GHARDA FOUNDATION
GHARDA INSTITUTE OF TECHNOLOGY, LAVEL
Department of Computer Engineering

Evaluation Sheet

Class: TE-Computer Engineering Sem: VI

Subject: **Artificial Intelligence Lab(CSL604)**

Experiment No: 8

Title of Experiment: Study the implementation of logical programs using PROLOG.

Name of Student: Niraj Nitin Surve Roll No: 68

Date of Performance: 01/03/2023

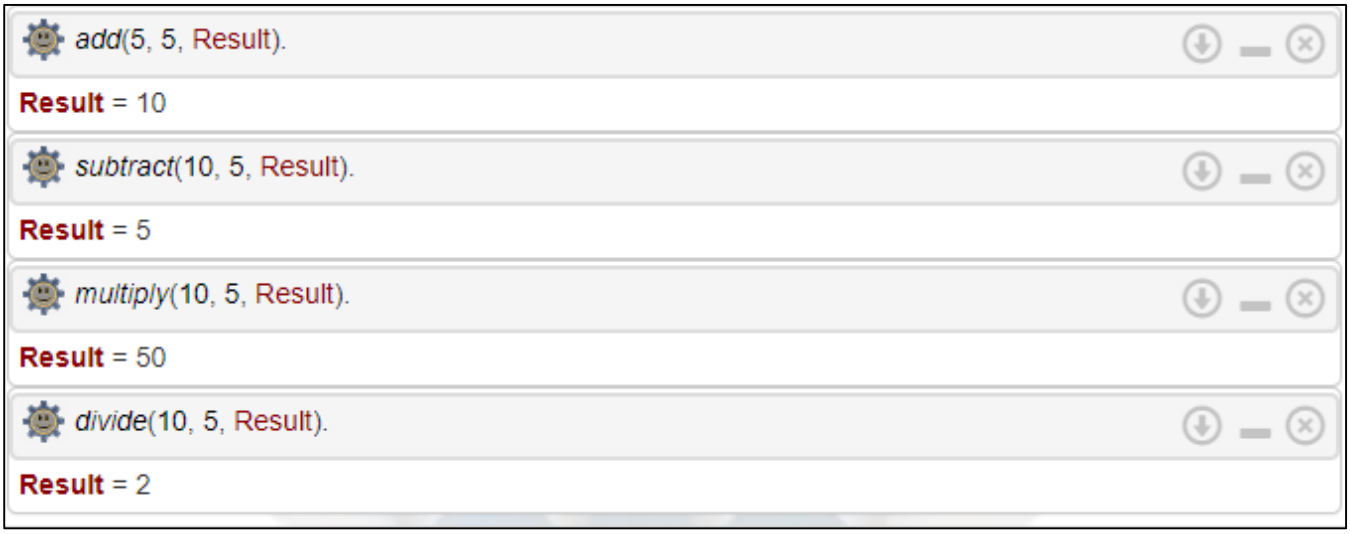
Sr. No.	Evaluation Criteria	Max Marks	Marks Obtained
1	Practical Performance	8	
2	Oral	5	
3	Timely Submission	2	
	Total	15	

Signature of Subject Teacher
(Prof. M. A. Khandke)

1) Program to perform Arithmetic Operations –

```
add(X, Y, Z) :- Z is X + Y.

subtract(X, Y, Z) :- Z is X - Y.

multiply(X, Y, Z) :- Z is X * Y.

divide(X, Y, Z) :- Z is X / Y.
```

Output –



2) Program to check the number is even, odd or prime –

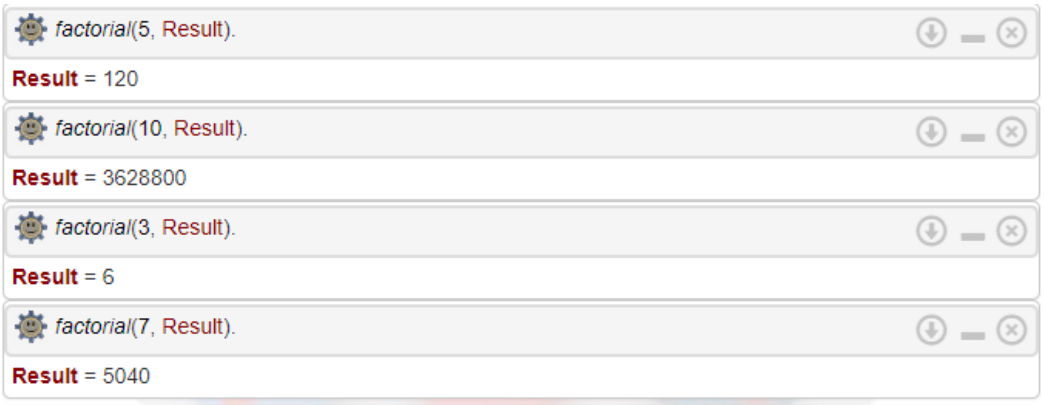
```
is_even(X) :-
    X mod 2 =:= 0.
is_odd(X) :-
    X mod 2 =:= 1.


is_prime(X) :-
    X > 1,
    Upper is floor(sqrt(X)),
    \+ (between(2, Upper, Y), X mod Y =:= 0).
```

