67 M4 Carbine", 78 "M9 Pistol", 10 " M249 SAW", 89 "MQ-9 Reaper Drone", 56 "PP-19 Bizon", 140 "RIM-174 Standard Missile", 36 "MP40" for a mission. Check how many are actually available and how many are less**

WITH RequiredEquipment AS (

SELECT \*

FROM (VALUES

('M4 Carbine', 67),

('M9 Pistol', 78),

('M249 SAW', 10),

('MQ-9 Reaper Drone', 89),

('PP-19 Bizon', 56),

('RIM-174 Standard Missile', 140),

('MP40', 36)

) AS t(Name, RequiredQuantity)

)

SELECT

Equipment.Name,

Equipment.Quantity AS AvailableQuantity,

COALESCE(SUM(CASE WHEN Maintenance.EndDate > CURRENT\_DATE THEN Maintenance.Quantity ELSE 0 END), 0) AS UnderMaintenanceQuantity,

(Equipment.Quantity - COALESCE(SUM(CASE WHEN Maintenance.EndDate > CURRENT\_DATE THEN Maintenance.Quantity ELSE 0 END), 0)) AS RemainingQuantity,

RequiredEquipment.RequiredQuantity AS RequiredQuantity,

CASE

WHEN (Equipment.Quantity - COALESCE(SUM(CASE WHEN Maintenance.EndDate > CURRENT\_DATE THEN Maintenance.Quantity ELSE 0 END), 0)) >= RequiredEquipment.RequiredQuantity THEN 'Available'

ELSE 'Not Available'

END AS Availability

FROM

Equipment

JOIN

RequiredEquipment ON Equipment.Name = RequiredEquipment.Name

LEFT JOIN

Maintenance ON Equipment.EquipID = Maintenance.EquipID

GROUP BY

Equipment.Name, Equipment.Quantity, RequiredEquipment.RequiredQuantity;

1. **List the soldiers who have served in a mission and returned safely and also served in war and are engaged**

SELECT p.\*

FROM Personnel p

JOIN PersonAssociatedwithMission pam ON p.ID = pam.PersonID

JOIN Mission m ON pam.MissionCode = m.MissionCode

JOIN pers\_is\_inawar piw ON p.ID = piw.ID

JOIN War w ON piw.Location = w.Region

WHERE pam.FinalStatusforpers = 'SafeReturn'

AND piw.Status = 'Safe';

1. **Retrieve all missions led by a specific personnel:**

SELECT \* FROM Mission WHERE LeaderID = 35;

1. **Retrieve all personnel who are currently available:**

SELECT \* FROM Personnel WHERE ServiceStatus = 'Available';

1. **List all equipment currently stored in a specific location having a specific category and having quantity greater than a certain limit.**

SELECT Equipment.Name, Equipment.Category, Equipment\_Storage.Quantity

FROM Equipment

JOIN Equipment\_Storage ON Equipment.EquipID = Equipment\_Storage.EquipID

WHERE Equipment\_Storage.Location = 'Pathankot'

AND equipment\_storage.quantity >= 40

AND category = 'Firearms'

1. **Retrieve all personnel who are currently available:**

SELECT \* FROM Personnel WHERE ServiceStatus = 'Available';

1. **We want to check if 67 M4 Carbine", 78 "M9 Pistol", 10 " M249 SAW", 89 "MQ-9 Reaper Drone", 56 "PP-19 Bizon", 140 "RIM-174 Standard Missile", 36 "MP40" are available or not as they might be in maintenance and also we want to check if 3 "Boeing C-17" , 2 "Ashok Leyland FAT 6×6"and 2 "INS Vikramaditya" are available for the logistics of the above equipments**

WITH EquipmentAvailability AS (

SELECT

e.Name AS Equipment\_Name,

e.Quantity AS Total\_Quantity,

SUM(m.Quantity) AS Quantity\_In\_Maintenance

FROM

Equipment AS e

LEFT JOIN

Maintenance AS m ON e.EquipID = m.EquipID

LEFT JOIN is used here to ensure that all rows from the 'Equipment' table (e) are included in the result set, even if there are no matching rows in the 'Maintenance' table (m).

