



DBMS Project : IIITDefenseDB

Group 55

Arnav Tandon | 2018278

Sarandeep Singh | 2018364

Nitesh Jaiswal | 2018400

Nipun Jain | 2018058

Vipul Kesari | 2018118

Week 1 :

List of ideas for DBMS project

- *Defense Database System -*

1)Our country is proceeding to a defence forces asked to give serious thought to up- grading technological skills. A cloud database which can store all unclassified information about things like inventory list and medicine stock of each military base can be saved in a cloud. This will be accessible from anywhere easily and provide access to find that there is any lack of food or medical resources.

2)This database contains the department, sting operations and dependent details. Basically this project gives a view on how a database can be managed.

3)This database contains some trivial information regarding national security, so as expected it cannot be disclosed to the General public, and can only be in the reach of Higher ranked Government Officials, soldiers of Indian Army (classification will be made), Army Officials (Field Marshals, General, Colonel, etc).

- *SuperStore Sales-*

1)Super store is an Indian retail store that operates as a chain of hypermarkets.

2)It is one of the oldest and largest hypermarket chains of India, housing about 150+ stores over 60 cities and towns of the country. It has a wide range of

categories such as Groceries, Clothing & Fashion, Furniture, Electronics, Office Supplies, Cosmetics, Kitchen & Dining utilities and many more.

3) Objectives of superstore sales are - Maintains the details of Sales by Store/Region/State, Profits/Sales Analytics, etc.

- *Gaming store-*

1) The objective of this application is to maintain records of the different products in the Video Game store as an inventory system, the customers of the store and keeping track of their order history including the order status. Thus this application serves the purpose of an inventory and a transactional system that can be used by the staff, inventory administrator and the customers.

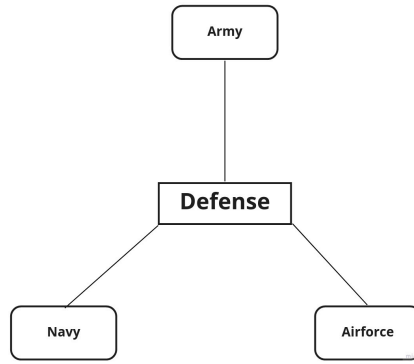
2) This application shows the list of different products available in the game store. This allows for a systematic organization of the store's inventory, order history and products purchased. The application enables the customers to view the status of the orders they placed. As the products are ordered/ when any order is aborted, the inventory status is updated with the current count of products present.

- *Music Store-*

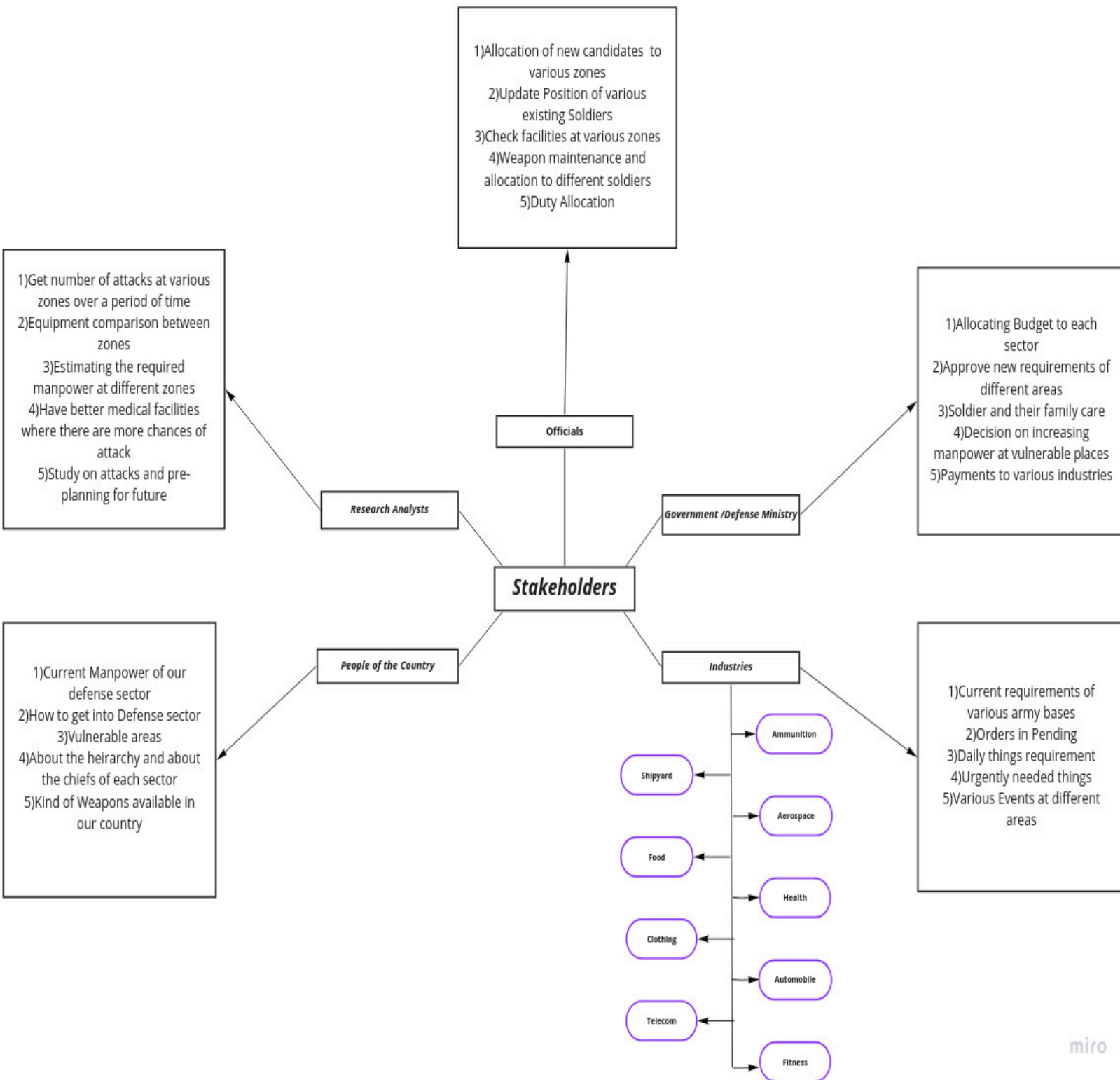
1) A customer can choose a song that he wishes to purchase based on many criteria including provided to him which include genre, the name of the artist, the track length and many other such criterion. The customer, if he desires so, can choose a combination of them in order to fulfil his requirements.

