LABSHEET 2
Audio Processing with MatLab - An Introduction
AI in Speech Processing

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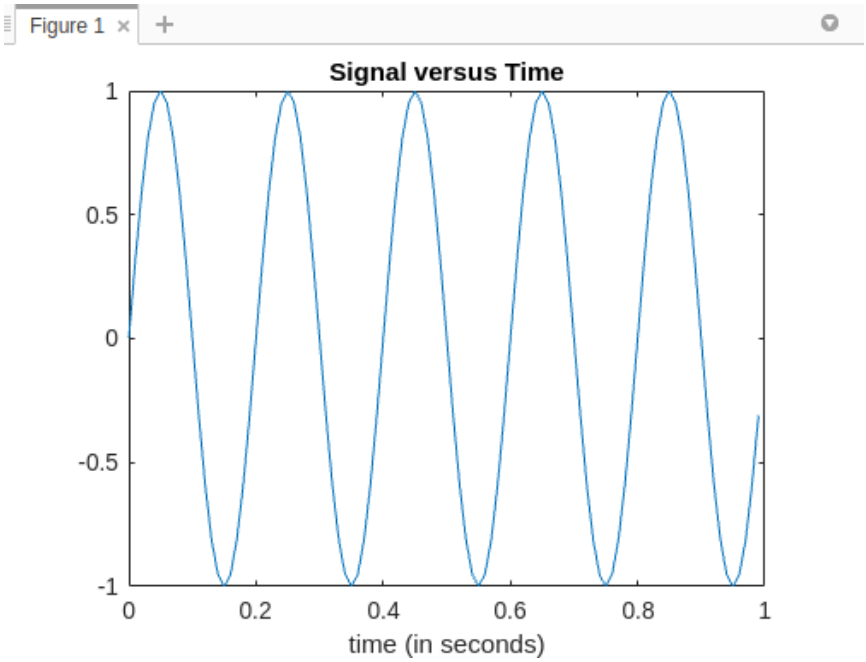
Experiment 1

Part I

%code

```
clear;
fprintf('Experiment 1\n')
fprintf('Part I\n')
%%Time specifications:
Fs = 100;          % samples per second
dt = 1/Fs;          % seconds per sample
StopTime = 1;    % seconds
t = (0:dt:StopTime-dt)';      % seconds
%%Sine wave:
Fc = 5;                     % hertz
x = sin(2*pi*Fc*t);
% Plot the signal versus time:
figure;
plot(t,x);
xlabel('time (in seconds)');
title('Signal versus Time');
```