WHERE

e.Name IN ('M4 Carbine', 'M9 Pistol', 'M249 SAW', 'MQ-9 Reaper Drone', 'PP-19 Bizon', 'RIM-174 Standard Missile', 'MP40')

GROUP BY

e.Name, e.Quantity

),

LogisticsVehiclesAvailability AS (

SELECT

Name AS Vehicle\_Name,

SUM(CASE WHEN Availability = 'Available' THEN 1 ELSE 0 END) AS Total\_Available

FROM

LogisticsVehicles

WHERE

Name IN ('Boeing C-17', 'Ashok Leyland FAT 6×6', 'INS Vikramaditya')

GROUP BY

Name

)

SELECT

Equipment\_Name,

CASE

WHEN (Total\_Quantity - Quantity\_In\_Maintenance) >=

CASE

WHEN Equipment\_Name = 'M4 Carbine' THEN 67

WHEN Equipment\_Name = 'M9 Pistol' THEN 78

WHEN Equipment\_Name = 'M249 SAW' THEN 10

WHEN Equipment\_Name = 'MQ-9 Reaper Drone' THEN 89

WHEN Equipment\_Name = 'PP-19 Bizon' THEN 56

WHEN Equipment\_Name = 'RIM-174 Standard Missile' THEN 140

WHEN Equipment\_Name = 'MP40' THEN 36

ELSE 0

END THEN 'Available'

ELSE 'Not Available'

END AS Equipment\_Availability,

NULL AS Vehicle\_Name,

NULL AS Vehicle\_Availability

FROM

EquipmentAvailability

UNION ALL

SELECT

NULL AS Equipment\_Name,

NULL AS Equipment\_Availability,

Vehicle\_Name,

CASE

WHEN (CASE

WHEN Vehicle\_Name = 'Boeing C-17' THEN 3

WHEN Vehicle\_Name = 'Ashok Leyland FAT 6×6' THEN 2

WHEN Vehicle\_Name = 'INS Vikramaditya' THEN 2

ELSE 0

END - Total\_Available) >= 0 THEN 'Available'

ELSE 'Not Available'

END AS Vehicle\_Availability

FROM

LogisticsVehiclesAvailability;

1. **List all logistics routes transferred by a specific unit on a particular date:**

SELECT Route, ResourcesTransferred

FROM Logistics

WHERE UnitName = 'Navy' AND Date = '2022-04-11';

1. **List all units and their respective commanding officers:**

SELECT Unit.UnitName, Personnel.Firstname, Personnel.Lastname

FROM Unit

JOIN Personnel ON Unit.CommandingOfficerID = Personnel.ID;

1. **Find all personnel who received awards in a specific year:**

SELECT Personnel.Firstname, Personnel.Lastname, Awarded.AwardName

FROM Personnel

JOIN Awarded

ON Personnel.ID = Awarded.PersonnelID

WHERE Awarded.Year = 2023;

1. **List all maintenance records for a particular equipment:**

SELECT \* FROM Maintenance WHERE EquipID = 7;

1. **Retrieve all personnel associated with a specific mission:**

SELECT Personnel.Firstname, Personnel.Lastname

FROM Personnel

JOIN

PersonAssociatedwithMission

ON Personnel.ID = PersonAssociatedwithMission.PersonID

WHERE PersonAssociatedwithMission.MissionCode = 7;

1. **Find the total quantity of a specific equipment used by all units and also include how much quantity of equipment each unit uses**

SELECT

UnitName,

SUM(Quantity) AS TotalQuantityUsed

FROM

UnitusesEquipment

WHERE

EquipID = 31

GROUP BY

UnitName;

1. **List all strategic locations in a particular war region:**

SELECT \* FROM StrategicLocation

WHERE Region = 'Jammu and Kashmir';

1. **List all strategic locations in a specific war and compute its status i.e. whether they are engaged or lost.**

SELECT

SL.Location,

W.Region AS War\_Region,

CASE

WHEN SUM(CASE WHEN P.Status = 'engaged' THEN 1 ELSE 0 END) > 0 THEN 'engaged'

WHEN COUNT(\*) = SUM(CASE WHEN P.Status IN ('missing', 'POW', 'martyred') THEN 1 ELSE 0 END) THEN 'lost'

ELSE 'unknown'

END AS Status

FROM

StrategicLocation SL

JOIN

pers\_is\_inawar P ON SL.Location = P.Location

JOIN

War W ON SL.Region = W.Region

WHERE

W.Region = 'Jammu and Kashmir'

GROUP BY

SL.Location, W.Region;

1. **Retrieve all personnel who were were martyred in war:**

SELECT P.\*

FROM Personnel P

JOIN pers\_is\_inawar PIW ON P.ID = PIW.ID

WHERE PIW.Status = 'martyred';

1. **Find out the budget used and divide into the budget used for giving salary pension and used for equipments and then give remaining budget**

