

DEFENCE FORCE DATABASE MANAGEMENT SYSTEM

Project report of 2020 BCS

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Contributions

- Listing all the features and making a flowchart for implementation
 - Aditya Kumar Singh (2020BCS-004)
 - Abhisekh Yadav (2020BCS-003)
 - Mark Verma (2020BCS-078)
- Deciding upon classes
 - Aditya Kumar Singh (2020BCS-004)
 - Abhisekh Yadav (2020BCS-003)
 - Mark Verma (2020BCS-078)
- Implementation and coding
 - Aditya Kumar Singh (2020BCS-004)
 - Abhisekh Yadav (2020BCS-003)
 - Mark Verma (2020BCS-078)
 - Pratham Singh (2020BCS-059)
 - Saahil Sabu Hameed (2020BCS-079)
- Formatting the output
 - Aditya Kumar Singh (2020BCS-004)
 - Saahil Sabu Hameed (2020BCS-079)
- Report and Presentation Preparation
 - Aditya Kumar Singh (2020BCS-004)
 - Pratham Singh (2020BCS-059)
 - Saahil Sabu Hameed (2020BCS-079)

Abstract

Our “DEFENCE FORCE DATABASE MANAGEMENT SYSTEM” uses all major concepts of OOP which includes :

- **Inheritance**
- **Data Encapsulation**
- **Data Abstraction**
- **Polymorphism** (*operator overloading*)

Besides these it also uses **Data File Handling**.

Project Features :

- Welcome Page
 - Welcome user to a formatted welcome page
 - User is prompted to enter username and password
 - User also has option to change password if he either forgets his password or if he want to change his password to something new.
- Option to **Add, Remove, Modify** or **View**
 - existing Squadron or Personnel records(based on **hierarchical** privileges)
 - War data or Army, Air force history(based on **hierarchical** privileges)
 - View section-wise weapon details

Introduction

This project gives a peek into the inner structure of Defence Forces Database(Army and Airforce only). Using the concept of Object Oriented Programming it solves confidentiality issues and provides fast and organised access of information to various ranks of soldiers and administrator(s). Different ranks of Defence Personnel will be given view access to various depths of the database. Army General and Air Chief Marshal will also be given write privileges to add or remove a soldier/other ranked officers.

This project shall make use of core OOP properties and Data File Handling:

- Data Encapsulation
- Data Abstraction
- Data Hiding
- Inheritance
- Polymorphism(Operator Overloading)

This project also uses Data File handling for storing the records on the disk.

USED CLASSES

- Sepoy → Lieutenant → Major → Army General (Multi-level Inheritance)
- Aircraftman → Flight Lieutenant → Squadron Leader → Air Chief Marshal (Multi-level Inheritance)
- Chief of Defence Staff (CDS) which is friend class of Army General and Air Chief Marshal
- section_army → stores the information related to one section of army like number of soldiers in an army section and number and types of different weapons
- section_airforce → stores the information related to one section of army like number of soldiers in an army section and number and types of different weapons
- War → stores the information related to war like start date, end date, casualties, etc.
- class date → To store date information we use this user-defined data type

HOW VARIOUS OOP PROPERTIES ARE IMPLEMENTED?

- In any particular class, the data members and getter/setter functions are bonded together exhibiting data encapsulation.
- The user interface has various modes which provide all in one interface to all the ranks of defence forces. Users can access the legible information using their username and password. The private, protected and public access specifiers are core to the data hiding property.

- The concept of inheritance is used to increase the code reusability and transitivity and communication between various classes. Such as the Lieutenant class is inherited from the soldier class and so on.
- Using the property of inheritance and data encapsulation confidentiality is maintained between soldiers and generals while also streamlining data and maintaining organisation. It also helps in weapon management.
- Basically inheritance provides the skeleton to this project over which other OOP properties are implemented.
- Also data file handling is used to permanently save the database in drive.

Various classes or entities Involved

Classes related to Army

• class sepoy

This is the represents the lowest army rank and various features of this class are:-

- Data Members

- string sepoy_id
- string Name
- date date_of_birth //date is a used defined data type (class)
- date date_of_joining
- string Password
- string sepoy_section_id

- Member Functions

- void getter() — a generalised function to input some data members of sepoy
- void getter_sepoy() — to take input into the sepoy object
- void display() — a generalised function to display some data members of sepoy
- void display_sepoy() — to display the sepoy object to user
- void modify() — a generalised modify some data members of sepoy object
- void modify_sepoy() — to modify the sepoy object
- Other Utilities functions
 - void set_password(string pass)
 - string get_password()
 - string ret_sep_id()
 - string ret_sep_name()
 - int ret_sepoy_sec_id()

• class lieutenant

This is a derived class from class sepoy using public visibility mode. This is the second lowest army rank involved in this project. He is the head of an army section. The various features of this class are as follows:-

- Data Members

- String lieutenant_id
- String section_id
- Other inherited data members like string name, string password from base class sepoy

- Member Functions

- void getter_lieutenant()
- void display_lieutenant()
- string ret_lieu_id()
- void modify_lieutenant()