2) The Music Library is designed in such a way that it hits two with a stone. Firstly, by storing the details of the songs that have been purchased by the customer earlier, it gathers enough data that suggests music that suits their preferences. Secondly, by collecting data of the sales and the location of the customers, the supplier can identify his potential targets and take steps that will help him propagate his ideas.

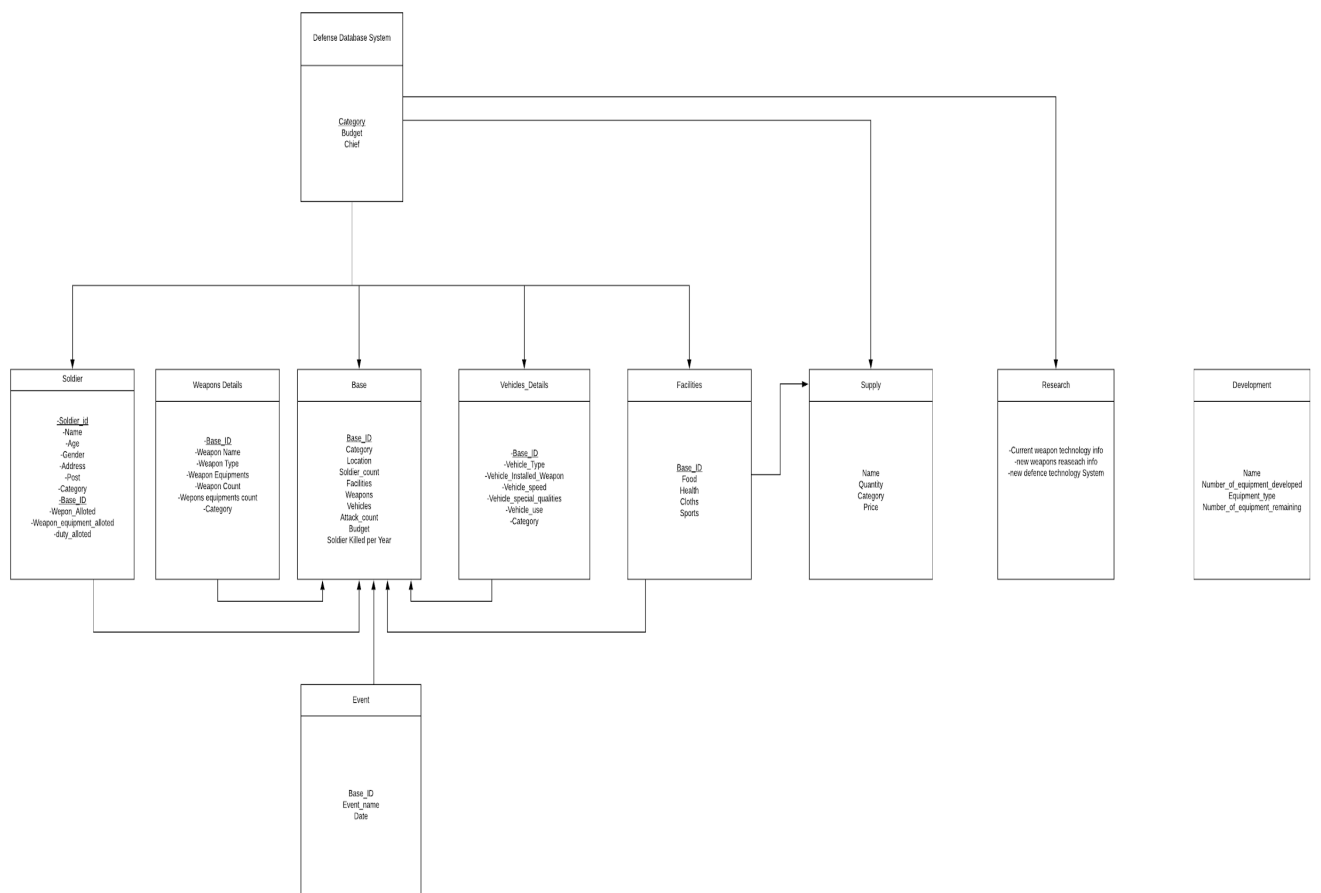
We decided to go ahead with Defense Database System



