```
% Pratap Luitel
% Engs 92
% HW - 2, Problem 2(a)


N = 16;         % length of signal vector
n = 0:(N-1);    % vector index
Nc = 500;       % number of samples to approximate the "continuous" signal
nu = 1;         % smallest nonzero frequency dft bin

f = cos(2*pi*nu*n/N);       % sampling the discrete vector elements
display(f');

F = fft(f);

display(F');
```

```
ans =

    1.0000
    0.9239
    0.7071
    0.3827
    0.0000
   -0.3827
   -0.7071
   -0.9239
   -1.0000
   -0.9239
   -0.7071
   -0.3827
   -0.0000
    0.3827
    0.7071
    0.9239


ans =

  -0.0000 + 0.0000i
   8.0000 + 0.0000i
   0.0000 - 0.0000i
  -0.0000 + 0.0000i
   0.0000 + 0.0000i
   0.0000 - 0.0000i
   0.0000 - 0.0000i
   0.0000 - 0.0000i
   0.0000 + 0.0000i
   0.0000 + 0.0000i
   0.0000 + 0.0000i
   0.0000 + 0.0000i
```

```
   0.0000 - 0.0000i
  -0.0000 - 0.0000i
   0.0000 + 0.0000i
   8.0000 - 0.0000i
```

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