%Output

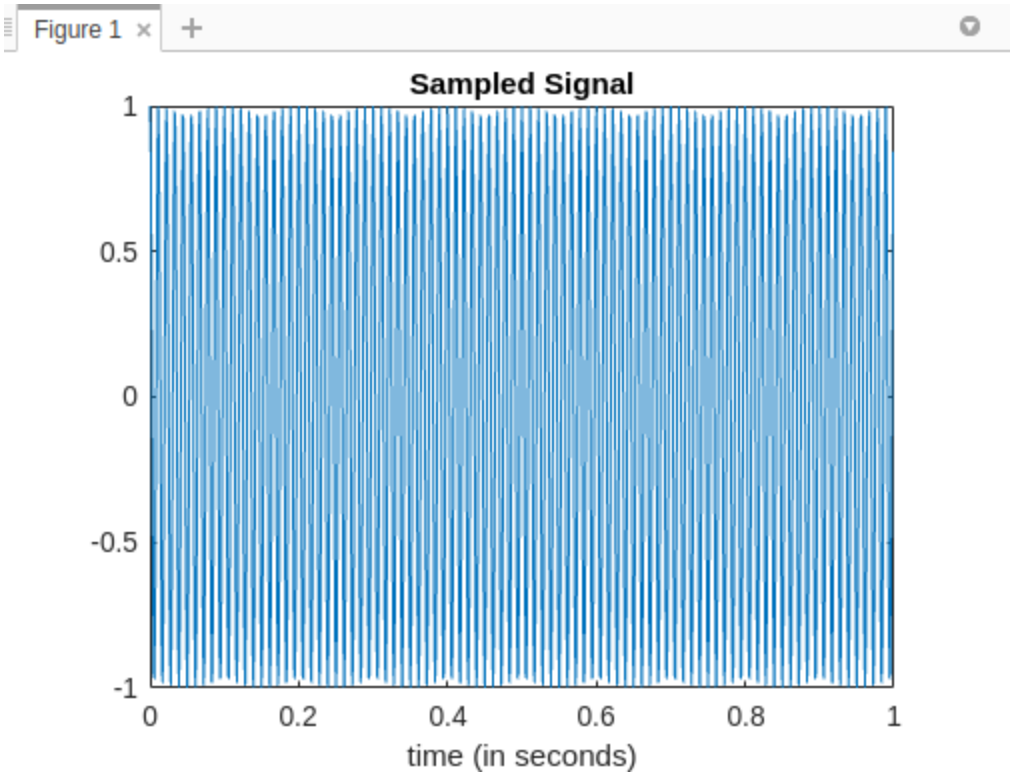


Part II

%code

```
clear;
fprintf('Part II\n')
%%Time specifications:
Fs = 1000;          % samples per second
dt = 1/Fs;          % seconds per sample
StopTime = 1;    % seconds
t = (0:dt:StopTime-dt)'; % seconds
x = cos(180*pi*t);
% Plot the signal versus time:
figure;
plot(t,x);
xlabel('time (in seconds)');
title('Sampled Signal');
```

%output



Experiment 2

%code

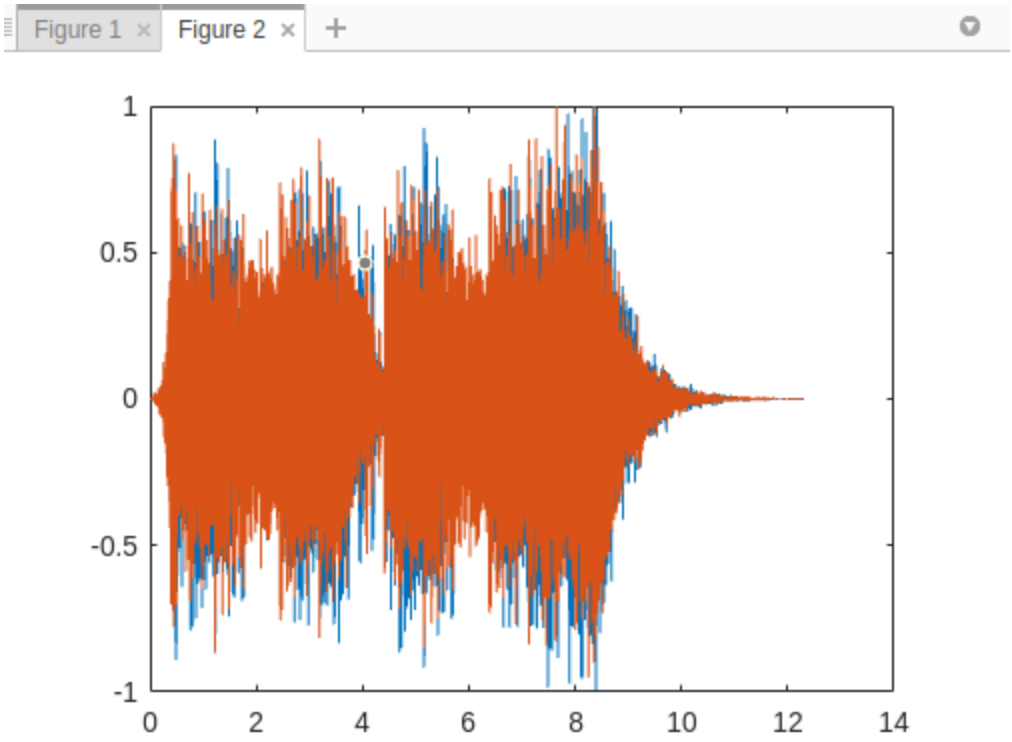
```
clear all
fprintf('Experiment 2\n')
[y,Fs] = audioread('/MATLAB Drive/AI Speech(21AIE315)/Lab1/Moscow.mp3');
size('Moscow.mp3');
length(y)
TotalTime = length(y)./Fs;
t = 0:TotalTime/(length(y)):TotalTime-TotalTime/length(y);
figure;
plot(t,y)
```

%output

```
>> Lab2
Experiment 2

ans =

      542592
```



Experiment 3

%code

```
fprintf('Experiment 3\n')
sound(y, Fs)
```

Experiment 4

%code

```
fprintf('Experiment 4\n')
audiowrite('recorded.wav',y,Fs)
```

Experiment 5

%code

```
fprintf('Experiment 5\n')
yRange = [-0.7,0.7];
soundsc(y,yRange);%makes the sound slow as well as play it for long
nBits = 16;
soundsc(y,Fs,nBits);%song played with more depth
soundsc(y, 2*Fs);%plays with twice the rate of normal recorded song
sound(flipud(y),Fs);%reversed the sound
```