• **class Major**

This is a derived class from class lieutenant using public visibility mode. This is the second highest army rank involved in this project. He is the head of a company. The various features of this class are as follows:-

- Data Members
 - string major_id
 - string company_id
 - Other inherited data members
- Member Functions
 - void getter_major()
 - void display_major()
 - string ret_maj_id()
 - void modify_major()

• **class general**

This is a derived class from class major using public visibility mode. This is the highest army rank involved in this project. He is the head of the entire army. Chief of Defence Staff(CDS) is the friend class of this class. The various features of this class are as follows:-

- Data Members
 - string general_username
- Member Functions
 - void getter_general()
 - void display_general()
 - string ret_gene_username()
 - string ret_gen_name()

• **class section_army**

This is not a derived class. It represents the group of sepoys(lowest rank army personnel). There are 6 sections considered in this project viz. sec1, sec2, sec3,..., sec6. sec1 to sec3 are in company named com1 and sec4 to sec6 are in company named com2. Lieutenant is the head of an army section. The various features of this class are as follows:-

- Data Members (all in protected mode)

- unsigned num_seploys
- string section_id
- string lieutenant_id
- unsigned num_gun
- unsigned num_tank
- unsigned num_mortar
- unsigned num_combat_shotgun
- Member Functions (all in public mode)
 - void operator++(int) //operator overloading
 - void getter_section_army()
 - void print_Section_info()
 - void print_section_weapon_info()

Classes related to Air Force

• **class aircraftman**

• This is the represents the lowest airforce rank and various features of this class are:-

- Data Members
 - string aircraftman_id
 - string name
 - date date_of_birth
 - date Date_of_joining
 - string password
 - string airman_section_id
- Member Functions
 - void getter()
 - void getter_aircraftsman()
 - void display
 - void display_aircraftman()
 - void set_password(string pass)
 - string get_password()
 - string ret_air_id()

- int ret_aircraftman_sec_id()
- void modify()
- void modify_aircraftman()

• **class flight_lieutenant**

This is a derived class from class aircraftman using public visibility mode. This is the second lowest airforce rank involved in this project. He is the head of an airforce section. The various features of this class are as follows:-

- Data Members
 - string flight_lieu_id
 - string section_id
 - Other inherited data members like string name, string password from base class aircraftman
- Member Functions
 - void getter_flight_lieutenant()
 - void display_flight_lieutenant()
 - string ret_fli_lieu_id()
 - void modify_flight_lieutenant()

• **class squadron_leader**

This is a derived class from class flight_lieutenant using public visibility mode. This is the second highest airforce rank involved in this project. He is the head of a squadron. The various features of this class are as follows:-

- Data Members
 - string squadron_leader_id
 - string squadron_id
 - Other inherited data members
- Member Functions
 - void getter_squadron_leader()
 - void display_sqa_leader()
 - string ret_sqdl_id()
 - void modify_sqd_leader()

• **class air_chief_marshall**

This is a derived class from class squadron_leader using public visibility mode. This is the highest airforce rank involved in this project. He is the head of the entire airforce. Chief of Defence Staff(CDS) is the friend class of this class. The various features of this class are as follows:-

- Data Members

- string air_chief_username
- Member Functions
 - void getter_air_chief()
 - void display_air_chief()
 - string ret_air_username()
 - string ret_air_chief_name()

• **class section_airforce**

This is not a derived class. It represents the group of aircraftman(lowest rank airforce personnel). There are 6 sections considered in this project viz. sec1, sec2, sec3,..., sec6. sec1 to sec3 are in squadron named sqa1 and sec4 to sec6 are in squadron named sqa2. Lieutenant is the head of an army section. The various features of this class are as follows:-

- Data Members
 - unsigned num_aircraftman
 - string section_airforce_id
 - string flight_lieu_id
 - unsigned num_missile
 - unsigned num_fighter_jet
 - unsigned num_mp5_machine_gun
 - unsigned num_attack_helicopter
- Member Functions (all in public mode)
 - void operator++(int) //operator overloading
 - void getter_section_airforce()
 - void print_section_info()
 - void print_section_weapon_info()

Other Classes

• **class war**

This class represents a war. One object of this class contains all the information related to a war.

- Data Members (all in private mode)
 - date war_start_date
 - date war_end_date
 - string location
 - string opposition
 - unsigned num_our_casualties

- unsigned num_theirs_casualties
- unsigned expenditure
- string result
- Member Functions (all in public mode)
 - Void getter_war()
 - display_war()

