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----------PRACTICAL 01----------

1.1) Write a program to find a factorial.

```
%practical 1.1 Write a program to find a factorial

clc;
clear all;
close all;

n = 10;
f = 1;

for i = 1:n
    f = f * i
endfor
```

Command Window

```
f  =  1
f  =  2
f  =  6
f  =  24
f  =  120
f  =  720
f  =  5040
f  =  40320
f  =  362880
f  =  3628800
```

1.2) Make a user defined function that find factorial of given number.

```
% prac1.2 Make a user defined function that find factorial of given number
```

```
clc;
clear all;
close all;
n = input('Enter value n: ');

fact = fn_fact(n);

printf("Factorial of %d is %d\n", n, fact)
```

fn_fact(file):

```
function [fact] = fn_fact(n)

    fact = 1;

    for i = 1:n
        fact = fact * i;
    endfor

endfunction
```

Command Window

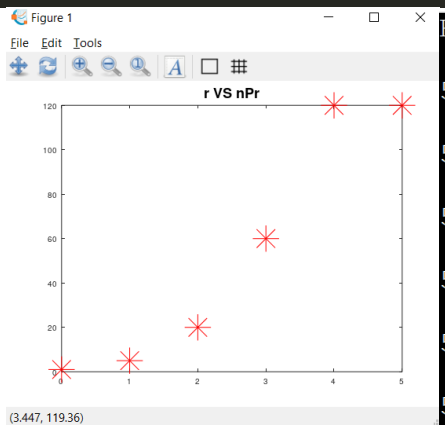
```
Enter value n: 5
Factorial of 5 is 120
```

1.3) Write a program to calculate permutation nPr.

```
## 1.3 Write a program to calculate permutation nPr
clc;
clear all;
close all;
n = input("Enter the n :");
nPr = zeros(1, n + 1);
r = 0:n;

for i = 0:n
    nPr(i + 1) = fn_fact(n) / fn_fact(n - i);
    printf("\n%dp%d = %d\n", n, i, nPr(i + 1));
endfor

plot(r, nPr, "r*", "Markersize", 17)
title("r VS nPr", "fontsize", 18)
```




```
Enter the n :5

5p0 = 1

5p1 = 5

5p2 = 20

5p3 = 60

5p4 = 120

5p5 = 120
```

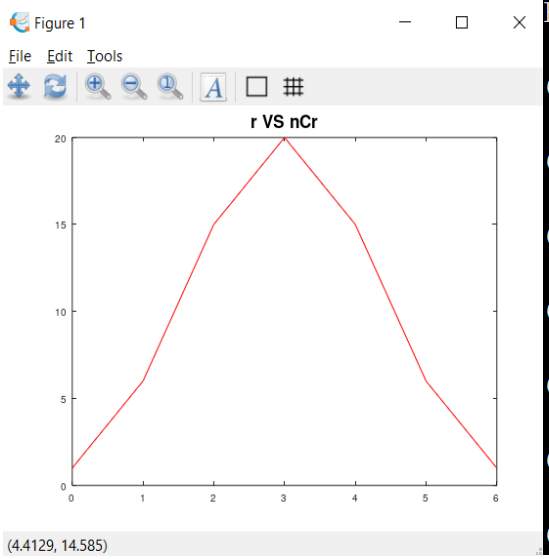
1.4) Write a program to calculate combination nCr.

```
##1.4 Write a program to calculate combination nCr
clc;
clear all;
close all;
n = input("Enter the n: ");
nCr = zeros(1, n + 1);
```

```
r = 0:n;

for i = 0:n
    nCr(i + 1) = fn_fact(n) / (fn_fact(n - i) * fn_fact(i));
    printf("\n%dC%d = %d\n", n, i, nCr(i + 1));
endfor

plot(r, nCr, "r-", "Markersize", 18)
title("r VS nCr", "fontsize", 17)
```




```
Enter the n: 6

6C0 = 1

6C1 = 6

6C2 = 15

6C3 = 20

6C4 = 15

6C5 = 6

6C6 = 1
```