

MATLAB CODE FOR SERIAL INPUTTING AND PLOTTING OF WAVEFORM

```
clear all;clc;close all;

arduino=serial('COM6','BaudRate',9600);

fopen(arduino);

x=1:100;

for i=1:length(x)
    y(i)=fscanf(arduino,'%d');
end
t = y/1024*5;
A = y;
count=zeros(0,1023);
for k=1:1024
    count(k)=length(find(A==(k-1)));
end
m = max(count);
in = find(count==m);

fclose(arduino);

disp('making plot..')
figure('Name','The Digital Values From Serial Port');
subplot(2,2,1)
plot(x,y);
title('Serial Port Data');
ylim([0 1023]);
```

```
xlabel('From Serial Port');
```

```
ylabel('Digital Voltage');
```

```
subplot(2,2,2)
```

```
plot(x,t);
```

```
title('The Analog Plot Of Voltage');
```

```
ylim([0 5]);
```

```
xlabel('From Serial Port');
```

```
ylabel('Analog Voltage');
```

```
fprintf('%d is found to be maximum count of %d ',in-1,m);
```

```
subplot(2,2,3)
```

```
t = 0:1023;
```

```
plot(t,count),title('Frequency Count');
```

```
xlabel('Digital Value');
```

```
ylabel('No Of Occurences');
```

```
xlim([0 1023]);
```

```
subplot(2,2,4)
```

```
d = count/length(A)*100;
```

```
plot(t,d);
```

```
title('Digital Values Frequency Percentage');
```

```
xlabel('Digital Value');
```

```
ylabel('Percentage of No Of Occurences');
```

```
xlim([0 1023]);
```