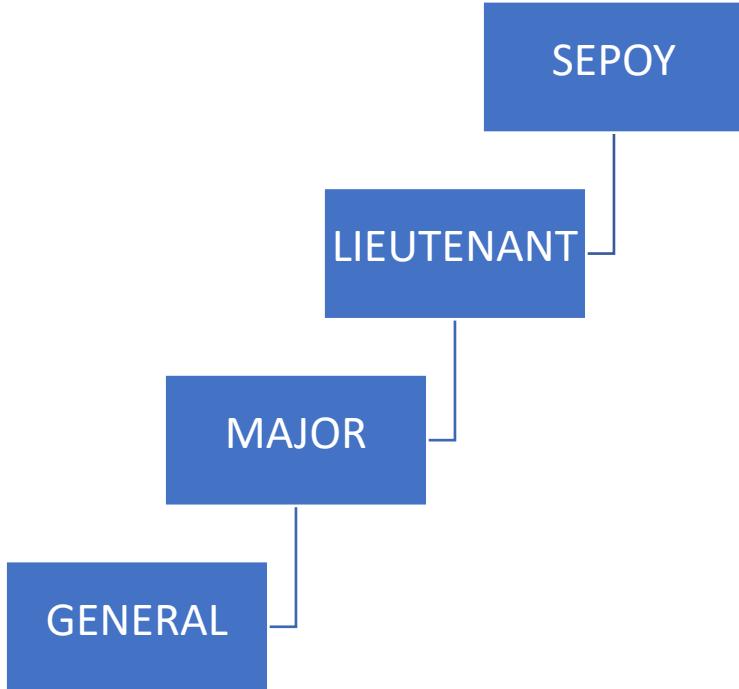
• **class cds**

Chief of Defence Staff(cds) is given the permission of only viewing all the details of army and airforce along with the war details. A cds is the head of both the army and airforce in this project.

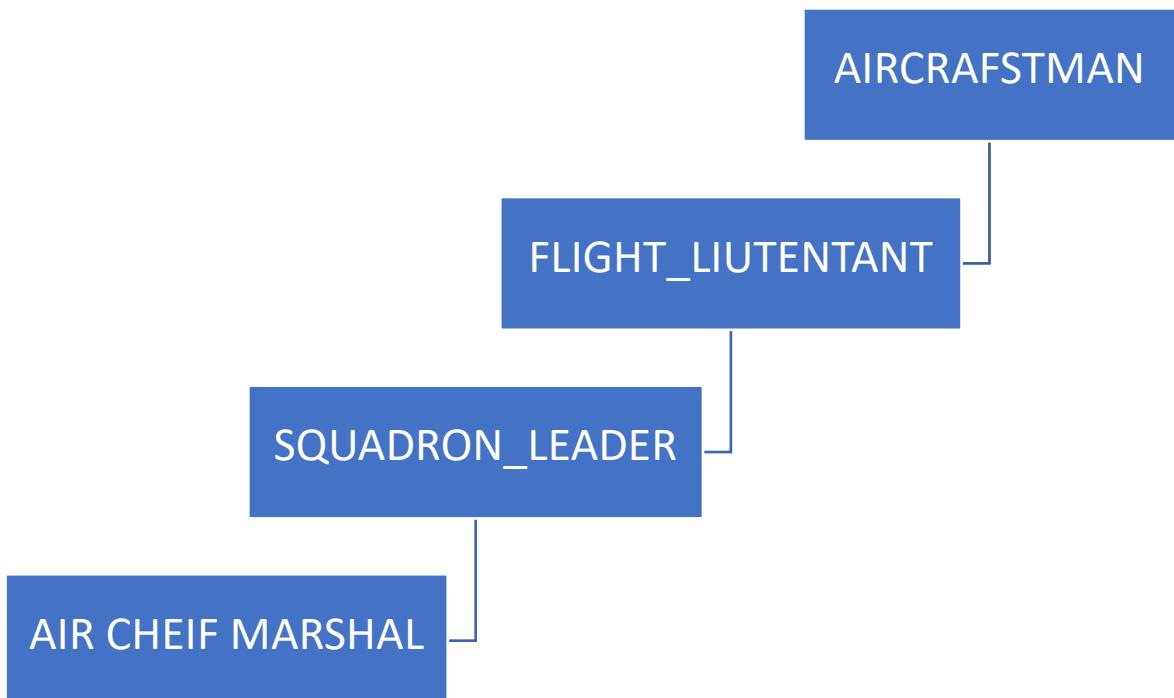
It is friend class of both class general and class air_chief_marshall. It has not inherited any class.

- Data Members (all in private mode)
 - string cds_id
 - string name
 - string username
 - string password
 - date date_of_birth
 - date date_of_joining
- Member Functions (all in public mode)
 - void getter_cds()
 - void display_cds()
 - string ret_username_cds()
 - void set_password_cds()
 - string ret_password_cds()

Personnel and rank information of army and its hierarchy



Personnel and rank information of air force and its hierarchy



Various Permissions to different personnel

- **Sepoy**

- He can login to his dashboard to view his profile
- Change his current password
- View section wise weapon allocation

- **Lieutenant**

- He can login to his dashboard to view his profile
- Change his password
- View section wise weapon allocation

- **Major**

- He can login to his dashboard to view his profile
- Change his password
- View section wise weapon allocation

- **Army General**

DEFAULT USERNAME: vikrambatra

DEFAULT PASSWORD: 1234

- He can login to his dashboard to view his profile
- Change his password
- View section wise weapon allocation
- He can add/modify/delete the record of any one of sepoy/lieutenant/major
- He can view and add war details
- Can't view the details the airforce officers

