Contents

```matlab
clc;
clear;
close all;
```

Define the parameters of the Uniform distribution

```matlab
a = 5;   %Lower bound
b = 10; %Upper bound
```

## Generate random samples from the Gaussian distribution

```matlab
sample_size = 1000;
%random_samples = a + (b - a) * rand(sample_size, 1);
```

Compute the PDF and CDF

```matlab
x = linspace(a, b, 100); %Range of valuse for PDF and CDF
pdf_values = 1 / (b - a) * ones(size(x));    %Uniform distribution has constant PDF within the range
cdf_values = (x - a) / (b - a);
cdf_values(cdf_values > 1) - 1; % Adjust valuse greater than 1 to 1 (upper bound)
```

Plot the PDF

```matlab
figure;
plot(x, pdf_values, 'b-', 'LineWidth', 2);
title('Probability Density Function(PDF) of Uniform Distribution');
xlabel('Random Vaiable (X)');
ylabel('PDF f(X)');
grid on;
```

Probability Density Function(PDF) of Uniform Distribution
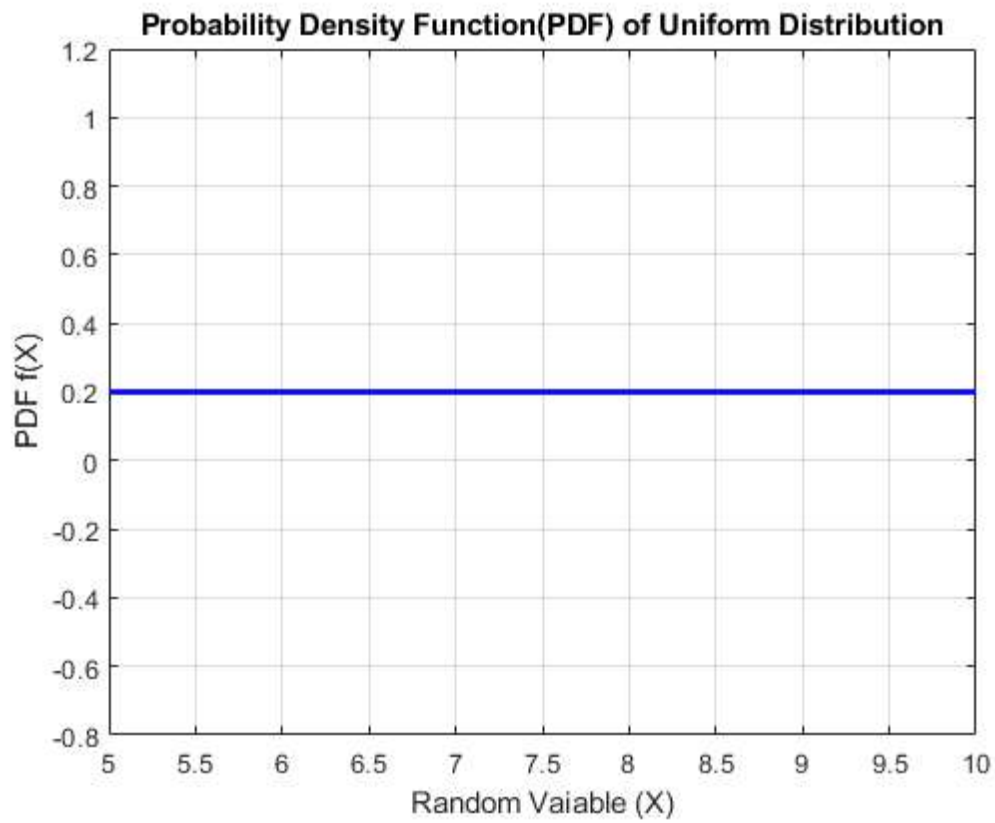
Plot the CDF

```
figure;
plot(x, cdf_values, 'r-', 'Linewidth', 2);
title('Cumulative Density Function(CDF) of Uniform Distribution');
xlabel('Random Vaiable (X)');
ylabel('CDF f(X)');
grid on;
```

Cumulative Density Function(CDF) of Uniform Distribution