Experiment No: 2
Experiment Name: Basic Arithmetical Operations of Prolog.

Objectives:

Do the following operations :

Write a rule to show the -

I. summation of two numbers.
II. subtraction of two numbers.
III. multiplication of two numbers.
IV. division of two numbers.
V. maximum number from given three numbers.
VI. X is raised to Y power.
VII. remainder of two numbers.
VIII. bitwise AND operation between two numbers.
IX. bitwise OR operation between two numbers.
X. bitwise XOR operation between two numbers.
XI. bitwise left shift operation of the number.
XII. bitwise right shift operation of the number.

Solution:

L.W: Addition and finding average:

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go:-
write(“Enter your first number: ”), nl,
read(X), nl,
write(“Enter your second number: ”), nl,
read(Y), nl,
sum(X,Y).
sum(X,Y):- S is X+Y, nl,
write(‘sum is: ’), nl,
write(S).
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addition(Sum):-
write('1st number: '),
read(P),
write('2nd number: '),
read(Q),
Sum is P+Q.

subtraction(Sub):-
write('1st number: '),
read(P),
write('2nd number: '),
read(Q),
Sum is P-Q.

multiplication(Mul):-
write('1st number'),
read(P),
write('2nd number'),
read(Q),
Mul is P*Q.

division(Div):-
write('1st number'),
read(P),
write('2nd number'),
read(Q),
Div is P/Q.

power(Pow):-
write('1st number'),
read(P),
write('2nd number'),
read(Q),
Pow is P**Q.

remainder(Rem):-
write('1st number'),
read(P),
write('2nd number'),
read(Q),
Rem is P mod Q.

and(And):-
write('1st number'),
read(P),
write('2nd number'),
read(Q),
And is P/\Q.

or(Or):-
write('1st number'),
read(P),
write('2nd number'),
read(Q),
Or is P\/Q.

xor(Xor):-
write('1st number'),
read(P),
write('2nd number'),
read(Q),
Xor is P xor Q.

maximum(Max):-
write('1st number'),
read(X),
write('2nd number'),
read(Y),
write('3rd number'),
read(Z),
(X>Y,X>Z -> Max is X,
write(Max);
 Y>X,Y>Z -> Max is Y,
write(Max);
 Max is Z, write(Max)).


leftsft(Sft):-
write('1st number: '),
read(A),
Sft is A<< 2


rightsft(Sft):-
write('1st number: '),
read(A),
Sft is A>> 2.


root(X1,X2):-
write('Enter Co-efficient
of x*x,a: '),
read(A),
write('Enter Co-efficient
of x,b: '),
read(B),
write('Enter Co-efficient
of 1, c: '),
read(C),
D is (B*B - 4*A*C),
D>0,
X1 is ((-B +
sqrt(D))/(2*A*C)),
X2 is ((-B -
sqrt(D))/(2*A*C))
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