- **Aircraftman**

- He can login to his dashboard to view his profile
- Change his current password
- View section wise weapon allocation

- **Flight Lieutenant**

- He can login to his dashboard to view his profile
- Change his password
- View section wise weapon allocation

• Squadron Leader

- He can login to his dashboard to view his profile
- Change his password
- View section wise weapon allocation

• Air Chief Marshal

DEFAULT USERNAME: vrchaudhari

DEFAULT PASSWORD: 1234

- He can login to his dashboard to view his profile
- Change his password
- View section wise weapon allocation
- He can add/modify/delete the record of any one of aircraftman/flight lieutenant/squadron leader
- He can view and add war details
- Can't view the details the army officers

• Chief of Defence Staff

DEFAULT USERNAME: bipinrawat

DEFAULT PASSWORD: cds

Name : Bipin Rawat

Date Of Birth : 8-9-1978

Date Of Joining : 7-6-1999

- He can login to his dashboard to view his profile
- Change his password
- View all details related to army except passwords
- View all details related to airforce except passwords
- View the war details
- View the section wise weapon allocation details

Global Functions Used

```
//functions used for army

void add_user(void); //temporary function used to populate the .bin files
void add_army_section_detail(void);
void army_field(void);
void sepoy_login(void);
void lieu_login(void);
void major_login();
void general_login(void);
void add_personel(string post_name);
void modify_personel(string post_name);
void delete_personel(string post_name);
void army_personal_dashboard(void);

//functions for airforce

void add_airforce_user(); //for temporary adding airforce personnel
void add_airforce_personel(string post_name);
void airforce_field();
void air_personal_dashboard(void);
void flight_lieu_login();
void squad_leader_login();
void air_chief_marshall_login();
void aircraftman_login();
void modify_airforce_personel(string post_name);
void delete_airforce_personel(string post_name);
void add_airforce_section_detail(void);

//functions related to war

void war_details(void);
void display_war_history();
```

```
void add_war_details(void);

//cds
void add_cds_details(void);
void cds_login(void);
void cds_field(void);

//utility functions
void main_menu(); //handles the Super_Menu
```

Inserted Data

It is inserted using temporary global functions

● Army Data

- Sepoy

Data is stored in a binary file named sepoy.bin

Sepoy ID : sep1

Name : Pranav Mall

Date Of Birth : 19-3-1988

Date Of Joining : 25-2-2008

Section ID : sec1

Password : 1111

Sepoy ID : sep2

Name : Kiran Ghosh

Date Of Birth : 15-1-1989

Date Of Joining : 25-7-2009

Section ID : sec2

Password : 2222

Sepoy ID : sep3

Name : Anuj Dua

Date Of Birth : 29-5-1989

Date Of Joining : 25-2-2008

Section ID : sec3

Password : 3333

Sepoy ID : sep4

Name : Mangal Pandey

Date Of Birth : 20-11-1988

Date Of Joining : 19-7-2010

Section ID : sec4

Password : 4444

Sepoy ID : sep5

Name : Rohan Saraf

Date Of Birth : 11-6-1990

Date Of Joining : 25-8-2009

Section ID : sec5

Password : 5555

Sepoy ID : sep6

Name : Indrajit Singh

Date Of Birth : 15-1-1989

Date Of Joining : 19-4-2008

Section ID : sec6

Password : 6666

Sepoy ID : sep7

Name : Pradip Verma

Date Of Birth : 15-9-1990

Date Of Joining : 25-7-2009

Section ID : sec1

Password : 7777

Sepoy ID : sep8

Name : Hardeep Yadav

Date Of Birth : 23-12-1990

Date Of Joining : 25-9-2009

Section ID : sec4

Password : 8888

- **Lieutenant**

Data is stored in a binary file named lieu.bin

Lieutenant Id: lie1

Name : Harsh Sharma

Date Of Birth : 12-8-1990

Date Of Joining : 13-8-2009

Section Id: sec1

Password : llll (lower case L)

Lieutenant Id: lie2

Name : Guna Shekhar

Date Of Birth : 13-6-1991

Date Of Joining : 15-5-2008

Section Id: sec2

Password : llll (lower case L)

Lieutenant Id: lie3

Name : Ward Moment

Date Of Birth : 14-6-1999

Date Of Joining : 12-5-2013

Section Id: sec3

Password : llll (lower case L)

Lieutenant Id: lie4

Name : Giraff Mike

Date Of Birth : 24-7-1990

Date Of Joining : 12-9-2008

Section Id: sec4

Password : llll (lower case L)

Lieutenant Id: lie5

Name : Subrat Mandal

Date Of Birth : 16-5-1990

Date Of Joining : 31-8-2009

Section Id: sec5

Password : llll (lower case L)

Lieutenant Id: lie6

Name : Saurabh

Date Of Birth : 22-9-1990

Date Of Joining : 23-4-2007

Section Id: sec6

Password : llll (lower case L)

