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Branch - CBA Batch - 41
PNS Practical 2

1. Relative Frequency Definition : Relational Operator (without if else)

Code :

File - tosscoin.m

```
function outpt = tosscoin(n)
    for i = 1:n
        rndm = randi(2,1);
        if rndm == 1
            outpt(1,i) = "H";
        else
            outpt(1,i) = "T";
        endif
    endfor
endfunction
```

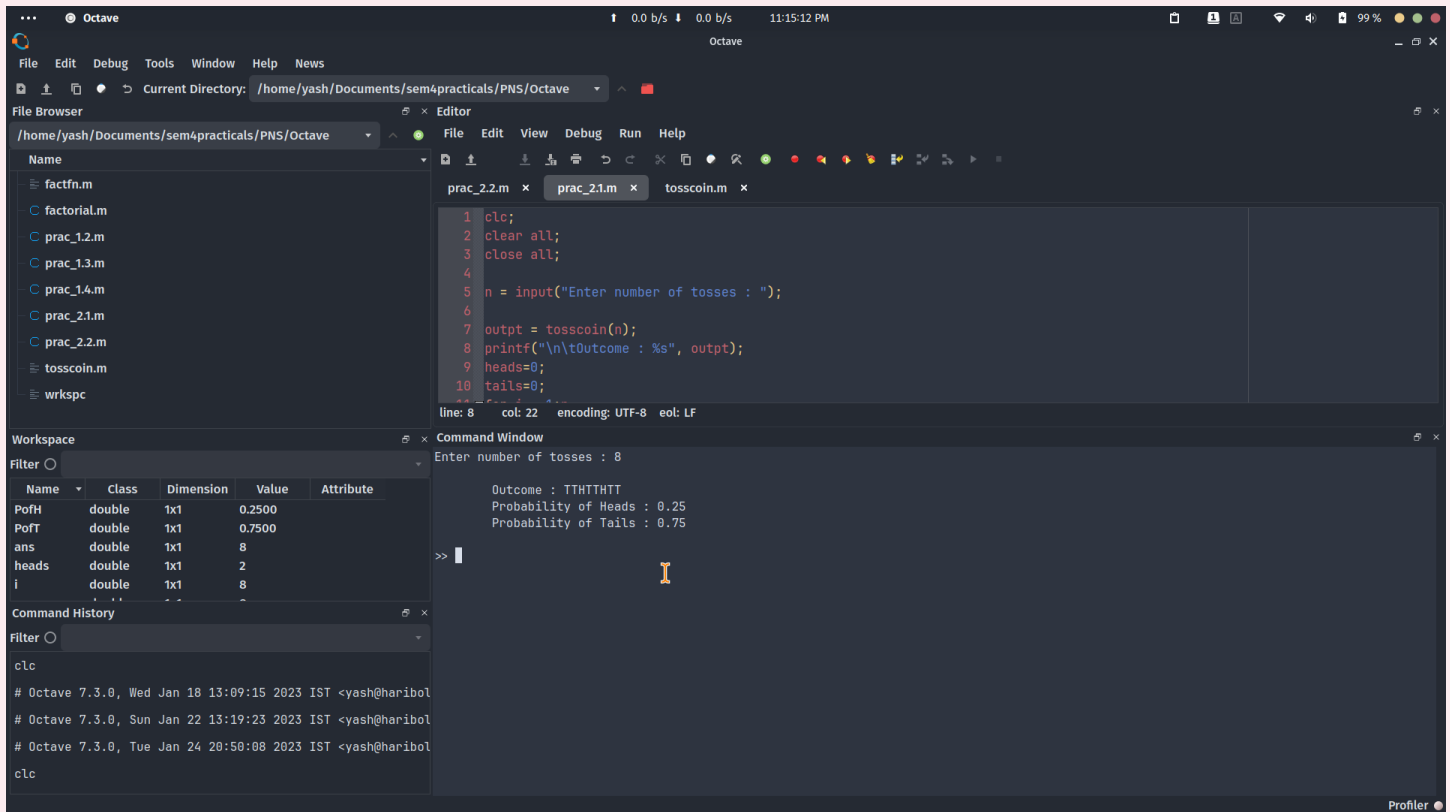
```
clc;
clear all;
close all;

n = input("Enter number of tosses : ");

outpt = tosscoin(n);
printf("\n\tOutcome : %s", outpt);
heads=0;
tails=0;
for i = 1:n
    heads = heads + (outpt(i)=="H");
    tails = tails + (outpt(i)=="T");
endfor
```

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Output :



The screenshot shows the Octave IDE interface. The editor window displays a script named `prac_2.1.m` with the following code:

```
1 clc;
2 clear all;
3 close all;
4
5 n = input("Enter number of tosses : ");
6
7 outpt = tosscoin(n);
8 printf("\n\tOutcome : %s", outpt);
9 heads=0;
10 tails=0;
```

The Command Window shows the execution output:

```
Enter number of tosses : 8

Outcome : TTHTTHTT
Probability of Heads : 0.25
Probability of Tails : 0.75

>>
```

The Workspace window shows the following variables:

Name	Class	Dimension	Value	Attribute
PofH	double	1x1	0.2500	
PofT	double	1x1	0.7500	
ans	double	1x1	8	
heads	double	1x1	2	
i	double	1x1	8	

The Command History window shows the following commands:

```
clc
# Octave 7.3.0, Wed Jan 18 13:09:15 2023 IST <yash@haribol
# Octave 7.3.0, Sun Jan 22 13:19:23 2023 IST <yash@haribol
# Octave 7.3.0, Tue Jan 24 20:58:08 2023 IST <yash@haribol
clc
```

