



**Artificial Intelligence Project: Expert System in Prolog**

**Title: Tech-Stack Recommendation System**

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## ***Project Overview:***

Artificial Intelligence can be use to give inference from knowledge. We can use it to obtain similar results as created with human intelligence. Since, we use computation in order to so we can sometimes get even better result than human beings, as computers have higher memory, faster processing for sustained periods of time and since it is done via a structured programme give consistent results compare to humans. E.g. In many domains AI programmes have surpassed humans like in chess and recently in go.

This project tries to recommend tech stack based on user's experience, knowledge and need of the applications.

## ***Domain Overview:***

There are several kinds of programming applications and for each one of them we have various kinds of tech stack available, for e.g. if I want to create a frontend web-application I have a range of frontend frameworks to use, from react, angular to simple vanilla js, Also it depends on what my target is do I want a web only web-application or something which can work on multiple platforms.

Similarly you want a good backend based on your knowledge of programming language.

Same goes for if I wish to develop native application.

Also if I need to additional features with my project say if I want to work with something related to blockchain then I should use something like solidity.

## ***Knowledge Overview:***

Facts related to various platform, experience and programming language requirements.

Eg.

```
frontend(reactjs,web,js,intermediate) .  
frontend(angular,web,js,intermediate) .
```

## Code:

```
/* facts for frontend
frontend(name, platform, Language,experience)
*/
frontend(html_css_vanillajs,web,js,beginner).
frontend(flutter, multiplatform,dart,intermediate).
frontend(react, multiplatform,js,intermediate).
frontend(xamarin, multiplatform,c_sharp,intermediate).
frontend(reactjs,web,js,intermediate).
frontend(angular,web,js,intermediate).
frontend(vue,web,js,intermediate)./*
facts for backend(name, language,experience)
*/
backend(django,python,intermediate).
backend(flask,python,beginner).
backend(expressjs,js,intermediate).
backend(lavarel,php,beginner).
backend(asp_dot_net,c_sharp,intermediate).
backend(spring_boot,java,intermediate).
backend(koa,js,intermediate).

/* facts for native application
native(platform,language)
*/
native(android,kotlin).
native(ios,swift).
native(windows,dot_net).
native(ubuntu,flutter).
native(macos,swift).

/* cloud server */

server(aws).
server(azure).
server(gcp).
server(digital_ocean_droplet).

/* feature(name,technology,language)*/
feature(blockchain,solidity,cpp).
feature(machine_learning,sklearn,python).
feature(deep_learning,tensorflow,python).
feature(game_development,unity,c_sharp).
feature(game_development,opengl,cpp).
feature(operating_system,kernel_programming,c).

menu(Ans) :- write('    You want a tech stack for:-'),nl,
              write('    1. web. '),nl,
              write('    2. native. '),nl,
              write('    3. feature'),nl,
              read(Ans),nl.

frontend_on_level(Level):- write("What is level of your experience in frontend development"),nl,
                           write('    1. beginner. '),nl,
                           write('    2. intermediate. '),nl,
                           read(Level),nl,
                           frontend(X,Y,Level), write("Frontend : "), write(X), write(" on "), write(Y).

show_frontend(X,Y,Z,W):-frontend(X,Y,Z,W),nl,
                          write("For Frontend you can use "),write(X), write(" which is "), write(Z),nl.
```

```

start:-
write("This is an expert system to recommend tech stack"),nl,
write("Answer the following question to begin the recommendation Process"),nl,
write('  What is your name? '),
    read(Name),nl,
    write('    Hello '),
    write(Name),nl,
write('  You want a tech stack for:-'),nl,
write('    1. web. '),nl,
write('    2. native. '),nl,
read(For),nl,

For == 'web'->
(
    write("What is level of your experience in frontend development"),nl,
    write('    1. beginner. '),nl,
    write('    2. intermediate. '),nl,
    read(LevelFront),nl,

    write("Do you want to develop for multiplatform or web "),nl,
    write('    1. multiplatform. '),nl,
    write('    2. web. '),nl,
    read(Choice),nl,

    write("What is level of your experience in backend development"),nl,
    write('    1. beginner. '),nl,
    write('    2. intermediate. '),nl,
    read(LevelBack),nl,
    write("On Which Programming you can write good logic "),nl,
    write('    1. java. '),nl,
    write('    2. python. '),nl,
    write('    3. js '),nl,
    write('    4. c_sharp '),nl,
    write('    5. php '),nl,
    read(Language),nl,

    frontend(X,Choice,Y,LevelFront),
    write(X), write(" for frontend"), write(" on "),write(Y), write(" as an "),
    write(LevelFront),write(" level frontend developer, and"),nl,

    backend(A,Language,LevelBack),
    write(A), write(" for backend "), write("on "),write(Language), write(" as an "),
    write(LevelBack),write(" level backend developer"),nl,nl
);
(
write("which native platform is your target"),nl,
write('    1. android. '),nl,
write('    2. ios. '),nl,
write('    3. windows. '),nl,
write('    4. ubuntu. '),nl,
write('    5. macos. '),nl,
read(Platform),nl,
write("What is level of your experience in backend development"),nl,
write('    1. beginner. '),nl,
write('    2. intermediate. '),nl,
read(LevelBack),nl,
write("On Which Programming you can write good logic "),nl,
write('    1. java. '),nl,
write('    2. python. '),nl,
write('    3. js '),nl,

