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Interactive Shiny Applications for Solving Initial Value Differential Equations

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This work contains created interacted web application.

The package Shiny is used, by means of which the reactive interface of the user is created. The application receives the input of the right part of the system of equations in the form of the text and initial values. The equation from the text format is converted into the R expression, using the common work of eval() and parse() functions.

The received expressions and input of the integration range and its step are transferred to ode() function from deSolve package, which after the call of the method lsode() returns the result in the data frame. On the tabs, the decision is recorded into the table and its plot is built. The number of the equations is given by the user dynamically. Any change of the input data will call the recalculation due to Shiny reactivity. It is possible to find our application here:

https://v-haisan.shinyapps.io/test2/