2. Relative Frequency Definition : find and length function

Code :

```
clc;
clear all;
close all;

n = input("Enter number of tosses : ");

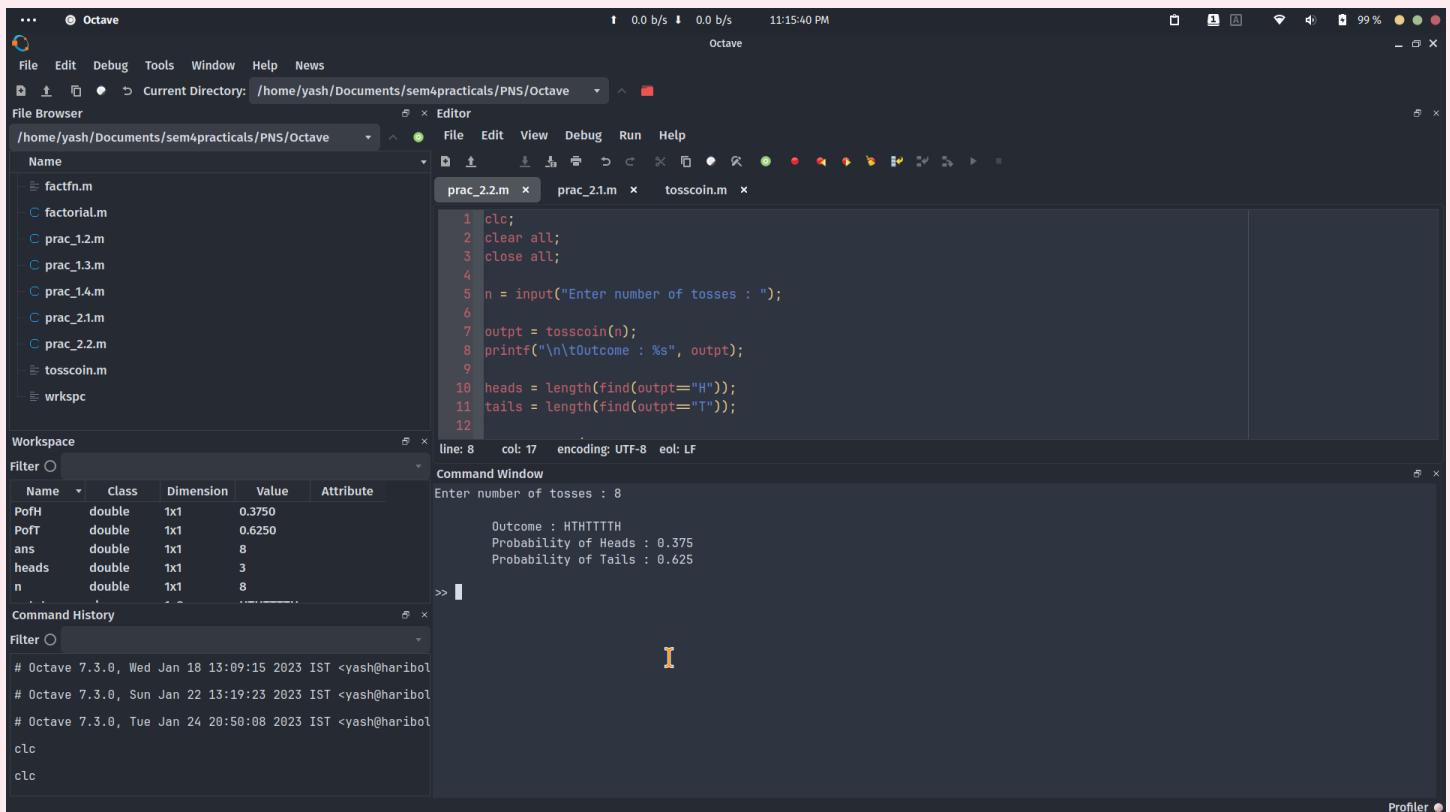
outpt = tosscoin(n);
printf("\n\tOutcome : %s", outpt);
```

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```
heads = length(find(outpt=="H"));
tails = length(find(outpt=="T"));

PofH = heads/n;
printf("\n\tProbability of Heads : %d", PofH);
PofT = tails/n;
printf("\n\tProbability of Tails : %d", PofT);
```

Output :



The screenshot displays the Octave IDE interface. The main editor window shows a script named `prac_2.2.m` with the following code:

```
1 clc;
2 clear all;
3 close all;
4
5 n = input("Enter number of tosses : ");
6
7 outpt = tosscoin(n);
8 printf("\n\tOutcome : %s", outpt);
9
10 heads = length(find(outpt=="H"));
11 tails = length(find(outpt=="T"));
12
```

The Command Window shows the execution results:

```
Enter number of tosses : 8

Outcome : HTHHTTTH
Probability of Heads : 0.375
Probability of Tails : 0.625
```

The Workspace window displays the following variables:

Name	Class	Dimension	Value	Attribute
PofH	double	1x1	0.3750	
PofT	double	1x1	0.6250	
ans	double	1x1	8	
heads	double	1x1	3	
n	double	1x1	8	

The Command History window shows the following commands:

```
# Octave 7.3.0, Wed Jan 18 13:09:15 2023 IST <yash@haribol>
# Octave 7.3.0, Sun Jan 22 13:19:23 2023 IST <yash@haribol>
# Octave 7.3.0, Tue Jan 24 20:50:08 2023 IST <yash@haribol>
clc
clc
```