COURSE: COMP 4475

PROJECT 1 – A CHATBOT IN PROLOG
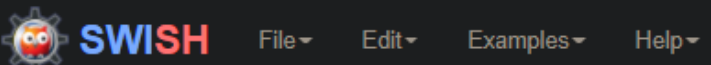
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Objective

In this project, we are required to create a chatbot using PROLOG for an online e-commerce business. The chabot is required to take user input and answer accordingly, i.e give a detailed description of the products. In this case, the e-commerce business is a pen reseller. Here is the DhavalThanki_Chatbot.pl for easy access to view the source code.

Fact definitions


```
SWISH    File▾    Edit▾    Examples▾    Help▾

Program ✕  +

1
2
3  pen(ballpoint, black, 2.50, 450).
4  pen(ballpoint, blue, 2.50, 463).
5  pen(ballpoint, red, 2.50, 550).
6  pen(ballpoint, green, 2.50, 150).
7
8  pen(fountain, black, 9.50, 70).
9  pen(fountain, blue, 9.50, 59).
10 pen(fountain, red, 9.50, 32).
11 pen(fountain, green, 9.50, 21).
12
13 pen(ink, black, 4.50, 212).
14 pen(ink, blue, 4.50, 256).
15 pen(ink, red, 4.50, 90).
16 pen(ink, green, 4.50, 45).
17
18 pen(gel, black, 5.50, 227).
19 pen(gel, blue, 5.50, 263).
20 pen(gel, red, 5.50, 55).
21 pen(gel, green, 5.50, 21).
22
23 pen(calligraphy, black, 10.0, 43).
24 pen(calligraphy, bamboo, 12.50, 22).
25
26
```

In the figure above, we begin by declaring the facts relating to the product offered by the e-commerce business, here I provide the necessary attributes that will be used later on to display data to the user regarding these products.

Logical definitions

The Main driving loop.

```prolog
28 run:-
29     format('    Welcome to the store that sells just pens, any kind of pen you need.
30     You can start off by typing the type of pen you want to know more about.
31         Examples include; Ballpoint, Ink, Fountain, etc.'),
32     responseLoop(_).
33
34 responseLoop(_):-
35     format('\nPlease make a selection now'),
36         read(X),
37     format('Choice recorded was: ~w\n', [X]),
38         check(X).
```

This loop is used to make sure that the user can constantly enter responses to the chatbot. The loop's

main function is to read and parse the words that have to be manually coded in, as shown in the

screenshot below. However, the main driving loop is useful for cycling through the input of the user

without having to restart.

Checking the user input.

```prolog
42 check(stop):-
43     format('Have a nice day, goodbye!').
44
45 check(fountain):-
46         format('We do a have a few here and there, allow me to look it up.'),
47         fountain_pen(fountain).
48
49
50 check(ballpoint):-
51         format('We do a have a few here and there, allow me to look it up.'),
52         ballpoint_pen(ballpoint).
53
54
55 check(ink):-
56         format('We do a have a few here and there, allow me to look it up.'),
57         ink_pen(ink).
58
59 check(gel):-
60         format('We do a have a few here and there, allow me to look it up.'),
61         gel_pen(gel).
62
63 check(calligraphy):-
64         format('We do a have a few here and there, allow me to look it up.'),
65         calligraphy_pen(calligraphy).
```

In the screenshot above, we can see that there are a few check predicates. These are used to help direct the Chabot into displaying data that relates specifically to what the user has requested i.e. if user has entered *"ballpoint"*, then all data relating to ball point is returned.

Display data.

```prolog
68  fountain_pen(W):-
69      pen(W, X, Y, Z),
70      format('~nFor ~w pens we have about ~2f ~w pens left in stock, each one costs $~2f', [W, Z, X, Y]),
71          responseLoop(_).
72
73  ballpoint_pen(W):-
74      pen(W, X, Y, Z),
75      format('~nFor ~w pens we have about ~2f ~w pens left in stock, each one costs $~2f', [W, Z, X, Y]),
76          responseLoop(_).
77
78  ink_pen(W):-
79      pen(W, X, Y, Z),
80      format('~nFor ~w pens we have about ~2f ~w pens left in stock, each one costs $~2f', [W, Z, X, Y]),
81          responseLoop(_).
82
83  gel_pen(W):-
84      pen(W, X, Y, Z),
85      format('~nFor ~w pens we have about ~2f ~w pens left in stock, each one costs $~2f', [W, Z, X, Y]),
86          responseLoop(_).
87
88  calligraphy_pen(W):-
89      pen(W, X, Y, Z),
90      format('~nFor ~w pens we have about ~2f ~w pens left in stock, each one costs $~2f', [W, Z, X, Y]),
91          responseLoop(_).
```

Here we use data gathered from user inputs as well as data from the facts set earlier, and we print it out to the user in a manner that is legible. The data is printed out using *format*, in regards to keeping the appeal of cleaner code.

Results

```
run.                                                              ⊕ — ⊗

        Welcome to the store that sells just pens, any kind of pen you need.
        You can start off by typing the type of pen you want to know more about.
               Examples include; Ballpoint, Ink, Fountain, etc.
Please make a selection now
       ballpoint
Choice recorded was: ballpoint
We do a have a few here and there, allow me to look it up.
For ballpoint pens we have about 450.00 black pens left in stock, each one costs $2.50
Please make a selection now
       b
Choice recorded was: b

For ballpoint pens we have about 463.00 blue pens left in stock, each one costs $2.50
Please make a selection now
       b
Choice recorded was: b

For ballpoint pens we have about 550.00 red pens left in stock, each one costs $2.50
Please make a selection now
b                                                          Send   Abort

?-
   run.
```

```
run.

        Welcome to the store that sells just pens, any kind of pen you need.
        You can start off by typing the type of pen you want to know more about.
                Examples include; Ballpoint, Ink, Fountain, etc.
Please make a selection now
        ballpoint
Choice recorded was: ballpoint
We do a have a few here and there, allow me to look it up.
For ballpoint pens we have about 450.00 black pens left in stock, each one costs $2.50
Please make a selection now
        b
Choice recorded was: b

For ballpoint pens we have about 463.00 blue pens left in stock, each one costs $2.50
Please make a selection now
        b
Choice recorded was: b

For ballpoint pens we have about 550.00 red pens left in stock, each one costs $2.50
Please make a selection now
        stop
Choice recorded was: stop
Have a nice day, goodbye!
 true                                                                                  1
 Next   10   100   1,000   Stop

?-
    run.
```

```
For gel pens we have about 21.00 green pens left in stock, each one costs $5.50
Please make a selection now
        stop
Choice recorded was: stop
Have a nice day, goodbye!
 true                                                                                  1


?-
    run.
```