

Name - Yash Lakhtariya
Enrollment number - 21162101012
Branch - CBA Batch - 41
PNS Practical 7

Aim : To study Central Limit Theorem

Code : (as per theory)

```
clc;
clear all;
close all;

A = [1 2 3 4 5 6];
pA = [1/6 1/6 1/6 1/6 1/6 1/6];
d1 = bar(A, pA, 1);
set(d1, 'FaceColor', '#a347ba');
d = 4;

B = [];
for k = 2:d
    for i = 1:6
        tmp = A+i;
        B = [B tmp];
    endfor

    for j = k:(6*k)
        pB(j-(k-1)) = length(find(B==j)) / (6^k);
    endfor

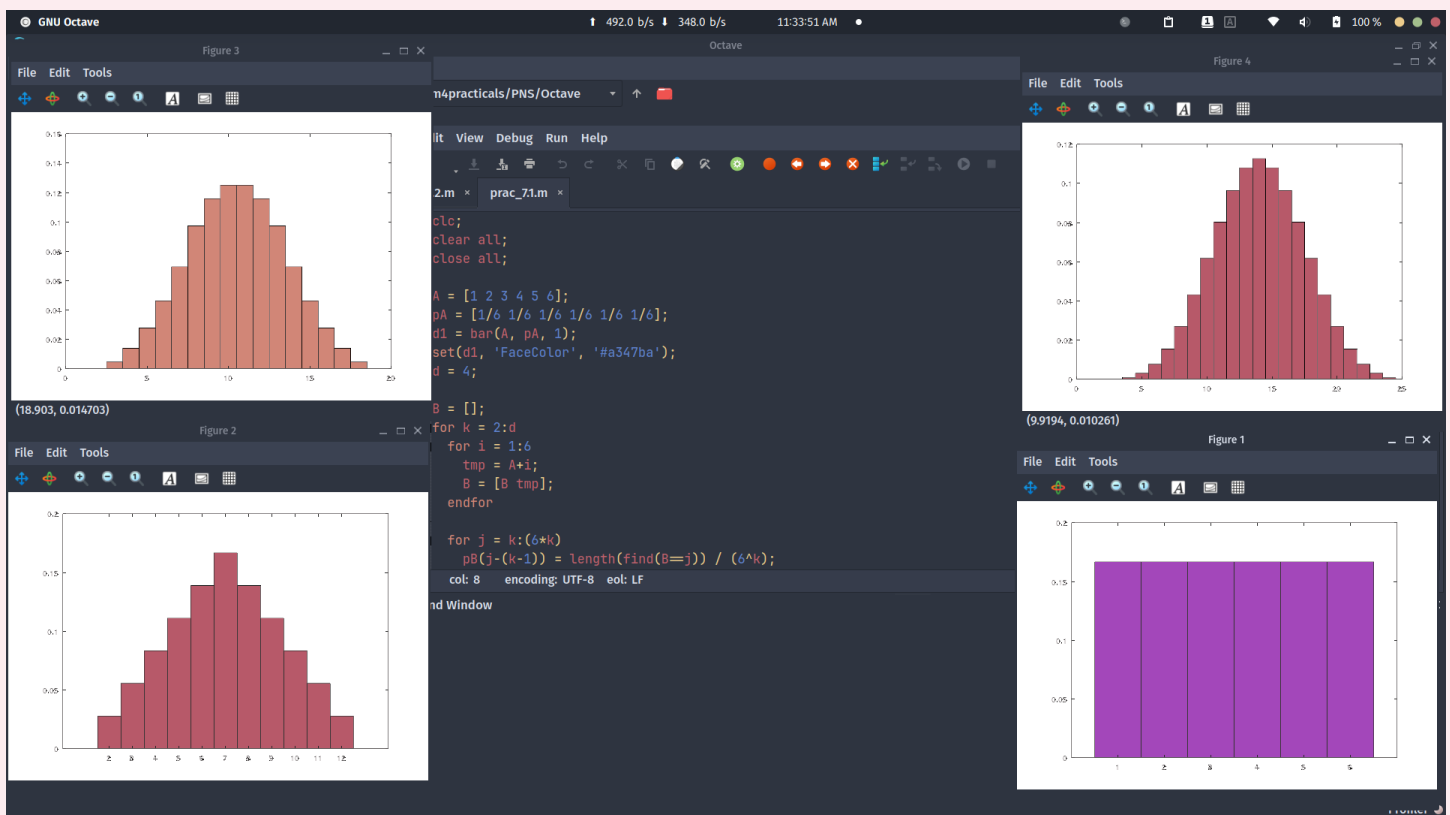
    figure
    d2 = bar(k:(6*k), pB, 1);

    if mod(k,2) == 0
        set(d2, 'FaceColor', '#b75969');
    else
        set(d2, 'FaceColor', '#d18677');
    endif
```