Week 2 :



Week 3 :



Relations	primary key
Soldier	soldier_id
Weapons details	weapon type
Base	Base_id
Vehicles_details	vehicle_id
Event	event name
Facilities	facility_id
Supply	supply_id
Research	research_id
Development	development_id
DDBMS	category

-> Here we are going to use base_id as foreign key in many relations. We will reference the base relation for data. There are many other keys which are the candidates for being the primary key, we did not consider them right now but we will add them later.

Tables to be created :

1) Defense Database System

1. Category Primary Key <CHAR>
2. Budget not null <INT>
3. Chief not null <CHAR>

2) Soldier

1. Soldier_id Primary Key <INT>
2. Name not null <CHAR>
3. Age not null <INT>
4. Gender not null <CHAR>
5. Address not null <VARCHAR>
6. Post <CHAR>
7. Category not null <VARCHAR>
8. Base_ID not null <VARCHAR>
9. Weapon_Alloted <VARCHAR>
10. Weapon_equipment_alloted <CHAR>
11. Duty_alloted not null <VARCHAR>

3) Weapon Details

1. Base_ID not null <INT>

2. Weapon_Name not null <VARCHAR>
3. Weapon_Type Primary key <VARCHAR>
4. Weapon_Count not null <INT>
5. Weapons_Equipment_Count not null <INT>
6. Category not null <VARCHAR>

4) Base

1. Base_ID Primary key not null <INT>
2. Category not null <VARCHAR>
3. Location not null <CHAR>
4. Soldier_Count not null <INT>
5. Facilities not null <CHAR>
6. Vehicles not null <VARCHAR>

Attack_Count not null <INT>

7. Budget not null <INT>
8. Soldier_Killed not null <INT>

5) Vehicles_Details

1. Base_ID not null <INT>
2. Vehicle_ID Primary Key <INT>
3. Vehicle_Installed_Weapon <VARCHAR>
4. Vehicle_Speed not null <INT>
5. Vehicle_Special_Qualities <CHAR>
6. Vehicle_Use not null <VARCHAR>
7. Category not null <VARCHAR>

6) Facilities

1. Base_ID not null <INT>
2. Food not null <VARCHAR>
3. Health not null <VARCHAR>
4. Clothes not null <VARCHAR>

7) Supply

1. Name not null <CHAR>
2. Quantity not null <INT>
3. Category not null <VARCHAR>
4. Price not null <INT>

8) Research

1. Current_Weapon_TechInfo <CHAR>
2. New_Weapon_Info <CHAR>
3. Research_ID <INT>

9) Development

1. Development_ID Primary Key <INT>
2. Name <VARCHAR>
3. Number_of_equipment_developed not null <INT>
4. Equipment_type not null <VARCHAR>
5. Number_of_equipment_remaining not null <INT>

10) Event

1. Base_ID not null <INT>
2. Event_name Primary Key <CHAR>
3. Date not null <VARCHAR>

Data Entries to be created:

1) Defense Database System

```
INSERT INTO "Defense"(category,budget,chief)VALUES('Aeronautical Development Agency',234,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Defence Intelligence Agency',178,'B')
INSERT INTO "Defense"(category,budget,chief)VALUES("Army intelligence Agency",563,"B")
INSERT INTO "Defense"(category,budget,chief)VALUES('Border Intelligence Agency',987,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Armed Force Agency',689,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Navy Radio Signal Agency',100,'C')
INSERT INTO "Defense"(category,budget,chief)VALUES('Radar Agency',65,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Radio Processing Agency',89,'B')
INSERT INTO "Defense"(category,budget,chief)VALUES('Military Agency',78,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Directorate of Air Intelligence',78,'C')
INSERT INTO "Defense"(category,budget,chief)VALUES('Joint Cipher Bureau',69,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Director of Naval Agency',25,'B')
INSERT INTO "Defense"(category,budget,chief)VALUES('All India Radio Monitoring System',69,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Intelligence Bureau',698,'B')
INSERT INTO "Defense"(category,budget,chief)VALUES('Radio Research Centre',54,'A')
INSERT INTO "Defense"(category,budget,chief)VALUES('Department of Enforcement',96,"B")
```

