**ECSE 597 Assignment 2 Report**

**TestDCsolve.m**

Figure 1 shows the implementation of dcsolve.m, and results of TestDCsolve.m are shown in Figure 2.

Chart

Description automatically generated with low confidence

Figure - TestDCsolve.m Results

Text

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Figure - dcsolve Implementation

**BJT\_CB.m**

The implementation of dcsolvealpha.m and dcsolvecont.m are shown in Figure 5 and 6. The results of BJT\_CB.m are shown in Figure 3, 4 and 5. The dcsolve.m implemented previously does not guarantee convergence, as shown in Figure 3. In contrast, the dcsolvecont.m converges, and the results are shown in Figure 4 and 5. The implementations of dcsolvealpha.m and dcsolvecont.m are shown in Figure 6 and 7.

Graphical user interface

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Figure - BJT\_CB.m DCSolve Result

A picture containing background pattern

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Figure - BJT\_CB.m DCsolve\_cont Result (5V)

Text

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Figure - BJT\_CB.m DCsolve\_cont Result (4V)

Text

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Figure - dcsolvealpha.m Implementation

Text

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Figure - dcsolvecont.m Implementation

**BJT\_CE2.m**

The results of DC analysis of BJT\_CE2.m are shown in Figure 8 and 9. The dcsolve.m does not converge whereas the dcsolvecont.m converges. The implementation of nonlinear\_fsolve.m is shown in Figure 10, and the results is shown in Figure 11.

Timeline

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Figure - BJT\_CE2 dcsolve Result

Background pattern

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Figure - BJT-CE2 decolvecont Result

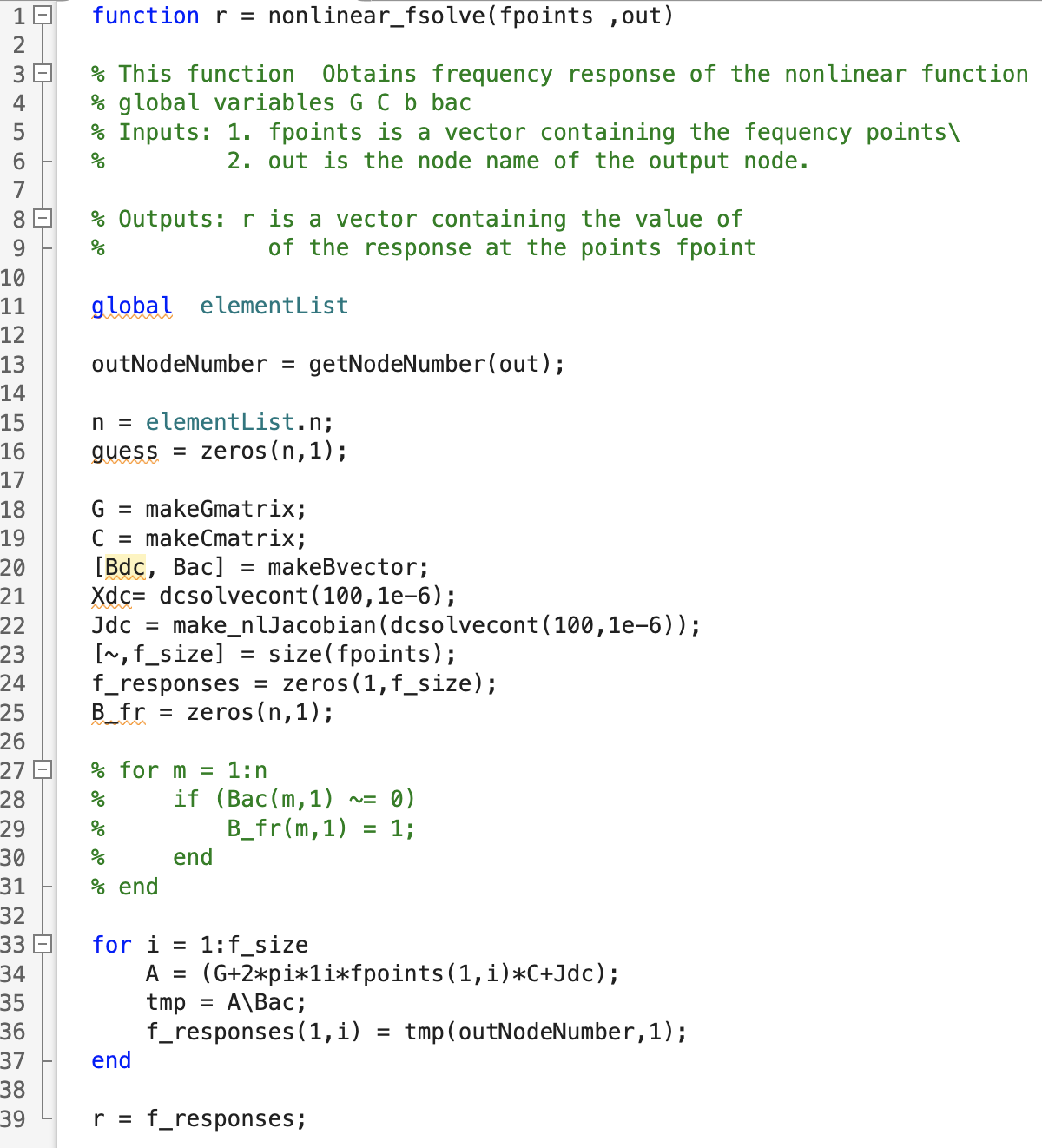


Figure - nonlinear\_fsolve Implementation

Chart, line chart

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Figure - Frequency Analysis of BJT\_CE2