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```
A = B;  
B = [];  
endfor
```

Output :



Code : (as per practical)

```
clear all;  
close all;  
clc;  
  
d = 64;  
r = 6432;
```

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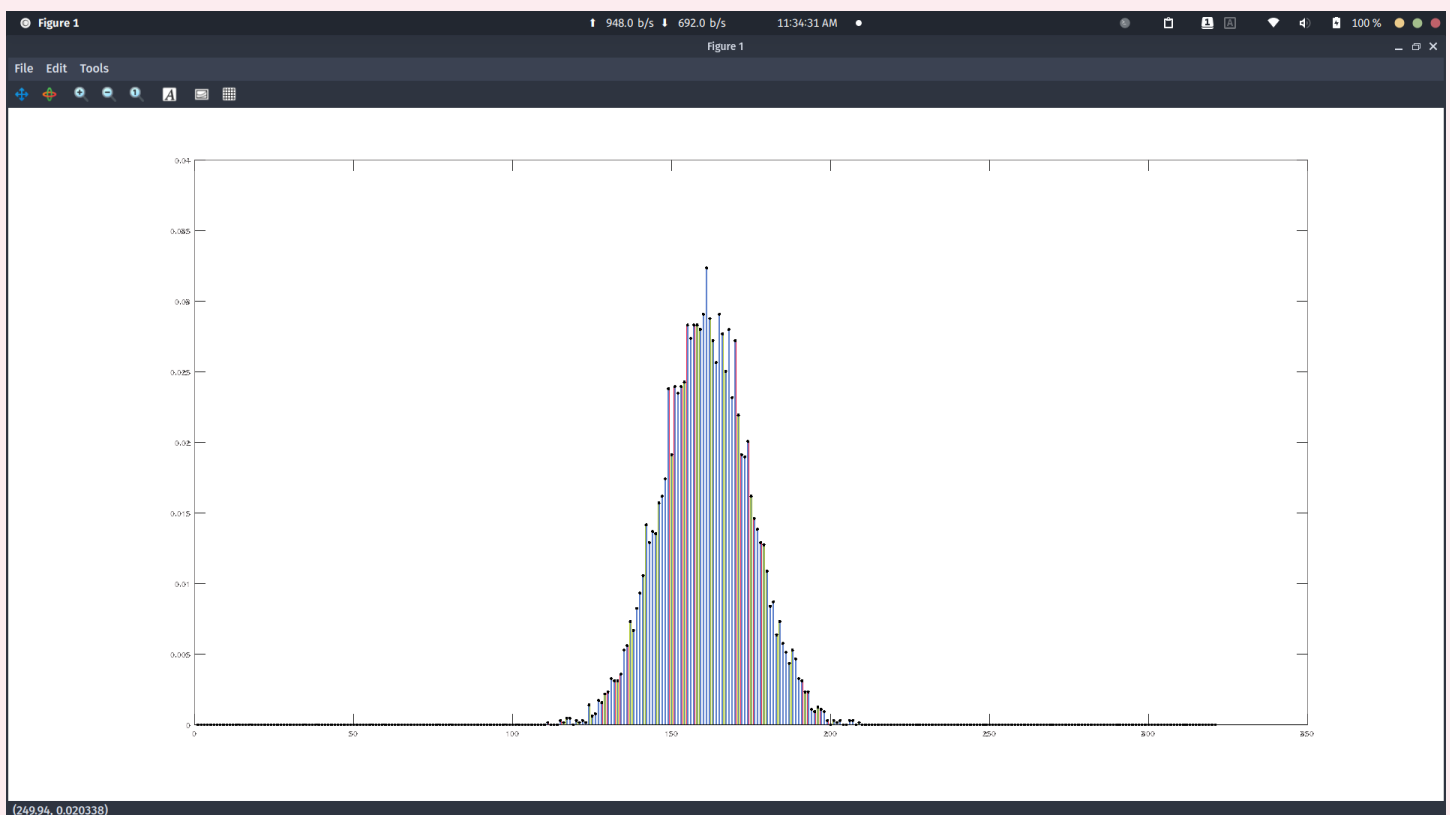
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```
for i = 1:d
    A = randi([1, 6], i, r);
    B = sum(A, 1); # 1 for vertical, 2 for horizontal sum

    for k = i:6*i
        p(k-(i-1)) = length(find(B==k)) / r;
    endfor
endfor

stem(p, 'k.', 'Color', '#5e81cc', 'Markersize', 10, 'LineWidth', 2)
figure
bar(d:6*d, p, 1, 'facecolor', '#b75969')
```

Output :



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