• Major

Data is stored in a binary file named major.bin

Major ID: maj1

Name : Vedant Rathore

Date Of Birth : 12-10-1990

Date Of Joining : 11-9-2009

Company Id: com1

Password: mmmm

Major ID: maj2

Name : Vikram Chouhan

Date Of Birth : 12-9-1989

Date Of Joining : 12-3-2007

Company Id: com2

Password: mmmm

• Army General

Data is stored in a binary file named general.bin

Username: vikrambatra

Name : Vikram Batra

Date Of Birth : 12-10-1985

Date Of Joining : 11-9-2009

Password: 1234

Note:

- sec1, sec2, sec3 are under com1
- sec4, sec5, sec6 are under com2

• Section Wise Weapon details

Data is stored in airforce_section.bin

Section 1

The weapons allotted to this section are:-

No. of Guns: 5

No. of Tanks: 1

No. of Mortars: 10

No. of Combat Shotguns: 4

Section 2

The weapons allotted to this section are:-

No. of Guns: 5

No. of Tanks: 0

No. of Mortars: 5

No. of Combat Shotguns: 2

Section 3

The weapons allotted to this section are:-

No. of Guns: 5

No. of Tanks: 0

No. of Mortars: 5

No. of Combat Shotguns: 2

Section 4

The weapons allotted to this section are:-

No. of Guns: 5

No. of Tanks: 1

No. of Mortars: 10

No. of Combat Shotguns: 4

Section 5

The weapons allotted to this section are:-

No. of Guns: 5

No. of Tanks: 0

No. of Mortars: 5

No. of Combat Shotguns: 2

Section 6

The weapons allotted to this section are:-

No. of Guns: 5

No. of Tanks: 0

No. of Mortars: 5

No. of Combat Shotguns: 2

●Airforce Data

• Aircraftman

Data is stored in a binary file named aircraftman.bin

Aircraftman Id: air1

Name : Hiten Yadav

Date Of Birth : 13-5-1990

Date Of Joining : 14-7-2008

Section Id: sec1

Password: aaaa

Aircraftman Id: air2

Name : Rohan Singh

Date Of Birth : 15-5-1990

Date Of Joining : 13-9-2009

Section Id: sec2

Password: aaaa

Aircraftman Id: air3

Name : Manoj Bhava

Date Of Birth : 14-7-1991

Date Of Joining : 15-9-2010

Section Id: sec3

Password: aaaa

Aircraftman Id: air4

Name : Soumya Dua

Date Of Birth : 12-12-1990

Date Of Joining : 1-1-2007

Section Id: sec4

Password: aaaa

Aircraftman Id: air5

Name : Vishal Kumar

Date Of Birth : 31-9-1990

Date Of Joining : 13-5-2007

Section Id: sec5

Password: aaaa

Aircraftman Id: air6

Name : Shivendu Kumar

Date Of Birth : 15-5-1990

Date Of Joining : 15-7-2008

Section Id: sec6

Password: aaaa

Aircraftman Id: air7

Name : Arun Mohali

Date Of Birth : 12-12-1998

Date Of Joining : 1-2-2008

Section Id: sec1

Password: aaaa

Aircraftman Id: air8

Name : Urans Khan

Date Of Birth : 5-5-1990

Date Of Joining : 7-7-2009

Section Id: sec4

Password: aaaa

• Flight Lieutenant

Data is stored in a binary file named flight_lieu.bin

Flight Lieutenant Id: fl11

Name : Devansh Kumar

Date Of Birth : 23-9-1990

Date Of Joining : 24-10-2009

Section Id: sec1

Password : ffff

Flight Lieutenant Id: fl12

Name : Vedant Kumar

Date Of Birth : 25-8-1991

Date Of Joining : 31-8-2008

Section Id: sec2

Password : ffff

Flight Lieutenant Id: fl13

Name : Sanish Kumar

Date Of Birth : 23-5-1991

Date Of Joining : 12-3-2009

Section Id: sec3

Password : ffff

Flight Lieutenant Id: flt4

Name : Karuna Prasad

Date Of Birth : 12-3-1991

Date Of Joining : 14-5-2008

Section Id: sec4

Password : ffff

Flight Lieutenant Id: flt5

Name : Varun Kumar

Date Of Birth : 15-9-1989

Date Of Joining : 16-10-2007

Section Id: sec5

Password : ffff

Flight Lieutenant Id: flt6

Name : Urans Kumar

Date Of Birth : 14-11-1991

Date Of Joining : 12-10-2009

Section Id: sec6

Password : ffff

• Squadron Leader

Data is stored in a binary file named squadron_leader.bin

Squadron Leader Id: sql1

Name : Rudra Pratap Singh

Date Of Birth : 12-7-1990

Date Of Joining : 12-6-2009

Squadron Id: sqa1

Password: ssss

Squadron Leader Id: sq12

Name : Mahendra Singh Dhoni

Date Of Birth : 3-4-1990

Date Of Joining : 5-6-2008

Squadron Id: sqa2

Password: ssss

• Air Chief Marshal

Data is stored in a binary file named air_chief.bin

Username: vrchaudhari

Name : V R Chaudhari

Date Of Birth : 12-10-1974

Date Of Joining : 9-8-1989

Password: 1234

• War Details

Data is stored in a binary file named war.bin

Start_date	End_date	Opposition	Location	No_our_casu.	No.their_casu.	Expend.	Result
12-9-1991	15-10-1991	Pakistan	Kargil	235	533	56000000	win
15-9-1998	12-10-1998	Pakistan	Gulmeng	446	765	75600000	win
18-4-1999	15-5-1999	Pakistan	Kargil	657	766	99990000	win
12-4-1997	12-5-1997	Pakistan	Baracula	12	3	3560000	loss

