Lab Report

Q1. We have made the following methods:

- *trigonal* : method to return trigonal matrix.
- *onedim* : method to solve the 1D heat eqn.
- *anime* : method to animate graph.

Q2. We have made the following methods:

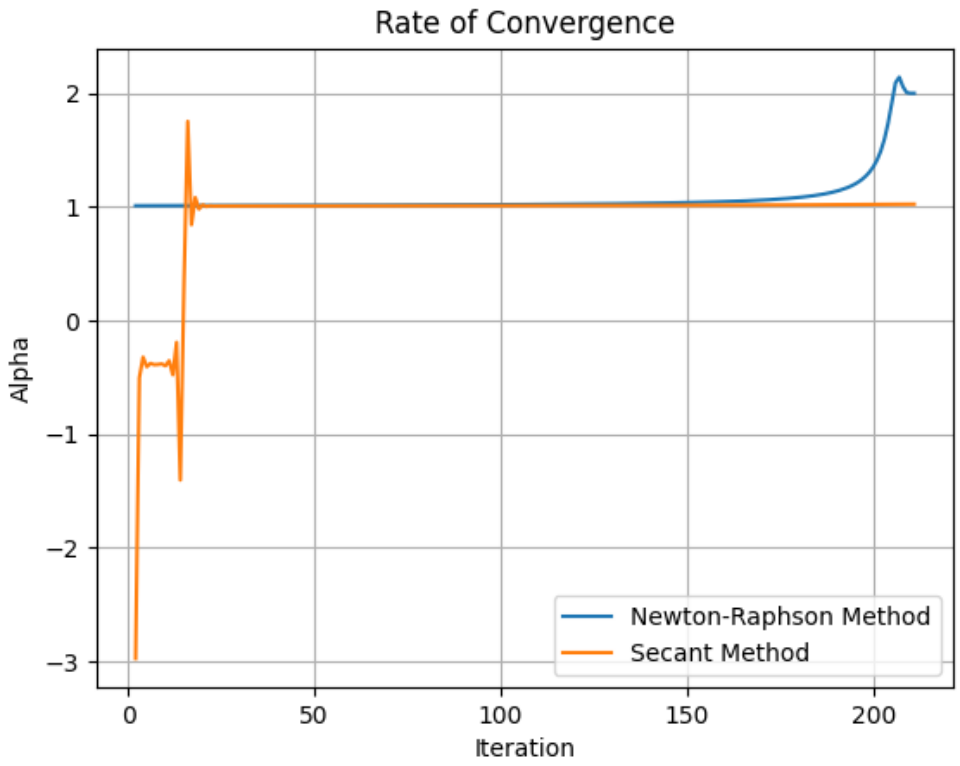
- *trigonal* : method to return trigonal matrix.
- *twodim* : method to solve the 2D heat eqn.
- *anime* : method to animate graph.

Q3. We have made the following methods:

- *fun* : method to return value of function.
- *root* : method to find the roots.

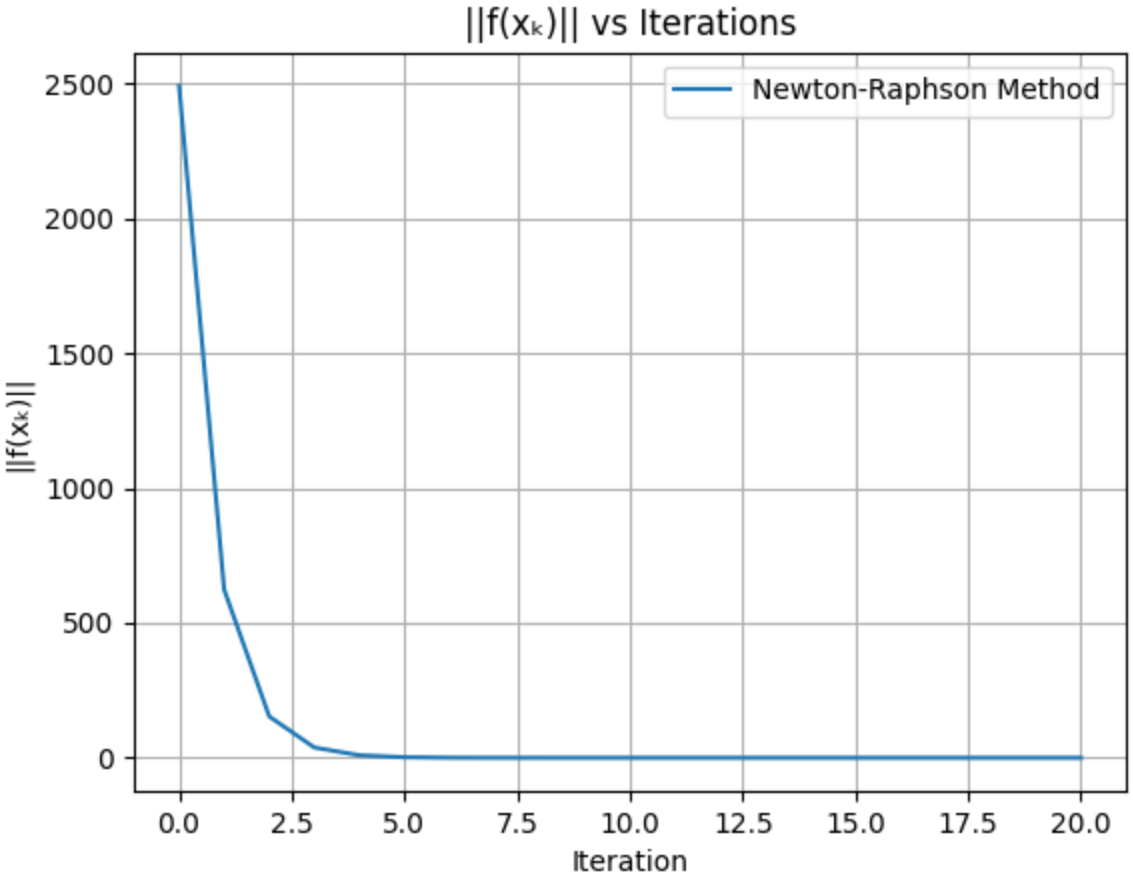
Q4. We have made the following methods:

- *fun* : method to return value of function.
- *derv* : method to return value of derivative of function.
- *nrm* : uses the newton-raphson method.
- *sm* : used secant method.
- *converge* : rate of convergence of sequence of points.
- *plot* : method to plot the graph.



Q5. We have made the following methods:

- *nrm* : uses the newton-raphson method.
- *function* : method to return the value of functions.
- *jacobi* : jacobi matrix of input function.
- *plot* : method to plot the graph.



Q6. We used the polynomal class from the last assignment. Apart from that we have used the following methods:

- *printRoots* : method to print roots using Aberth method.
- *converge* : method to check whether roots have converged.
- *Aberth* : main method to run the program.

Q7. We used the polynomal class from the last assignment. Apart from that we have used the following methods:

- *printRoots* : method to print roots using Aberth method.
- *converge* : method to check whether roots have converged.
- *func* : method to return value of function.
- *graph* : method to plot the graph.
- *funcFit* : method to compute polynomials of n degree with best approximation in [a,b].
- *zeros* : main method to run the program.