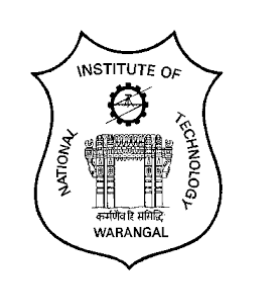
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Military Database Management System

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### DBMS Project Problem Statement

In this project, a database management system is designed to store the information of Soldiers. The database will be accessible to government and military administrators.

This database contains the personal details of soldiers, their family information, posting of soldiers, information about troops, available military vehicles and weapons, medical supplies and the awards and honors conferred upon the soldiers for their contributions on and off the battlefield.

This will help the officials to access various information quickly and provide resources to the military on time. It will also help in keeping track of all the weapons and supplies being used during wartime and show the requirements of weapons. We can efficiently find soldiers who are currently serving in a particular regiment and also the soldiers who have served in previous operations.

ER Model Assumptions

● A Soldier can participate in at most one operation while an operation can involve multiple numbers of soldiers. Each Operation must involve some soldier hence Total participation.   
● A Soldier is given a salary on the basis of his Rank/Position in the Army.   
● Multiple Soldiers are grouped to form a regiment. Each Soldier must be a part of one or the other regiment hence there is a total participation of Soldiers in this relationship.  
● A Soldier can be honored by multiple medals and a particular medal can be awarded to multiple numbers of Soldiers hence there is a M:N relationship between the two entities.  
● Each Soldier has a family whose details are stored in the form of Father’s name, Number of children and his/her marital status.  
● There are three inventories which belong to a particular regiment namely – Weapons inventory, Vehicle Inventory and Equipment Inventory.   
● A Soldier’s posting information involves the period of time for which he/she was or will be posted in that particular region. The period of time for which the Soldier is posted will already be predefined by the Army (We already know the deadline date in the future).   
● There is a Location table which will serve two purposes – Storing the detailed address of the Soldier and storing the detailed address of all the places where a Soldier has been posted.

ER Model

Functional Dependencies

**1) Soldier -**

SoldierID -> {Sname, DOB, DOJ, Weight, Height, Gender, District, RegimentCode, Srank}

SoldierID determines the relation. Since all the fields depend on SoldierID, (SoldierID)+ -> R. Thus SoldierID is the Primary Key.

2) **Regiment** -

RegimentCode -> {Rname, HQCity, CurrStrength, MaxStrength, CommanderID}

RegimentCode determines the relation. Since all the fields depend on RegimentCode, (RegimentCode)+ -> R. Thus RegimentCode is the Primary Key.

3) **Location** -

District -> {State, Country}

District determines the relation. Since all the fields depend on District, (District)+ -> R. Thus the District is Primary Key.

4) **Family**-

{FatherName, SoldierID} -> {Children, MaritalStatus}

{FatherName, SoldierID} determines the relation. Since all the fields depend on {FatherName, SoldierID}, ({FatherName, SoldierID})+ -> R. Thus {FatherName, SoldierID} is Primary Key.

**5) Posting relation**

This is relationship table between Soldier and Location table. It has two foreign keys SoldierID from Soldier table and District from Location table.

**6) Medals**

MedalID -> {MedalName, Prize}

MedalID determines the relation. Since all the fields depend on MedalID, (MedalID)+ -> R. Thus MedalID is the Primary Key.

**7) Honors relation**

This is relationship table between Soldier and Medals table. It has two foreign keys SoldierID from Soldier table and MedalID from Medals table.

**8) Salary**

Srank->salary

Srank determines the relation. Since all the fields depend on Srank, (Srank)+ -> R. Thus Srank is Primary Key.

**9) Weapons\_Inventory**

{RegimentCode, WeaponID} -> Quantity

{RegimentCode, WeaponID} determines the relation.Since all the fields depend on {RegimentCode, WeaponID}, ({RegimentCode, WeaponID})+ -> R. Thus {RegimentCode, WeaponID} is Primary Key.

**10) Vehicle\_Inventory**

{RegimentCode, VehicleID} -> Quantity

{RegimentCode, VehicleID} determines the relation.Since all the fields depend on {RegimentCode, VehicleID}, ({RegimentCode, VehicleID})+ -> R. Thus {RegimentCode, VehicleID} is Primary Key.

**11) Equipment\_Inventory**

{RegimentCode, VehicleID} -> Quantity

{RegimentCode, VehicleID} determines the relation.Since all the fields depend on {RegimentCode, VehicleID}, ({RegimentCode, VehicleID})+ -> R. Thus {RegimentCode, VehicleID} is Primary Key.

**12) Weapon**

WeaponID->{Wname, Wtype}

WeaponID determines the relation.Since all the fields depend on WeaponID, (WeaponID)+ -> R. Thus WeaponID is the Primary Key.

**13) Vehicle**

VehicleID->{Vname, Vtype, FuelType, ManYear}

VehicleID determines the relation.Since all the fields depend on VehicleID, (VehicleID)+ -> R. Thus VehicleID is the Primary Key.

**14) Equipment**

EquipmentID -> {Ename, Etype}

EquipmentID determines the relation.Since all the fields depend on EquipmentID, (EquipmentID)+ -> R. Thus EquipmentID is Primary Key.

**15) Operations**

OperationCode->{Oname, StartDate, EndDate,Outcome}

OperationCode determines the relation.Since all the fields depend on OperationCode, (OperationCode)+ -> R. Thus OperationCode is Primary Key.

Relational Schema