```

```

        write('    4. c_sharp'),nl,
        write('    5. php'),nl,
        read(Language),nl,
        native(Platform,Tech),
        write("You can use "),
        write(Tech), write(" to develop applications for "), write(Platform),nl,nl,
        backend(A,Language,LevelBack),
        write(A), write(" for backend "), write("on "),write(Language), write(" as an "),
        write(LevelBack),write(" level backend developer"),nl,nl
    ),
    write("Do yo want to add extra feature to your application ans yes. or no."),nl,
    read(Response),
    (
        (Response == 'yes'; Response=='YES'; Response=='y')->
        write("which feature is your target"),nl,
        write('    1. blockchain.'),nl,
        write('    2. machine_learning.'),nl,
        write('    3. deep_learning.'),nl,
        write('    4. game_development.'),nl,
        write('    5. operating_system.'),nl,
        read(Feature),
        feature(Feature, On, Lang),
        write("To develop "), write(Feature),write(" use "),
        write(On), write(" with programming language "), write(Lang),nl,nl
    ),
    write("Do you need a server to host "),nl,
    read(Res),
    (
        (Res == 'yes'; Res=='YES'; Res=='y')->
        write("Choose backend of your choice "),nl,
        write('    1. aws.'),nl,
        write('    2. azure.'),nl,
        write('    3. gcp.'),nl,
        write('    4. digital_ocean_droplet.'),nl,
        read(Server),
        server(Server),
        write("You can use "), write(Server),nl,nl
    ),
    write("Recommendation Complete").

```

```

language_level_based(Lang,Level):- frontend(X,Y,Lang,Level),
backend(Z,Lang,Level),
write("You can use : "),nl,
write(X), write(" For frontend"), write(" Which is on "), write(Y),
write(" and, "),nl,
write(Z), write(" For backend")
.

```

```

feature_on_language(Lang):- feature(Feature,On,Lang),write("You can work on "), write(Feature), write(" with "),
write(On), write(" based on your knowledge of "), write(Lang).

```

```
?- start.
This is an expert system to recommend tech stack
Answer the following question to begin the recommendation Process
  What is your name? amk.

  Hello amk
  You want a tech stack for:-
  1. web.
  2. native.
|: web.

What is level of your experience in frontend development
  1. beginner.
  2. intermediate.
|: intermediate.

Do you want to develop for multiplatform or web
  1. multiplatform.
  2. web.
|: multiplatform.

What is level of your experience in backend development
  1. beginner.
  2. intermediate.
|: intermediate.

On Which Programming you can write good logic
  1. java.
  2. python.
  3. js
  4. c_sharp
  5. php
|: c_sharp.

flutter for frontend on dart as an intermediate level frontend developer, and
asp_dot_net for backend on c_sharp as an intermediate level backend developer

Do you want to add extra feature to your application ans yes. or no.
|: yes.
which feature is your target
  1. blockchain.
  2. machine_learning.
  3. deep_learning.
  4. game_development.
  5. operating_system.
|: blockchain.
To develop blockchain use solidity with programming language cpp

Do you need a server to host
|: y.
Choose backend of your choice
  1. aws.
  2. azure.
  3. gcp.
  4. digital_ocean_droplet.
|: gcp.
You can use gcp

Recommendation Complete
true .
```

