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1  %Program 10.1 Fourier interpolation (modified)
2  %Interpolate n data points on [c,d] with trig function P(t)
3  % and plot interpolant at p (>= n) evenly spaced points.
4  %Input: interval [c,d], data points x,
5  % even number of data points n, even number p>=n
6  %Output: data points of interpolant xp
7  function xp=dftinterp(inter,x,p)
8      n = length(x);
9
10     c=inter(1); d=inter(2);
11
12     y=fft(x);           % apply DFT
13
14     yp=zeros(p,1);     % yp will hold coefficients for ifft
15
16     yp(1:n/2+1)=y(1:n/2+1); % move n frequencies from n to p
17
18     yp(p-n/2+2:p)=y(n/2+2:n); % same for upper tier
19
20     xp = real(ifft(yp))*(p/n); % invert fft to recover data
21

```