2) Soldier

```
INSERT INTO
"Soldier"(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1013,'Arjun
Pratap',35,'Male','Delhi',,'Army',1,'UMP-45','QuickDraw Mag')
INSERT INTO
"Soldier"(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
```



```

weapon_equipment_alloted,duty_allotted)VALUES(1014,'Karan
Jagtap',36,'Male','UP',,'Airforce',2,'Nova','Extended Mag')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1015,'Jaspreet Singh
Kaur',32,'Female','Punjab',,'Navy',3,'Desert-Eagle','6X-scope')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1016,'Vijay Kumar
Ahirwar',34,'Male','MP',,'Army',4,'P250','suppressor')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1017,'Brijmohan
Singh',36,'Male','Punjab',,'Special Force',5,'M249','6x-scope')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1018,'Amit
Goel',37,'Male','Mumbai',,'Airforce',6,'Sawed off','Extended Mag')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1019,'Ajay
Singh',38,'Male','Punjab',,'Army',7,'Mag-47','Quick succession')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1020,'Saurabh
Pandit',34,'Male','Jaipur',,'Navy',8,'Glock-18','QuickDraw Mag')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1021,'Tanmay
Bhatt',35,'Male','Delhi',,'Marine Corps',9,'Dual-Berettas','Extended Mag')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1022,'Sarandeep
Singh',38,'Male','Punjab',,'Army',10,'R8-Revolver','Extended QuickDraw Mag')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1023,'Virat Kohli',34,'Male','Delhi',,'Coast
Guard',11,'UMP-45','Suppressor')
INSERT INTO
“Soldier”(sodier_id,name,age,gender,address,post,category,base_id,weapon_allotted,
weapon_equipment_alloted,duty_allotted)VALUES(1024,'Rajesh
Kumar',29,'Male','Mumbai',,'Army',12,'P250','Extended Mag')

```

3) Weapons

```
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1053, 'Glock-18', 'Machine Pistol', 20, 'QuickDraw Mag', 'HandGun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1054, 'Dual Berettas', 'Machine Pistol, 20, 'Extended Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1055, 'P250', 'Machine Pistol, 20, 'Extended Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1056, 'Tec-9','Semi-Automatic Pistol, 20, 'Extended QuickDraw Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1057, 'CZ75-Auto','Automatic Pistol, 20, 'Extended QuickDraw Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1058, 'Desert Eagle','Semi-Automatic Pistol', 20, 'Extended QuickDraw Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1059, 'R8 Revolver','Semi-Automatic Pistol', 20, 'Extended QuickDraw Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1060, 'USP-S','H&K USP45 Tactical',22,'QuickDraw Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1061, 'P2000','German Semi-Automatic Pistol', 20, 'Extended QuickDraw Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1062, 'Five-Seven','Semi-Automatic Pistol', 20, 'Extended QuickDraw Mag', 'Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1063, 'Nova','Shotgun',35,'Quick succession ','Pump-Action');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1064, 'XM1014','Italian semi-automatic shotgun',38,'Quick succession','Pump-Action');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1065, 'Sawed-Off','break-open shotgun',36,'Quick succession','Handgun');
```

```

INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1066, 'M249','Light Machine Gun',100,'6x-Scope','Assault-Rifles');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1067, 'Negev','Light Machine Gun',100,'6x-Scope','Assault-Rifles');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1068, 'MAG-7','Shotgun',35,'Quick succession ','Pump-Action');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1069, 'MAC-10','Machine Pistol',40,'Suppressor','Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1070, 'MP7','personal defence weapon',55,'Suppressor','Handgun');
INSERT INTO "weapons"
(base_id,weapon_name,weapon_type,weapon_count,weapon_equipment,category) VALUES
(1071, 'UMP-45','personal defence weapon',55,'Suppressor','Handgun');

```

4) Vehicles

```

INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1053,V01,'Anti-Aircraft Trailer',30Km/hr,'Automated machine gun','strong armour')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1054,V02,'APC',120Km/hr,, 'RPG','powerful engine')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1055,V03,'Rhino',135Km/hr,'Bomber','misogynistic')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1056,V04,'RCV',142Km/hr,'Automated machine gun','strong armour')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1057,V05,'Tank',145Km/hr,'RPG','heavy firepower')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1058,V06,'Fire Truck',180Km/hr,'Bomber','heavy firepower')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1059,V07,'S.W.A.T',140Km/hr,'Automated machine gun','strong armour')

