FINITE DIFFERENT METHOD AND DIFFERENTIAL QUADRATURE METHOD FOF SOLVING BURGERS' EQUATION

MUHAMMAD AFIQ BIN KHASIM
ABDUL RAHIM BIN ZULKEFLI

Thesis Submitted in Fulfilment of the Requirement for Bachelor of Science (Hons.) Computational Mathematics in the Faculty of Computer and Mathematical Sciences Universiti Teknologi Mara

July 2019

DECLARATION BY CANDITATE

We certify that this report and project to which it refers is the product of our own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

_____

MUHAMMAD AFIQ BIN KHASIM

2016289554

11 JULY 2019

_____

ABDUL RAHIM BIN ZULKEFLI

2016289542

11 JULY 2019

ABSTRACT

In this study, the Finite Difference Method and Differential Quadrature Method are used to solve the Burgers equation. The different number nodes and different initial condition are used in these methods to investigate in terms of accuracy. The solutions of these methods are compared in terms of accuracy of the numerical solution by using the graph. C++ are used to find numerical solution for those method and the exact solution solve by using maple. For results and tabulate, result are collected to compare the solution in terms of the accuracy of the numerical solution with the exact solution. The different number of nodes and difference initial condition can affect the solution of burgers equation in term of accuracy study. To find the best method to solve this equation, those method compare by using sum of square error, SSE. Decreasing the number of nodes will increasing the errors of the solution. Generally, from the results between Finite Difference Method and Differential Quadrature Method showed the Differential Quadrature Method is better than the Finite Difference Method in terms of accuracy of the numerical solution.

TABLE OF CONTENT

CHAPTER 2: LITERATURE REVIEW AND METHODOLOGY

CHAPTER 3: IMPLEMENTATION

CHAPTER 4: RESULT AND DISCUSSION