**FACTORIAL, GCD & FIBONACCI SERIES**

1. **WRITE A PROLOG PROGRAM TO FIND OUT THE FACTORIAL OF A GIVEN NUMBER**

**CODE**

factorial(0,1)

factorial(N,F):- N>0, N1 is N-1, factorial(N1,F1), F is N\*F

**?- factorial (5,x), write(x)**

**SOLUTION**

**120 Yes**

1. **WRITE A PROLOG PROGRAM TO FIND OUT THE GCD OF TWO NUMBERS**

**CODE**

gcd(x,x,x)

gcd(x,y,D) :- x<y is y-x, gcd(x,y,D)

gcd(x,y,D):- x>y is x-y, gcd(y,x,D)

**?- gcd(2,4,D), write(D)**

**SOLUTION**

**2 Yes**

1. **WRITE A PROLOG PROGRAM TO FIND OUT THE NTH TERM OF THE FIBONACCI SERIES**

**CODE**

fibonacci(1,1)

fibonacci(2,1)

fibonacci(N,F):- N>2, N1 is N-1, Fibonacci(N1,F1), N2 is N-2, fibonacci(N2,F2)

F is F1+F2

**?- fibonacci(5,F), write(F)**

**SOLUTION**

**5 Yes**