

Problem statement 1: Gaming

- Code involves 3 players - User (X), Computer 1 (O), Computer 2 (T)
- It is assumed that Computer 1 and Computer 2 players are playing against user (X) but they are not playing against each other.
- Draw board function draws 6X6 board
- Endofgame function checks for column or row or diagonal win
- Alpha Beta (max and min) functions are created to check alpha – beta values for each position
- Static Evaluation is considered as below: -
 - If User (X) wins – Static Evaluation is -1
 - If User (O or T) wins – Static Evaluation is +1
 - If User (no one) wins – Static Evaluation is 0

Output

```
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
```

Insert the X coordinate: 0

Insert the Y coordinate: 0

```
X| O| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
```

```
X| O| T| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
```

Insert the X coordinate: 1

Insert the Y coordinate: 0

```
X| O| T| O| -| -|
X| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
-| -| -| -| -| -|
```

X	O	T	O	T	-
X	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

Insert the X coordinate: 2

Insert the Y coordinate: 0

X	O	T	O	T	-
X	O	-	-	-	-
X	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

X	O	T	O	T	-
X	O	T	-	-	-
X	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

Insert the X coordinate: 3

Insert the Y coordinate: 0

O	O	T	O	T	-
X	O	T	-	-	-
X	-	-	-	-	-
X	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

O	O	T	O	T	-
X	O	T	T	-	-
X	-	-	-	-	-
X	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

Insert the X coordinate: 4

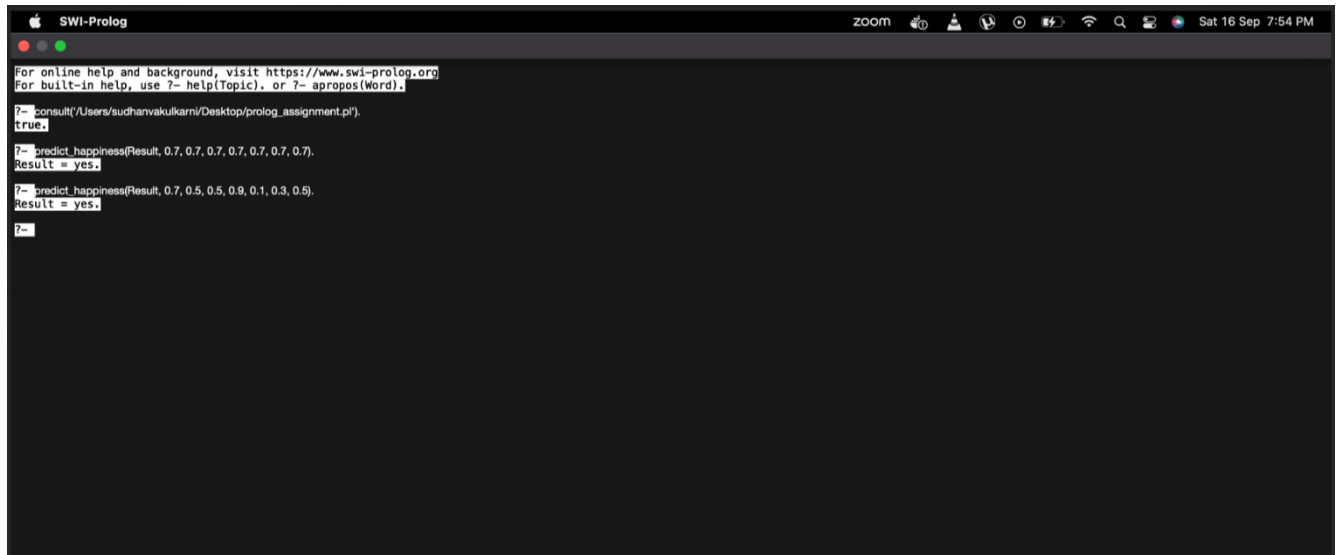
Insert the Y coordinate: 0

O	O	T	O	T	-
X	O	T	T	-	-
X	-	-	-	-	-
X	-	-	-	-	-
X	-	-	-	-	-
-	-	-	-	-	-

The winner is X!

Problem Statement 2 - Logic

- Code is developed to derive decision tree. Code file is shared as “ACI_Assignment-2_Group-107-prolog_assignment.pl”. It is run and below is screen shot of results.



```
SWI-Prolog
For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- consult('/Users/sudhanvakulkarni/Desktop/prolog_assignment.pl').
true.

?- predict_happiness(Result, 0.7, 0.7, 0.7, 0.7, 0.7, 0.7).
Result = yes.

?- predict_happiness(Result, 0.7, 0.5, 0.5, 0.9, 0.1, 0.3, 0.5).
Result = yes.

?-
```