LAB 8 | Artificial Intelligence

Aim : Database Handling in Prolog.

1. Write a prolog program to create applications like “marriage bureau” using dynamic databases and compound objects, and use files to store data.

Code :

```
domains
    name,gender,address=symbol
    phone=string
    age=integer

database
    person(name,age,gender,address,phone)

predicates
    writePerson.
    searchByName(name).
    searchByPhone(phone).
    search.
    openDB.
    deleteByName(name).
    deleteByPhone(phone).
    updateByName(name).
    updateByPhone(phone).

clauses
    openDB:-consult("d:\database.txt").

    writePerson:-
        readln(Name),readint(Age),readln(Gender),readln(Address),readln(Phone),
        asserta(person(Name,Age,Gender,Address,Phone)),save("d:\database.txt").

    search:-
                retract(person(Name,Age,Gender,Address,Phone)),
                write(Name),nl, write(Age),nl,write(Gender),nl,write(Address),nl,write(Phone),nl,fail.

    searchByName(Name1):-
              retract(person(Name1,Age,Gender,Address,Phone)),
              write(Name1),nl, write(Age),nl,write(Gender),nl,write(Address),nl,write(Phone),nl,fail.

    searchByPhone(Phone1):-
```

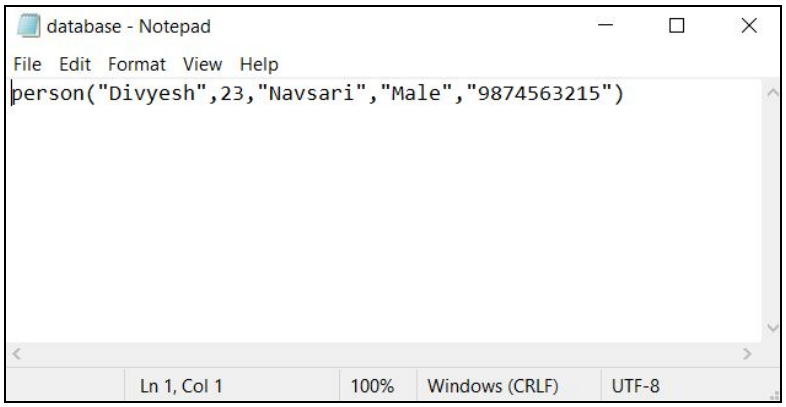
```
        retract(person(Name,Age,Gender,Address,Phone1)),
        write(Name),nl, write(Age),nl,write(Gender),nl,write(Address),nl,write(Phone1),nl,fail.

deleteByName(Name1):-
      retract(person(Name1,_,_,_,_)),
      save("database.txt"),nl.

 deleteByPhone(Phone1):-
     retract(person(_,_,_,_,Phone1)),
     save("database.txt"),nl.

  updateByName(X):-
    retract(person(X,_,_,_,_)),readint(Age),readln(Gender),readln(Address),readln(Phone),
    asserta(person(X,Age,Gender,Address,Phone)),save("d:\database.txt").

  updateByPhone(X):-
      retract(person(_,_,_,_,X)),readln(Name),readint(Age),readln(Gender),readln(Address),
      asserta(person(Name,Age,Gender,Address,X)),save("d:\database.txt").
```

Output :

```
Goal : openDB
Yes

Goal : writePerson
Raj
21
Surat
Male
7874716190

Goal : search
Raj
21
Surat
Male
7874716190

Goal : searchByName(“Parth”)
Parth
20
Male
Valsad
9265928833
No
```

```
Goal : searchByPhone(“7874716190”)
Raj
21
Male
Surat
7874716190
No

Goal : updateByName(“Divyesh”)
23
Navsari
Male
9874563215

Goal : searchByName(“Divyesh”)
Divyesh
23
Navsari
Male
9874563215
No
```

Database File :



2. Code for ProLog Program of searching a students data when Name or a phone no is input in Artificial Intelligence.

Code:

```
domains
        name,address = symbol
        phone = string
        l = integer*

predicates
        start
        repeat
        selectItem(integer)
        studentData
        subjectL(l)
        searchByName(name)
        searchByPhone(phone)

database
        studentDB(name,address,phone,l)


goal
        clearwindow,
        makewindow(1,7,7,"Search Student Detail",0,0,25,80),
        start.

clauses
        repeat.
                repeat:-
        repeat.

        start:-
                repeat,
                write("\n0.Exit"),
                write("\n1.Enter student data"),
                write("\n2.Search by Name"),
                write("\n3.Search by Phone number"),
                write("\n4.Show all Student Data"),
                write("\nEnter your choice::"),
                readint(Choice),
                selectItem(Choice),
                Choice=0.
```

```
selectItem(0).

selectItem(1):-
        studentData,
        fail.

selectItem(2):-
        write("\nEnter your name::"),
        readln(Name),
        searchByName(Name),
        fail.

selectItem(3):-
        write("\nEnter the phone no::"),
        readln(Phone),
        searchByPhone(Phone),
        fail.

selectItem(4):-
        studentDB(Name,Address,Phone,Marks),
        write(Name," ",Address," ",Phone," ",Marks),nl,
        fail.

studentData:-
        write("\nEnter the name of the student::"),
        readln(Name),
        write("\nEnter the address of the student::"),
        readln(Address),
        write("\nEnter the phone number of the student::"),
        readln(Phone),
        write("\nEnter the five subject marks of the student"),
        subjectL(Marks),
        assert(studentDB(Name,Address,Phone,Marks)).

subjectL(Marks):-
        write("\nC ::"),
        readint(C),
        write("\nC++ ::"),
        readint(CC),
        write("\nVB ::"),
        readint(VB),
        write("\nJAVA ::"),
        readint(Java),
        write("\nPROLOG ::"),
        readint(Prolog),
        Marks=[C,CC,VB,Java,Prolog].
```

```
searchByName(Name1):-
        studentDB(Name1,Address,Phone,Marks),
        write("\nName::",Name1),
        write("\nAddress::",Address),
        write("\nPhone::",Phone),
        write("\nMarks[C,C++,VB,Java,Prolog]::",Marks).

searchByPhone(Phone1):-
        studentDB(Name,Address,Phone1,Marks),
        write("\nName::",Name),
        write("\nAddress::",Address),
        write("\nPhone::",Phone1),
        write("\nMarks[C,C++,VB,Java,Prolog]::",Marks).
```

Output:

```
                    Search Student Detail

0.Exit
1.Enter student data
2.Search by Name
3.Search by Phone number
4.Show all Student Data
Enter your choice::1

Enter the name of the student::Raj

Enter the address of the student::Surat

Enter the phone number of the student::7874716190

Enter the five subject marks of the student
C :: 45

C++ ::52

VB :: 50

JAVA :: 65

PROLOG :: 70

0.Exit
1.Enter student data
2.Search by Name
```

```
3.Search by Phone number
4.Show all Student Data
Enter your choice::2

Enter your name :: Raj

Name :: Raj
Address :: Surat
Phone :: 7874716190
Marks[C,C++,VB,Java,Prolog] :: [45,52,50,65,70]

0.Exit
1.Enter student data
2.Search by Name
3.Search by Phone number
4.Show all Student Data
Enter your choice::4

Raj Surat 7874716190 [45,52,50,65,70]

0.Exit
1.Enter student data
2.Search by Name
3.Search by Phone number
4.Show all Student Data
Enter your choice::0

Press the SPACEbar
```