FFT Folding Algorithm

1. **Sampling frequency**, **FFT size**, **Signal**
   - Calculate:
     \[ \Delta f = \text{sampling frequency}/\text{FFT size} \]
     \[ \text{Nyquist} = \text{sampling frequency}/2 \]
   - Calculate FFT.

2. Keep the first \( (\text{FFT size}/2 + 1) \) elements. Truncate the rest.

3. Scale: divide all elements by the FFT size.

4. Fold: leave the first element (DC) and the last (Nyquist) unchanged and multiply all other elements by 2.

5. Calculate the magnitude for each component:
   \[ \sqrt{\text{real}^2 + \text{imaginary}^2} \]

6. Calculate other spectral parameters as required, e.g.
   \[ \text{phase} = \arctan \left( \frac{\text{imag}}{\text{real}} \right) \]

7. Calculate \( (\text{FFT size}/2 + 1) \) values of frequency from 0 to Nyquist with a step of \( \Delta f \).

8. Plot the spectrum as required.