THE INDOOR KITES

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%_STAT 830 : Theory 1-
.....................................................................

% Generate 5 Random walks or Realization

% R matrix is a 5x10000 matrix of random variables from Unif(0,1)
% Step is using R to come up with the jumps of +1 or -1
% X is the matrix of 5 realizations

R=rand(5,10000);
X=zeros(5,10000);
Step=zeros(5,10000);



for i=1:5
for j=1:10000
    if R(i,j)<.5
    Step(i,j)=-1;
    else
        Step(i,j)=1;
    end
end
end

% Initializing Random Walk at 100 i.e. our original starting point is
 100

for i=1:5
    X(i,1)=100;
end

for i=1:5
    for j=1:9999
        X(i,j+1)=X(i,j)+Step(i,j);
    end
end


% Discretizing the X-axis - the number of flips

n=zeros(1,10000);

n(1)=0;

for i=1:9999
    n(i+1)=n(i)+1;
end
```

```
% Plotting 5 realizations on the same diagram

figure(1)
plot(n,X)
legend('Realization 1','Realization 2','Realization 3','Realization
 4'.......
    ,'Realization 5','location','southwest')
title('5 different Random Walk')
xlabel('Number of Steps')
ylabel('Stock Price')


% Same 5 realization seperately

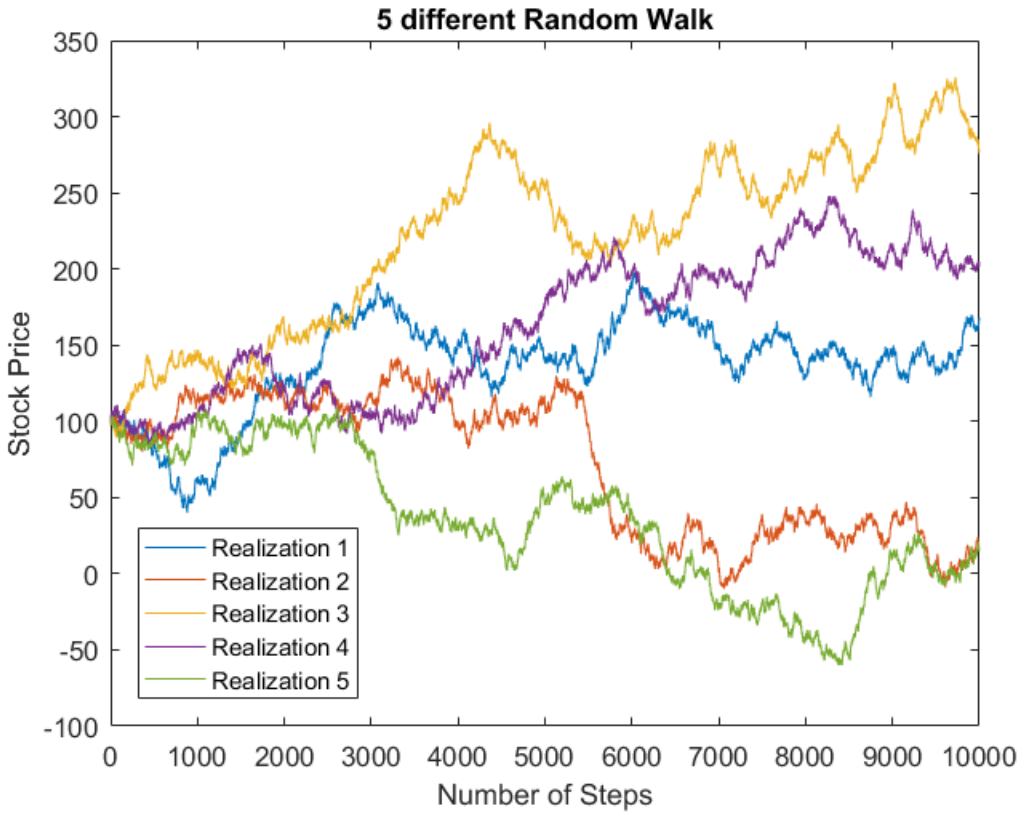
figure(2)
subplot(3,2,1)
plot(n,X(1,:),'b')
title('Realization 1')
xlabel('Number of Steps')
ylabel('Stock Price')