```

```

INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1060,V08,'Tiger Tank',100Km/hr,'RPG','powerful engine')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1061,V09,'Avenger',120Km/hr,'Bomber','heavy firepower')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1062,V10,'Rogue',95Km/hr,'Automated machine gun','strong armour')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1063,V11,'Seabreeze',99Km/hr,'RPG','powerful engine')
INSERT INTO "vehicles"
(base_id,vehicle_id,vehicle_installed_weapon,vehicle_speed,vehicle_special_qualities,vehicle_
use)VALUES(1064,V12,'Valkyrie',127Km/hr,'Bomber','misogynistic')

```

5) Base

```

INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (1,'Ahmedabad Cantonment',14713,520,'60 c',500);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (2,'Ambala Cantonment',55370,1020,'80 c',10000);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (3,'Barrackpur Cantonment',17380,300,'100 c',1000);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (4,'Chakrata Cantonment',3490,100,'10 c',400);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (5,'Clement Cantonment',19634,490,'20 c',260);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (6,'Delhi Cantonment',116352,1000,'160 c',50000);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (7,' Dalhousie cantonment',1962,50,'10 c',50);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (8,'Danapur Cantonment',28149,1000,'55 c',500);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (9,'Faizabad Cantonment',78890,670,'80 c',500);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed) VALUES
(10,'JabalPur Cantonment',66482,780,'60 c',570);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (11,'Assumption island',20,50,'5 c',20);
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (12,'Hisar Military Station',23336,520,'70 c',7800);

```

```
INSERT INTO "Base" (Base_id,location,Soldier_count,Attack_count,Budget,Soldier_killed)
VALUES (13,'uri',124713,820,'60 c',9800);
```

6)Facilities

```
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (1,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (2,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (3,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (4,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (5,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (6,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (7,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (8,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (9,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (10,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (11,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (12,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (13,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (14,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (15,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (16,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (17,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (18,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (19,Yes,Yes,Yes);
INSERT INTO "Facilities" (Base_ID,Food,Health,Clothes) VALUES (20,Yes,Yes,Yes);
```

7)Development

```
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equipment_remaining) VALUES (1001,'Dual Berettas',850,'pistol',250);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equipment_remaining) VALUES (1002,'P250',1850,'pistol',850);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equipment_remaining) VALUES (1003,'Tec-9',98,'pistol',50);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equipment_remaining) VALUES (1004,'USP-S',8250,'pistol',100);
```

```

INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1005,'Five-Seven',100,'pistol',20);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1006,'Nova',850,'Heavy',50);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1007,'XM1014',780,'Heavy',580);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1008,'Sawed-Off',70,'Heavy',100);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1009,'M249',847,'Heavy',263);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1010,'MAg-7',8650,'Heavy',936);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1011,'Negev',4506,'Heavy',5069);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1012,'MAC-10',9878,'Submachine gun',5025);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1013,'MP7',9828,'Submachine gun',525);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1014,'UMP-45',99687,'Submachine gun',3625);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1015,'UMP-45',9878,'Submachine gun',5025);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1016,'PP-Bizon',98756,'Submachine gun',55);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1017,'Galil AR',265,'rifles',36);
INSERT INTO "Development"
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip
ment_remaining) VALUES (1018,'AK-47',10078,'rifles',15025);

```

```
INSERT INTO "Development"  
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip  
ment_remaining) VALUES (1019,'SSG 08',928,'rifles',355);  
INSERT INTO "Development"  
(Development_ID,Name,Number_of_equipment_developed,Equipment_type,Number_of_equip  
ment_remaining) VALUES (1020,'AWP',78,'rifles',5985);
```

8) Event

```
INSERT INTO "Event"(base_id,event_name,date)VALUES(1051,'INDIAN ARMY  
Supporters',14th Sep)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1052,'PACE'20',2020-08-15)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1053,'Recruitment  
Rally',2020-09-01)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1054,'INDIAN ARMY  
Supporters',14th Sep)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1055,'PACE'20',2020-08-15)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1056,'Recruitment  
Rally',2020-09-01)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1057,'INDIAN ARMY  
Supporters',14th Sep)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1058,'PACE'20',2020-08-15)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1059,'INDIAN ARMY  
Supporters',14th Sep)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1060,'PACE'20',2020-08-15)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1061,'Operation  
Karuna',2018-11-19)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1062,'INDIAN ARMY  
Supporters',14th Sep)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1063,'INDIAN AIR FORCE  
INDUCTS ANOTHER BATCH OF YOUNG LEADERS',2020-09-01)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1064,'Recruitment  
Rally',2020-09-01)  
INSERT INTO "Event"(base_id,event_name,date)VALUES(1065,'INDIAN ARMY  
Supporters',14th Sep)
```

9)Supply

```
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Helmet",1000,"Clothes",1200)
```

```

INSERT INTO "Supply"(name,quantity,category,price)VALUES("Shoes",2000,"Clothes",1000)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Milk",10000,"Food",20500)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Bread",13702000,"Food",20)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Dolo",30000,"Medicine",50)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Tshirt",1000,"Clothes",1200)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Pants",2000,"Clothes",1000)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Water Bottle",10000,"Food",)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Maida",13702000,"Food",20)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Citizen",30000,"Medicine",50)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Gloves",3500,"Clothes",800)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Juice",10000,"Food",250)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Cereal",2000,"Food",20)
INSERT INTO "Supply"(name,quantity,category,price)VALUES("Honitus",30000,"Medicine",50)