Note:

- sec1, sec2, sec3 are under sqa1
- sec4, sec5, sec6 are under sqa2

• Section Wise Weapon details

Data is stored in army_section.bin

Section 1

The weapons allotted in the section are:-

No. of Missiles: 5

No. of Fighter Jets: 2

No. of Machine Guns: 5

No. of Attack Helicopter: 2

Section 2

The weapons allotted in the section are:-

No. of Missiles: 5

No. of Fighter Jets: 1

No. of Machine Guns: 5

No. of Attack Helicopter: 1

Section 3

The weapons allotted in the section are:-

No. of Missiles: 5

No. of Fighter Jets: 1

No. of Machine Guns: 5

No. of Attack Helicopter: 1

Section 4

The weapons allotted in the section are:-

No. of Missiles: 5

No. of Fighter Jets: 2

No. of Machine Guns: 5

No. of Attack Helicopter: 2

Section 5

The weapons allotted in the section are:-

No. of Missiles: 5

No. of Fighter Jets: 1

No. of Machine Guns: 5

No. of Attack Helicopter: 1

Section 6

The weapons allotted in the section are:-

No. of Missiles: 5

No. of Fighter Jets: 1

No. of Machine Guns: 1

No. of Attack Helicopter: 1

OUTPUT & NAVIGATION

- Super_Menu — when the program is run

```
|-----| DEFENCE FORCE DATABASE MANAGEMENT SYSTEM |-----|  
Super Menu  
-----  
1. Army login  
2. Air-Force login  
3. Chief of Defence Staff(CDS) login  
4. Exit  
  
Enter your choice: |
```

- Option 3 for CDS

```
Enter your choice: 3  
  
Cheif Defence of Staff  
-----  
  
Enter Username: bipinrawat  
Enter Password: cds  
Your Profile:-  
Name : Bipin Rawat  
Date Of Birth : 8-9-1978  
Date Of Joining : 7-6-1999  
  
CDS Previlages  
-----  
  
1. Password Change  
2. Army Details  
3. Airforce Details  
4. War Details  
5. Logout  
6. Exit  
  
Enter your Choice |
```