Output –

3) Program to calculate factorial of a number –

```
factorial(0, 1).
factorial(N, Result) :-
    N > 0,
    Prev is N - 1,
    factorial(Prev, PrevResult),
    Result is N * PrevResult.
```

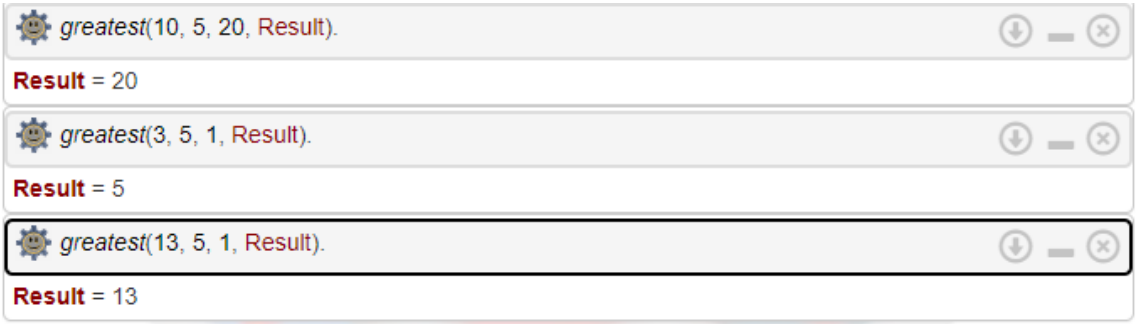
Output –



4) Program to find the greatest among three numbers –

```
greatest(X, Y, Z, G) :-
    X >= Y, X >= Z,
    G is X.
greatest(X, Y, Z, G) :-
    Y >= X, Y >= Z,
    G is Y.
greatest(_, _, Z, G) :-
```

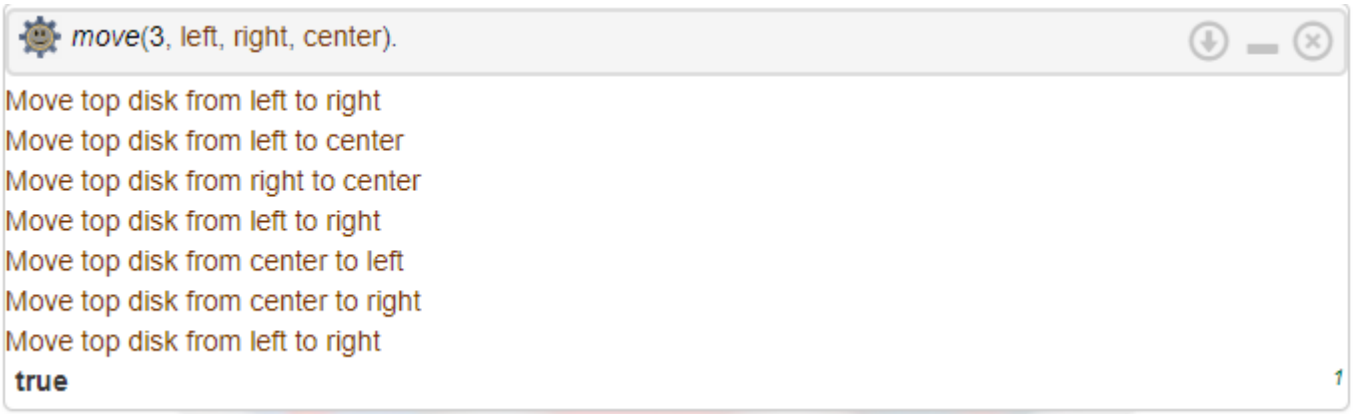
Output –



5) Program to solve the problem of Tower Of Honoi (TOH) –

```
move(1,X,Y,_) :-
   write('Move top disk from '), write(X), write(' to '), write(Y), nl.
move(N,X,Y,Z) :-
   N>1,
   M is N-1,
   move(M,X,Z,Y),
   move(1,X,Y,_),
   move(M,Z,Y,X).
```

Output –


move(3, left, right, center).
Move top disk from left to right
Move top disk from left to center
Move top disk from right to center
Move top disk from left to right
Move top disk from center to left
Move top disk from center to right
Move top disk from left to right
true
1