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**UCT 603**

**ARTIFICIAL INTELLIGENCE**

**Cocktail Recommender Expert System using Prolog**

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**THAPAR INSTITUTE**  
OF ENGINEERING & TECHNOLOGY  
(Deemed to be University)

**Submitted to: Ms. Sujata Rani**

**DIVIJA**

**102018056**

**CSBS3**

## Summary:

The system asks a series of yes or no questions to understand the user's tastes and preferences. It considers different parameters like the type of spirit, the time of day the cocktail will be consumed, the preference for citrus, the user's pallet (whether sweet or savory), flavor preference (such as ginger or coconut), and even the user's personality type.

Based on the user's inputs, the system suggests a cocktail that best matches their preferences. Overall, the Cocktail Expert System aims to simplify the process of finding a cocktail that the user will enjoy. The system is designed to be user-friendly and intuitive, making it accessible to a wide range of users

## Code Screenshots:

```
begin :-
    welcome_message,
    clear,
    get_cocktail(Cocktail) -> (
        format('I think you will enjoy a ~w as your cocktail', [Cocktail])
    ),
    writeln('\n \nThank you from your host - DIVIJA').

welcome_message :-
    writeln('Welcome to the Cocktail Expert System - AI PROLOG Project! \n'),
    writeln('\nTo get started , state your taste and preferences.'),
    writeln('Please answer yes. or no. [the dot(.) is important.]'),
    writeln('Ready? '),
    read(yes).

:- dynamic(drink_info/2).

clear :-retract(drink_info(_, _)),
    fail.
clear.

get_cocktail(Cocktail) :-cocktail(Cocktail),cocktail(Cocktail).

/*----- Drinks----- */
cocktail(margarita) :-
    spirit('tequila'),
    time_of_day('evening'),
    citrus('lime').
cocktail(paloma) :-
    spirit('tequila'),
    time_of_day('evening'),
    citrus('grapefruit').
cocktail(tequila_sunrise) :-
    spirit('tequila'),
    time_of_day('day_time'),
    pallet('sweet').
cocktail(bloody_maria) :-
    spirit('tequila'),
    time_of_day('day_time'),
    pallet('savory').
cocktail(bloody_mary) :-
    spirit('vodka'),
    time_of_day('day_time').
cocktail(lemon_drop) :-
    spirit('vodka'),
    time_of_day('evening'),
    flavor_vodka('lemon').
cocktail(moscow_mule) :-
```

```

        spirit('vodka'),
        time_of_day('evening'),
        flavor_vodka('ginger').
cocktail(vodka_martini) :-
    spirit('vodka'),
    time_of_day('evening'),
    flavor_vodka('i_just_want_to_look_cool').
cocktail(pina_colada) :-
    spirit('rum'),
    flavor_rum('coconut').
cocktail(dark_and_stormy) :-
    spirit('rum'),
    flavor_rum('ginger').
cocktail(mai_tai) :-
    spirit('rum'),
    flavor_rum('lime').
cocktail(strawberry_daiquiri) :-
    spirit('rum'),
    flavor_rum('strawberry').
cocktail(gin_martini) :-
    spirit('gin'),
    time_of_day('day_time').
cocktail(gin_and_tonic) :-
    spirit('gin'),
    time_of_day('evening').
cocktail(gimlet) :-
    spirit('gin'),
    pallet('sweet').
cocktail(negroni) :-
    spirit('gin'),
    pallet('savory').
cocktail(old_fashion) :-
    spirit('whiskey'),
    type_of_person('old_soul').
cocktail(whiskey_sour) :-
    spirit('whiskey'),
    type_of_person('ive_got_two_sides').
cocktail(irish_coffee) :-
    spirit('whiskey'),
    type_of_person('morning_person').
cocktail(manhattan) :-
    spirit('whiskey'),
    type_of_person('sophisticated').

cocktail(different) :-
    nl,
    writeln('It appears that we do not have that drink on the menu'),
    writeln('Let\'s try again.'),
    nl,

```

```

spirit(Spirit) :-drink_info(spirit, Spirit).
spirit(Spirit) :-\+ drink_info(spirit, _),query(spirit, Spirit, [tequila, vodka, rum, gin, whiskey]).

time_of_day(Time) :-drink_info(time_of_day, Time).
time_of_day(Time) :-\+ drink_info(time_of_day, _),query(time_of_day, Time, [day_time, evening]).

citrus(Citrus) :-drink_info(citrus, Citrus).
citrus(Citrus) :-\+ drink_info(citrus, _),query(citrus, Citrus, [lime, grapefruit]).

pallet(Pallet) :-drink_info(pallet, Pallet).
pallet(Pallet) :-\+ drink_info(pallet, _),query(pallet, Pallet, [savory, sweet]).

flavor_vodka(Flavor) :-drink_info(flavor, Flavor).
flavor_vodka(Flavor) :-\+ drink_info(flavor, _),query(flavor, Flavor, [lemon, ginger, i_just_want_to_look_cool]).

flavor_rum(Flavor) :-drink_info(flavor, Flavor).
flavor_rum(Flavor) :-\+ drink_info(flavor, _),query(flavor, Flavor, [coconut, lime, ginger, strawberry]).

type_of_person(Person) :-drink_info(type_of_person, Person).
type_of_person(Person) :- \+ drink_info(type_of_person, _),query(type_of_person, Person, [old_soul,
ive_got_two_sides, morning_person,sophisticated]).

query(Step, Answer, []) :-assert(drink_info(Step, false)).
query(Step, Answer, [C | E]) :-question(Step),write(C),writeln('?'), read(yes) -> assert(drink_info(Step,
C)),Answer = C,query(Step, Answer, [E]); query(Step, Answer, E).