```

10)Research

```

INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("UMP-45","Navy")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("SMP-65","Army")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("SLP-98","Navy")
INSERT INTO "Research"(current_weapon_info, new_weapon_info
)VALUES("POT-989","Army")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("LOP-58","Army")
INSERT INTO "Research"(current_weapon_info, new_weapon_info
)VALUES("LPO-365","Navy")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("KLJ-020","Navy")
INSERT INTO "Research"(current_weapon_info, new_weapon_info
)VALUES("UMP-64","AirForce")
INSERT INTO "Research"(current_weapon_info, new_weapon_info
)VALUES("JET-698","AirForce")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("POI=25","Army")
INSERT INTO "Research"(current_weapon_info, new_weapon_info
)VALUES("UJH-65","AirForce")
INSERT INTO "Research"(current_weapon_info, new_weapon_info
)VALUES("LOP-698","Navy")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("KLI-98","Army")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("UMP-69","Navy")
INSERT INTO "Research"(current_weapon_info, new_weapon_info
)VALUES("KLO-897","AirForce")
INSERT INTO "Research"(current_weapon_info, new_weapon_info )VALUES("OPI-35","Army")

```

Week 5:

Mid sem Project evaluation and we worked upon the feedback given to us by our TA Gourab Bhaiya.

Designed a Logo :



Week 6 :

Indexing is used to optimize our database for reducing the retrieval time but at the same time it increases the size of our dataset.

Keeping all these things in mind we have implemented indexing mainly on the Functions that require extensive searching in our database. These are Soldiers and Base.

```
CREATE INDEX index_base ON base(Base_ID) // for the base
CREATE INDEX index_soldier ON soldiers(soldier_id) // for the soldier
```

Relational Algebraic Queries -

1. Select Base with Base_Chief name "XYZ"

$$\sigma_{\text{Base_Chief} = \text{"XYZ"}}(\text{Base})$$

2. Select soldiers with age between 25 and 40

$$\sigma_{\text{Age} \geq 25 \wedge \text{Age} \leq 40}(\text{Soldier})$$

3. Select all the bases of Army

$\sigma_{\text{Category} = \text{"Army"}}(\text{Base})$

4. Select the names of all rifles from weapons

$\Pi_{\text{Wepon_Name}}(\sigma_{\text{Weapon_ID} = \text{"Rifle"}}(\text{Weapons}))$

5. Select all Pending Transfers

$\sigma_{\text{Status} = \text{"Pending"}}(\text{Transfer})$

6. Select all orders that costed more than 5000

$\sigma_{\text{Order_Cost} > 500}(\text{Supply})$

7. Select every vehicle that can seat more than 10 people

$\sigma_{\text{Vehicle_Capacity} > 10}(\text{Vehicles})$

8. Select every soldier of the base 100

$\sigma_{\text{Base_ID}=100}(\text{Soldier})$

9. List the name of Soldiers who are older than 30

$\Pi_{\text{Name}}(\sigma_{\text{Age}>30}(\text{Soldier}))$

10. List the name of all soldiers who serve Army.

$\Pi_{\text{Name}}(\sigma_{\text{Category} = \text{"Army"}}(\text{Soldier}))$

Week 7 :

Embedded Queries :

[Embedded Queries](#)

[Link:https://docs.google.com/document/d/1Wb8yJo-2zERw1gvYzzLIS2_2y0csaKkQrgVkc-dET9E/edit?usp=sharing](https://docs.google.com/document/d/1Wb8yJo-2zERw1gvYzzLIS2_2y0csaKkQrgVkc-dET9E/edit?usp=sharing)

Advanced aggregation functions, etc supporting application features.

Show all soldiers in group by particular base

- select Name,Base_ID from Soldier where Soldier_ID in (select S.Soldier_ID from Soldier as S group by S.Base_ID);

Base having maximum numbers of Soldiers Killed

- select B1.Base_ID from Base as B1 where B1.soldier_killed in (select max(B.Soldier_Killed) from Base as B);

Weapons at a particular Base

- select * from Weapon Details as W where W.Base_ID in (select B1.Base_ID from Base as B1 where B1.Base_ID = (input));

Vehicles at a particular Base

- select * from Vehicles as V where V.Base_ID in (select B1.Base_ID from Base as B1 where B1.Base_ID = (input));

Most Vulnerable Base

- select B1.Base_Chief,B1.Base_ID from Base as B1 where B1.Attack_Count in (select max(B.Attack_Count) from Base as B);