WITH SalaryPerPerson AS (

SELECT

p.UnitName,

SUM(w.Salary) AS TotalSalaryPerPerson

FROM

Personnel p

JOIN

Work w ON p.ServiceName = w.ServiceName

GROUP BY

p.UnitName, p.ID

),

TotalSalaryPerUnit AS (

SELECT

UnitName,

SUM(TotalSalaryPerPerson) AS TotalSalary

FROM

SalaryPerPerson

GROUP BY

UnitName

),

EquipmentCostPerUnit AS (

SELECT

u.UnitName,

SUM(e.PricePerUnit \* ue.Quantity) AS TotalEquipmentCost

FROM

Unit u

JOIN

UnitusesEquipment ue ON u.UnitName = ue.UnitName

JOIN

Equipment e ON ue.EquipID = e.EquipID

GROUP BY

u.UnitName

)

SELECT

u.UnitName,

u.BudgetAllocated AS TotalBudget,

ts.TotalSalary AS TotalSalary,

ec.TotalEquipmentCost AS TotalEquipmentCost,

(u.BudgetAllocated - ts.TotalSalary - ec.TotalEquipmentCost) AS RemainingBudget

FROM

Unit u

JOIN

TotalSalaryPerUnit ts ON u.UnitName = ts.UnitName

JOIN

EquipmentCostPerUnit ec ON u.UnitName = ec.UnitName;

1. **Retrieve the commanding officer of a specific unit:**

SELECT Personnel.\*

FROM Personnel

JOIN Unit ON Personnel.ID = Unit.CommandingOfficerID

WHERE Unit.UnitName = 'Army';

1. **Give total number of martyred, missing, pow and engaged soldiers for each strategic location for each war and hence give the total number of remaining alive soldiers also for that location**

SELECT

SL.Location,

W.Region AS War\_Region,

SUM(CASE WHEN P.Status = 'martyred' THEN 1 ELSE 0 END) AS Martyred,

SUM(CASE WHEN P.Status = 'missing' THEN 1 ELSE 0 END) AS Missing,

SUM(CASE WHEN P.Status = 'pow' THEN 1 ELSE 0 END) AS POW,

SUM(CASE WHEN P.Status = 'engaged' THEN 1 ELSE 0 END) AS Engaged,

SUM(CASE WHEN P.Status NOT IN ('martyred', 'missing', 'pow') THEN 1 ELSE 0 END) AS Remaining\_Alive

FROM

StrategicLocation SL

LEFT JOIN

pers\_is\_inawar P ON SL.Location = P.Location

LEFT JOIN

War W ON SL.Region = W.Region

GROUP BY

SL.Location, W.Region;

1. **Retrieve all intelligence records used in a specific mission:**

SELECT IntelligenceRecords.IntelRecordName

FROM IntelligenceRecords

JOIN MissionUsesIntelligenceRecords ON IntelligenceRecords.IntelRecordName = MissionUsesIntelligenceRecords.Name

WHERE MissionUsesIntelligenceRecords.MissionCode = 3;

1. **Find the total number of personnel dependents for each personnel:**

SELECT Personnel.ID, COUNT(Dependents.DependentName) AS DependentCount

FROM Personnel

LEFT JOIN Dependents ON Personnel.ID = Dependents.PersonnelID

GROUP BY Personnel.ID;

1. **Give unitwise allocation of budget, also include the total budget and the percentage of total budget each unit gets**

WITH TotalBudget AS (

SELECT SUM(BudgetAllocated) AS TotalBudget

FROM Unit

)

SELECT

u.UnitName,

u.BudgetAllocated,

tb.TotalBudget,

ROUND((u.BudgetAllocated \* 100.0 / tb.TotalBudget), 2) AS PercentageOfTotalBudget

FROM

Unit u

CROSS JOIN

TotalBudget tb;

1. **Retrieve all personnel who participated in training camps with special abilities found:**

SELECT Personnel.Firstname, Personnel.Lastname

FROM Personnel

JOIN TrainingRecords

ON Personnel.ID = TrainingRecords.PersonnelID

WHERE TrainingRecords.SpecialAbilityFound IS NOT NULL;

1. **List all equipment ordered by a particular unit:**

SELECT EquipmentManufactured.EquipName

FROM EquipmentManufactured

JOIN UnitOrderedEquipment ON EquipmentManufactured.EquipName = UnitOrderedEquipment.EquipName

WHERE UnitOrderedEquipment.UnitName = 'Army';