```

```

|
question(spirit) :- nl,write('What type of liquor do you want: ').
question(time_of_day) :- nl,write('What time of day would you like to enjoy this drink: ').
question(citrus) :- nl,write('What type of citrus would you like: ').
question(pallet) :- nl,write('Would you like savory or sweet: ').
question(flavor) :- nl,write('What flavor would you like your drink: ').
question(type_of_person) :- nl,write('What type of person are you: ').

```

## Output Screenshot:

### Run #1

```

% c:/Users/hp/Desktop/Thapar/TIET/sem6/AI/Lab_codes/cocktail_expert_system.pl compiled 0.00
sec, 48 clauses
?- begin.
Welcome to the Cocktail Expert System - AI PROLOG Project!

To get started , state your taste and preferences.
Please answer yes. or no. [the dot(.) is important.]
Ready?
|: yes.

What type of liquor do you want: tequila?
|: yes.

What time of day would you like to enjoy this drink: day_time?
|: no.

What time of day would you like to enjoy this drink: evening?
|: yes.

What type of citrus would you like: lime?
|: no.

What type of citrus would you like: grapefruit?
|: yes.
I think you will enjoy a paloma as your cocktail

Thank you from your host - DIVIJA
true.
?- █

```

## Run #2

```
?- begin.  
Welcome to the Cocktail Expert System - AI PROLOG Project!  
  
To get started , state your taste and preferences.  
Please answer yes. or no. [the dot(.) is important.]  
Ready?  
|: yes.  
  
What type of liquor do you want: tequila?  
|: no.  
  
What type of liquor do you want: vodka?  
|: yes.  
  
What time of day would you like to enjoy this drink: day_time?  
|: no.  
  
What time of day would you like to enjoy this drink: evening?  
|: yes.  
  
What flavor would you like your drink: lemon?  
|: no.  
  
What flavor would you like your drink: ginger?  
|: no.  
  
What flavor would you like your drink: i_just_want_to_look_cool?  
|: yes.  
I think you will enjoy a vodka_martini as your cocktail  
  
Thank you from your host - DIVIJA  
true.  
  
?-
```

## Run #3

```
?- begin.  
Welcome to the Cocktail Expert System - AI PROLOG Project!  
  
To get started , state your taste and preferences.  
Please answer yes. or no. [the dot(.) is important.]  
Ready?  
|: yes.  
  
What type of liquor do you want: tequila?  
|: no.  
  
What type of liquor do you want: vodka?  
|: no.  
  
What type of liquor do you want: rum?  
|: no.  
  
What type of liquor do you want: gin?  
|: yes.  
  
What time of day would you like to enjoy this drink: day_time?  
|: no.  
  
What time of day would you like to enjoy this drink: evening?  
|: no.  
  
Would you like savory or sweet: savory?  
|: no.  
  
Would you like savory or sweet: sweet?  
|: yes.  
I think you will enjoy a gimlet as your cocktail  
  
Thank you from your host - DIVIJA  
true.
```

#### Run #4

```
?- begin.  
Welcome to the Cocktail Expert System - AI PROLOG Project!  
  
To get started , state your taste and preferences.  
Please answer yes. or no. [the dot(.) is important.]  
Ready?  
|: yes.  
  
What type of liquor do you want: tequila?  
|: no.  
  
What type of liquor do you want: vodka?  
|: no.  
  
What type of liquor do you want: rum?  
|: yes.  
  
What flavor would you like your drink: coconut?  
|: no.  
  
What flavor would you like your drink: lime?  
|: no.  
  
What flavor would you like your drink: ginger?  
|: no.  
  
What flavor would you like your drink: strawberry?  
|: yes.  
I think you will enjoy a strawberry_daiquiri as your cocktail  
  
Thank you from your host - DIVIJA  
true.  
  
?- ■
```

#### Run #5

```
?- begin.  
Welcome to the Cocktail Expert System - AI PROLOG Project!  
  
To get started , state your taste and preferences.  
Please answer yes. or no. [the dot(.) is important.]  
Ready?  
|: yes.  
  
What type of liquor do you want: tequila?  
|: no.  
  
What type of liquor do you want: vodka?  
|: no.  
  
What type of liquor do you want: rum?  
|: no.  
  
What type of liquor do you want: gin?  
|: no.  
  
What type of liquor do you want: whiskey?  
|: yes.  
  
What type of person are you: old_soul?  
|: no.  
  
What type of person are you: ive_got_two_sides?  
|: no.  
  
What type of person are you: morning_person?  
|: no.  
  
What type of person are you: sophisticated?  
|: yes.  
I think you will enjoy a manhattan as your cocktail  
  
Thank you from your host - DIVIJA  
true.  
  
?- ■
```

Run #6

Welcome to the Cocktail Expert System - AI PROLOG Project!

To get started , state your taste and preferences.  
Please answer yes. or no. [the dot(.) is important.]  
Ready?  
|: yes.

What type of liquor do you want: tequila?  
|: no.

What type of liquor do you want: vodka?  
|: yes.

What time of day would you like to enjoy this drink: day\_time?  
|: no.

What time of day would you like to enjoy this drink: evening?  
|: no.

It appears that we do not have that drink on the menu  
Let's try again.

Welcome to the Cocktail Expert System - AI PROLOG Project!

To get started , state your taste and preferences.  
Please answer yes. or no. [the dot(.) is important.]  
Ready?  
|: yes.

What type of liquor do you want: tequila?  
|: yes.

What time of day would you like to enjoy this drink: day\_time?  
|: yes.

Would you like savory or sweet: savory?  
|: yes.

I think you will enjoy a bloody\_maria as your cocktail

Thank you from your host - DIVIJA