For stats of soldiers except name and soldier_id

- create temporary table temp select * from Soldier;
alter table temp drop Soldier_Id;
alter table temp drop Name;
select * from Soldier where Age >25 and Gender = "male"
and Post="officer";
drop table temp;

Getting distinct Soldier Post:

- select distinct Post from Soldier;

Getting the number of soldiers in a particular base:

- Select COUNT(*) from Soldier where Base_ID = (input);

Getting the number of Soldiers grouped by defence line:

- Select COUNT(*) from Soldier GROUP BY Category;

Getting the total number of soldiers combined in every category of defense

- Select Count(*) from Soldier;

For the total number of soldiers ever killed grouped by defence line

- Select SUM(Soldier_Killed) from Base GROUP BY Category;

For the total number of soldiers ever killed

- Select SUM(soldier_Killed) from Base;

For the sum of money used in buying supplies in a base

- Select SUM(Order_Cost) from Supply where Base_ID = (input);

For the sum of weapons in a particular base

- Select SUM(Weapon_count) from Weapons where Base_ID = (input);

Getting the average age of the soldiers in a particular base

- Select AVG(Age) from Soldier where Base_ID = (input);

Getting the average budget of a base grouped by defence line

- Select AVG(Budget) from Base GROUP BY Category;

Getting the average Cost of the Order_Cost in a particular base

- Select AVG(Order_Cost) from Soldier where Base_ID = (input);

Getting the average of Number of weapons at a particular base

- Select AVG(Weapon_Count) from Weapon Details where Base_ID = (input);

Base with highest Budget requirement

- select max(Budget) from Base;

Item that is most expensive

- select max(Cost) from Essential Items;

Base which is most attacked

- select max(Attack_Count) from Base;

Find youngest soldier

- select min(Age) from Soldier;

Details of vehicle that can seat maximum soldiers

- select max(Vehicle_Capacity) from Vehicles;

Top 5 Bases having maximum Attack_Count+Soldiers_Killed from Army and Navy

```
select B.Base_Chief ,B.Base_ID from Base as B where  
B.Base_Id in (select  
B1.Base_ID from Base as B1 where (B1.Category="Army" or B1.Category = "Navy" )) order by  
Attack_Count+Soldier_Killed desc limit 5;
```

```
select B.Base_ID from Base as B where  
B.Base_Id in (select max(B1.Soldier_Killed + B1.Attack_Count) from  
Base as B1);
```

For buying new supplies and adding bills to the database for essential supplies

- insert into Supply values (Order_ID, Base_ID, Base_Address, Order_Cost, Purchase_Date, Delivery_Date)
- insert into Transactions values (Transaction_ID, Cost, Date)

(Atomic queries)

- select count(*) from Base;
- select count(*) from Soldier;
- select count(*) from Weapons;
- select count(*) from Vehicles;
- select count(Bill_ID) from Bill;
- select sum(Total) from Bill;
- select VARIANCE(Order_Cost) from Supply;
- select STDDEV(Price) from Essential Items;
- select STDDEV(Budget) from Base;

For adding new weapon details

- insert into Weapons values (Base_ID, Weapon_Name, Weapon_ID, Weapon_Type, Weapon_Count, Weapons_Bullet_Count)

For adding new vehicle details

- insert into Vehicles values (Base_ID, Vehicle_ID, Vehicle_Installed_Weapon, Vehicle_Special_Qualities, Vehicle_Capacity, Category)

Updating accepted transfer and changing the Base_ID of the soldier.

- update Transfer set Status = "Accepted" where Transfer_ID = (input)
- update Soldier set Base_ID = (to from transfer) where Soldier_ID = (input)

Query to reject transfer

- update Transfer set Status = "Rejected" where Transfer_ID = (input)