- Option 3 for CDS

Selecting one by one various options

```
CDS Previleges
-----
1. Password Change
2. Army Details
3. Airforce Details
4. War Details
5. Logout
6. Exit

Enter your Choice 2

1. Weapon Details:
2. Sepoy Details:
3. Lieutenant Details:
4. Major Details:
5. General Details:
Enter the choice: 1
Section 1
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 1
No. of Mortars: 10
No. of Combat Shotguns: 4
Section 2
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2
Section 3
-----
```

```
Section 3
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2
Section 4
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 1
No. of Mortars: 10
No. of Combat Shotguns: 4
Section 5
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2
Section 6
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2
```

```
CDS Previleges
-----
1. Password Change
2. Army Details
3. Airforce Details
4. War Details
5. Logout
6. Exit

Enter your Choice 2

1. Weapon Details:
2. Sepoy Details:
3. Lieutenant Details:
4. Major Details:
5. General Details:
Enter the choice: 2

Sepoy ID : sep1
Name : Pranav Mall
Date Of Birth : 19-3-1988
Date Of Joining : 25-2-2008
Section ID : sec1

Sepoy ID : sep2
Name : Kiran Ghosh
Date Of Birth : 15-1-1989
Date Of Joining : 25-7-2009
Section ID : sec2

Sepoy ID : sep3
Name : Anuj Dua
Date Of Birth : 29-5-1989
Date Of Joining : 25-2-2008
Section ID : sec3
```

```
Sepoy ID : sep4
Name : Mangal Pandey
Date Of Birth : 20-11-1988
Date Of Joining : 19-7-2010
Section ID : sec4

Sepoy ID : sep5
Name : Rohan Saraf
Date Of Birth : 11-6-1990
Date Of Joining : 25-8-2009
Section ID : sec5

Sepoy ID : sep6
Name : Indrajit Singh
Date Of Birth : 15-1-1989
Date Of Joining : 19-4-2008
Section ID : sec6

Sepoy ID : sep7
Name : Pradip Verma
Date Of Birth : 15-9-1990
Date Of Joining : 25-7-2009
Section ID : sec1

Sepoy ID : sep8
Name : Hardeep Yadav
Date Of Birth : 23-12-1990
Date Of Joining : 25-9-2009
Section ID : sec4
```

```
CDS Previleges
-----
1. Password Change
2. Army Details
3. Airforce Details
4. War Details
5. Logout
6. Exit

Enter your Choice 2

1. Weapon Details:
2. Sepoy Details:
3. Lieutenant Details:
4. Major Details:
5. General Details:
Enter the choice: 3

Lieutenant Id: lie1
Name : Harsh Sharma
Date Of Birth : 12-8-1990
Date Of Joining : 13-8-2009
Section Id: sec1

Lieutenant Id: lie2
Name : Guna Shekhar
Date Of Birth : 13-6-1991
Date Of Joining : 15-5-2008
Section Id: sec2

Lieutenant Id: lie3
Name : Ward Moment
Date Of Birth : 14-6-1999
Date Of Joining : 12-5-2013
Section Id: sec3
```

```
Lieutenant Id: lie4
Name : Giraff Mike
Date Of Birth : 24-7-1990
Date Of Joining : 12-9-2008
Section Id: sec4

Lieutenant Id: lie5
Name : Subrat Mandal
Date Of Birth : 16-5-1990
Date Of Joining : 31-8-2009
Section Id: sec5

Lieutenant Id: lie6
Name : Saurabh
Date Of Birth : 22-9-1990
Date Of Joining : 23-4-2007
Section Id: sec6
```

```
CDS Previleges
-----
1. Password Change
2. Army Details
3. Airforce Details
4. War Details
5. Logout
6. Exit

Enter your Choice 2

1. Weapon Details:
2. Sepoy Details:
3. Lieutenant Details:
4. Major Details:
5. General Details:
Enter the choice: 4

Major ID: maj1
Name : Vedant Rathore
Date Of Birth : 12-10-1990
Date Of Joining : 11-9-2009
Company Id: com1

Major ID: maj2
Name : Vikram Chouhan
Date Of Birth : 12-9-1989
Date Of Joining : 12-3-2007
Company Id: com2
```

```
CDS Previleges
-----
1. Password Change
2. Army Details
3. Airforce Details
4. War Details
5. Logout
6. Exit

Enter your Choice 2

1. Weapon Details:
2. Sepoy Details:
3. Lieutenant Details:
4. Major Details:
5. General Details:
Enter the choice: 5

Username: vikrambatra
Name : Vikram Batra
Date Of Birth : 12-10-1985
Date Of Joining : 11-9-2009
```

```
CDS Previleges
-----
1. Password Change
2. Army Details
3. Airforce Details
4. War Details
5. Logout
6. Exit

Enter your Choice 5

Logging Out...
```

- Choosing option 1 for Army Details - Army Personnel

And then choosing various options one by one

```

|-----| DEFENCE FORCE DATABASE MANAGEMENT SYSTEM |-----|
|-----|
| Super Menu |
|-----|
1. Army login
2. Air-Force login
3. Chief of Defence Staff(CDS) login
4. Exit

Enter your choice: 1

|-----| Army Menu |
|-----|
1. Login to Personal Dashboard
2. Section-wise weapon allocation
3. War Details
4. Exit
9. Return to Previous Menu

Enter your choice: 1

|-----| Personel Dashboard Login |
|-----|
1. Sepoy login
2. Lieutenant login
3. Major login
4. General login
5. Exit
9. Return to Previous menu
Enter your choice: 1

```

```

Welcome to Sepoy login

Enter sepoy Id: sep2
Enter the Password: 2222

Sepoy Privilages:-
1. View your Profile
2. Change your password
Enter your choice: 1

Sepoy ID : sep2
Name : Kiran Ghosh
Date Of Birth : 15-1-1989
Date Of Joining : 25-7-2009
Section ID : sec2
Enter any key to continue to previous menu...

```

```

|-----| Army Menu |
|-----|
1. Login to Personal Dashboard
2. Section-wise weapon allocation
3. War Details
4. Exit
9. Return to Previous Menu

Enter your choice: 2

Section 1
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 1
No. of Mortars: 10
No. of Combat Shotguns: 4

Section 2
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2

Section 3
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2

```

```

Section 4
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 1
No. of Mortars: 10
No. of Combat Shotguns: 4

Section 5
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2

Section 6
-----
The weapons allotted to this section are:-
No. of Guns: 5
No. of Tanks: 0
No. of Mortars: 5
No. of Combat Shotguns: 2

```

```

Army Menu
-----
1. Login to Personal Dashboard
2. Section-wise weapon allocation
3. War Details
4. Exit
9. Return to Previous Menu

Enter your choice: 3

Note: Only Army General can view and add war details

Do you want to continue(y/n)? y

Enter Username: vikrambatra

Enter Password: 1234

Choose the following options:-
1. View War History
2. Add War Details
3. Exit
9. Return to Previous Menu
Enter your choice: 1

