Shiny App - Root Finding Methods

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Introduction

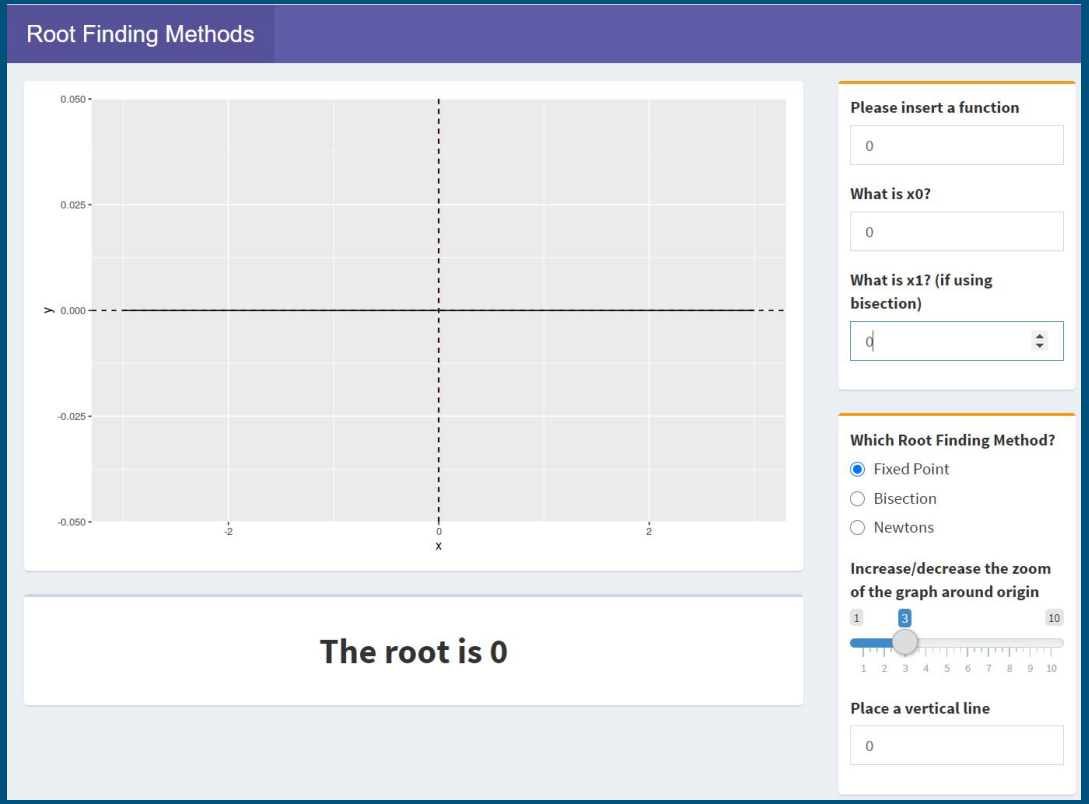
- We created a Shiny App that illustrates different root-finding methods that we were taught throughout the semester.
- The user enters a one-dimensional function for which the root is requested and can also include the initial points.
- The user is then able to see the root of that function.
- Message is displayed if there is an error.

Motivation

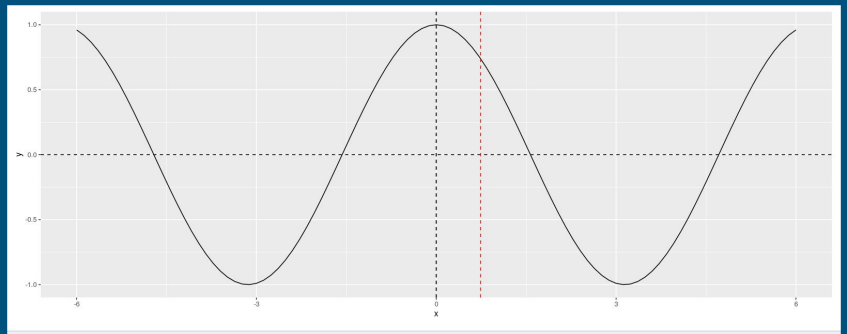
- Learn something new by creating a shiny app
- Perfect our knowledge of root finding methods through the development and testing of this app

Methods Used:

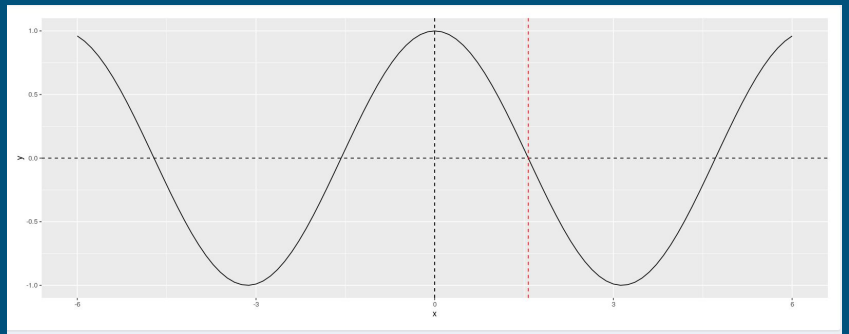
- Fixed Point
- Bisection
- Newton-Raphson



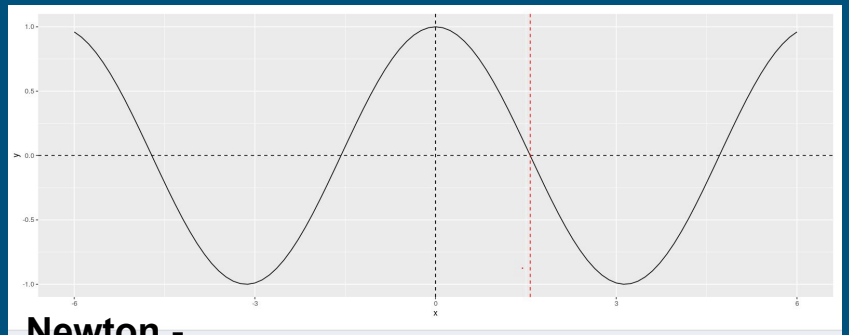
Root Finding Methods - f(x) = cos(x)



Fixed Point The root is 0.739085133523792



The root is 1.57079632719979 **Bisection**



Newton - Raphson The root is 1.57079632679549

Demo

Thank You!

Link to our GitHub