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# DETERMINATION OF SYMMETRICAL FAULT ANALYSIS IN A POWER SYSTEM USING GRAPHICAL USER INTERFACE (GUI) AS EDUCATIONAL TOOL

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# ABSTRACT

Analysis of system fault is a process of defining line current and bus voltage during occurrence of various kind of fault. The fault has been divided into categories such as symmetrical fault and unsymmetrical fault. A study is to determine of symmetrical fault analysis in a power system using MATLAB Graphical User Interface (GUI). Fault Analysis is important to determine the magnitude of voltages and line currents during the occurrence of various types of fault. Symmetrical fault is described as same time short circuit in all of the three phases. It is a fault that most often but the worst kind of fault faced since the networks is well balanced; it was done on the basis of each phase. The most important in the fault analysis is the determination of line current and bus voltage. This process consists of disparate ways of numerical calculations that are difficult to perform by manual calculation. Therefore, the objective of this project is to develop an educational toolbox by using MATLAB 8.2 software with Graphical User Interface (GUI) in order to solve for power system fault analysis problems. The existence of MATLAB using Graphical Using Interface (GUI) would help the user become easier and faster to perform the mathematical calculations. The user able to use interactive software to calculate the new per unit fault current with concerned to the system common MVA base.

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# CHAPTER 1
# INTRODUCTION

## 1.1 RESEARCH BACKGROUND

These days, examination of fault is extremely basic piece of energy framework analysis[2] . Fault is one of the issues the framework happens in the power framework. There are a few sorts of fault that may happen in the power frameworks. The sort of fault can be partitioned into symmetrical and unsymmetrical blame [2-4]. The fault is an over current in the circuit generally because of an anomalous electric current. They may happen in the three stage control framework where a stage conductor is in contact with each other. Fault Analysis is important to determine the magnitude of line and voltage of currents during the occurrence of various kind of fault.

This venture is centred around the assurance of symmetrical blame investigation in a power framework utilizing MATLAB Graphical User Interface (GUI)[1]. This framework is essential in arranging and operation with the monetary booking of a power framework. Concurring that, there are many inquiries about was prescribed to tackle the any issue including the examination of energy framework. Iterative strategy by picturing instruments is which one the examination that by