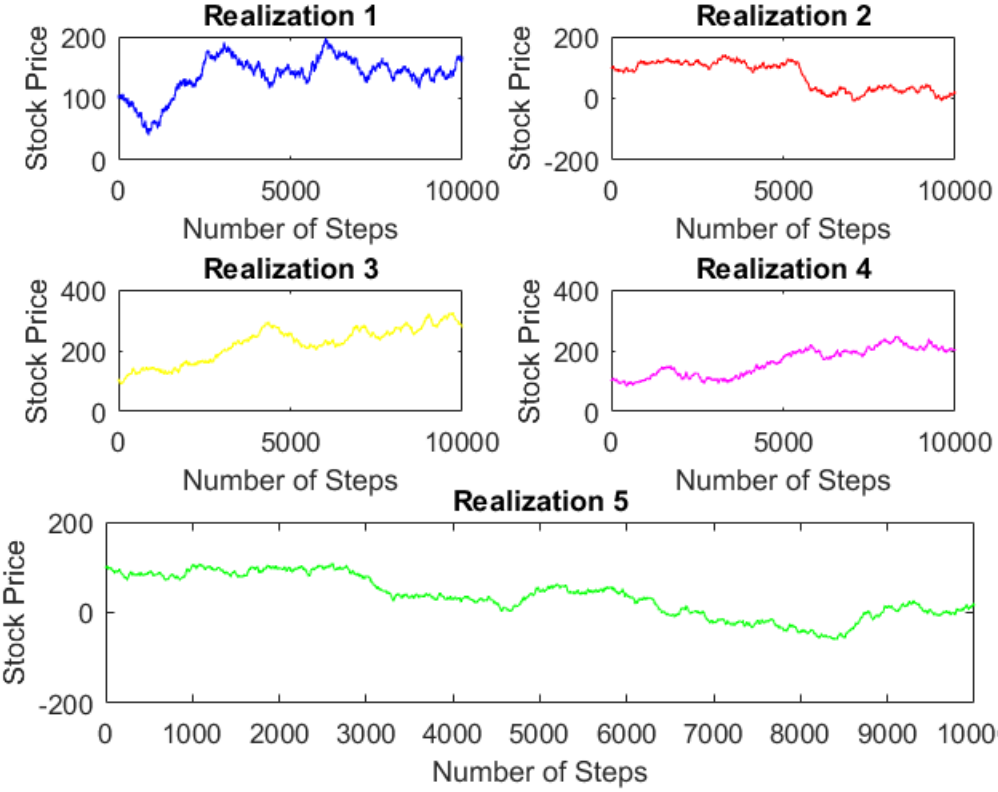
subplot(3,2,2)
plot(n,X(2,:),'r')
title('Realization 2')
xlabel('Number of Steps')
ylabel('Stock Price')

subplot(3,2,3)
plot(n,X(3,:),'y')
title('Realization 3')
xlabel('Number of Steps')
ylabel('Stock Price')

subplot(3,2,4)
plot(n,X(4,:),'m')
title('Realization 4')
xlabel('Number of Steps')
ylabel('Stock Price')

subplot(3,2,[5 6])
plot(n,X(5,:),'g')
title('Realization 5')
xlabel('Number of Steps')
ylabel('Stock Price')
```


5 different Random Walk
Stock Price
Number of Steps
Realization 1
Realization 2
Realization 3
Realization 4
Realization 5


Realization 1
Realization 2
Realization 3
Realization 4
Realization 5
Stock Price
Number of Steps

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