```

```

Choose the following options:-
1. View War History
2. Add War Details
3. Exit
9. Return to Previous Menu
Enter your choice: 1
Start_date      End_date      Opposition      Location No_our_casu.  No.their_casu.  Expend. Result
12-9-1991       15-10-1991    Pakistan        Kargil      235          533          56000000    win
15-9-1998       12-10-1998    Pakistan        Gulmeng     446          765          75600000    win
18-4-1999       15-5-1999     Pakistan        Kargil      657          766          99990000    win
12-4-1997       12-5-1997     Pakistan        Baracula    12           3            3560000    loss

```

- Adding a war detail

```

Choose the following options:-
1. View War History
2. Add War Details
3. Exit
9. Return to Previous Menu
Enter your choice: 2

Enter the number of details: 1
War Beginning Date: Enter the day/month/year separated by space: 13 4
1990
War End Date: Enter the day/month/year separated by space: 15 5 1991
Enter the location where the war took place: Jammu
Enter the name of country against which war took place: Pakistan
Enter the number of casualties from our side: 3456
Enter the number of casualties from opposing side: 4566
Enter our expenditure(in INR): 99000900
Enter the result(win/loss): win

```

```

Choose the following options:-
1. View War History
2. Add War Details
3. Exit
9. Return to Previous Menu
Enter your choice: 1
Start_date      End_date      Opposition      Location No_our_casu.  No.their_casu.  Expend. Result
12-9-1991       15-10-1991    Pakistan        Kargil      235          533          56000000    win
15-9-1998       12-10-1998    Pakistan        Gulmeng     446          765          75600000    win
18-4-1999       15-5-1999     Pakistan        Kargil      657          766          99990000    win
12-4-1997       12-5-1997     Pakistan        Baracula    12           3            3560000    loss
13-4-1990       15-5-1991     Pakistan        Jammu      3456         4566         99000900    win

```

Choose the following options:-

1. View War History
2. Add War Details
3. Exit
9. Return to Previous Menu

Enter your choice: 9

Army Menu

1. Login to Personal Dashboard
2. Section-wise weapon allocation
3. War Details
4. Exit
9. Return to Previous Menu

Enter your choice: 1

Personel Dashboard Login

1. Sepoy login
2. Lieutenant login
3. Major login
4. General login
5. Exit
9. Return to Previous menu

Enter your choice: 4

Welcome to General login

Enter the username: vikrambatra

Enter the Password: 1234

Select an Operation Listed Below:-

- a. View your Profile
- b. Update your Password

1. Add a Personel
2. Modify detail(s) of a Personel
3. Remove a Personel
4. Exit

9. Return to Previous Menu

- Adding a sepoy record

Enter your choice: 1

Whom to add(Sepoy/Lieutenant/Major): Sepoy

Enter Sepoy Id: sep9

Enter Name: Vikrant Kumar

Date of Birth: Enter the day/month/year separated by space: 12 03 1990

Date of Joining: Enter the day/month/year separated by space: 12 08 2009

Set your password:

Enter new password: 9999

Confirm new password: 9999

Enter Section Id(sec1 to sec6): sec2

Sepoy record has been created successfully!!

- Updating a sepoy record

```
Select an Operation Listed Below:-
a. View your Profile
b. Update your Password

1. Add a Personnel
2. Modify detail(s) of a Personnel
3. Remove a Personnel
4. Exit

9. Return to Previous Menu

Enter your choice: 2

Whom to add(Sepoy/Lieutenant/Major): Sepoy

Enter the Id:sep9
Enter modified Name: Vikrant Singh
Modified Date of Birth: Enter the day/month/year separated by space: 12 03 1990
Modified Date of Joining: Enter the day/month/year separated by space: 12 08 2009
Enter modified section Id: sec2

Record Updated
```

- Checking for modification

```
Welcome to Sepoy login
-----
Enter sepoy Id: sep9
Enter the Password: 9999
Sepoy Privileges:-
1. View your Profile
2. Change your password
Enter your choice: 1

Sepoy ID : sep9
Name : Vikrant Singh
Date Of Birth : 12-3-1990
Date Of Joining : 12-8-2009
Section ID : sec2
Enter any key to continue to previous menu...
```

- Deleting a Sepoy record

```
Welcome to General login
-----
Enter the username: vikrambatra
Enter the Password: 1234
Select an Operation Listed Below:-
a. View your Profile
b. Update your Password
1. Add a Personnel
2. Modify detail(s) of a Personnel
3. Remove a Personnel
4. Exit
9. Return to Previous Menu

Enter your choice: 3
Whom to add(Sepoy/Lieutenant/Major): Sepoy
Enter the Id: sep9

Record Deleted Successfully...■
```

- Checking if record is deleted or not

```
Personel Dashboard Login
-----
1. Sepoy login
2. Lieutenant login
3. Major login
4. General login
5. Exit
9. Return to Previous menu
Enter your choice: 1

Welcome to Sepoy login
-----
Enter sepoy Id: sep9
Enter the Password: 9999
Incorrect Password or Record not found in database
```

- Similarly we can check the output for airforce as well

CONCLUSION

This project gives a peek into the Defence Force Database Management System. It uses the Object Oriented Programming concepts to maintain confidentiality between various ranks of defence personnel while also streamlining the information access privileges.