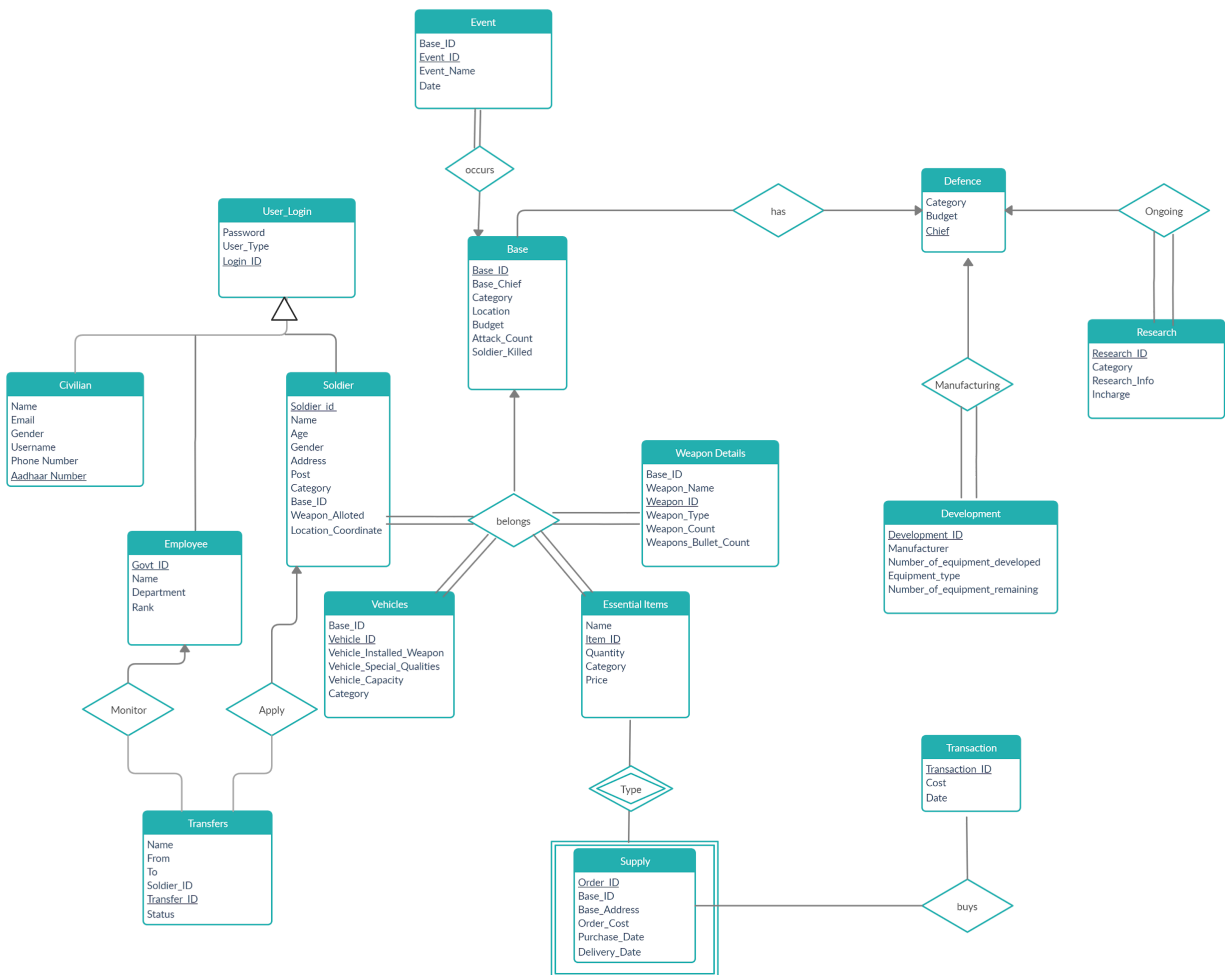
Week 8 :

Database normalization is the process of structuring a relational database in accordance with a series of so-called normal forms in order to reduce data redundancy and improve data integrity.

Normalization Changes done -

1. Removed Weapon Cart Table. And make a new table containing supply_id*order_id.
2. Remove Budget from Base table. Make a new table Budget*category.
3. Remove Base_ID, Orde_Cost, Payment_ID from Supply table. Make a new table for base_id*order*id.

4. Remove Supplier_ID from Transaction table. Make a new table item_id*supplier_id.
5. Remove Item_ID,Base_ID from Transaction table. Make a new table Item_id*base_id



Week 9 :

Innovative Ideas for Bonus :

- 1) Chatbox Option : So the Chatbox option allows the user to get Information about the Defense exams and about the details of the job, exam syllabus, physical fitness requirement, exam date etc. As many of the people, generally the youth are really excited about being part of the Defense force of the country.
- 2) All the Base_Chief will get monthly Reports of the Base denoting the various parameters like Attack count, soldiers killed, Essential items, weapons,vehicles count etc for the betterment of the base and further developments.

Group Name : IIITDefence

Roles

1. Arnav Tandon : Idea formulation,Wrote the introduction and roles of stakeholders,identification of stakeholders,formulating questions for stakeholders,identification of data entities for the tables,Making ER Diagram, Writing Relational algebra Queries, Writing (potentially) embedded sql queries, Design Ideas for website and Innovative ideas, Logo Design.
2. Vipul Kesari: Data Collection,Making Csv Files,Coding,Data filling,Looked different sites for data, Data about different base, created Table, Web Developing , Programming, Redefined queries for programming.Data entries , Creating Database.
3. Sarandeep Singh: Idea, Making Schema, Creating tables in SQL, Making ER Diagram, Writing Relational Algebra Queries, Writing (potentially) Embedded SQL Queries.
4. Nipun Jain: Data Collection,Making Csv Files,Coding,Data filling,Looked at different sites for data, Data about different base, created Table, Web Developing , Programming,Making Frontend website including chatbox and product cards,Design Ideas for website and Innovative ideas.
5. Nitesh Jaiswal: Making Schema, Creating tables in SQL, data collection, web development, Connecting front-end with back-end, writing embedded queries through flask, writing python script for sending mail.