**PROJECT REPORT:**

**BASIC CALCULATOR**

1. Introduction:

The basic calculator project aims to create a simple command line calculator application in Java. This application allows user to perform basic arithmetic operations such as addition, subtraction, multiplication, and division on integer numbers. It provides a user-friendly interface for selecting operations and entering operands.

1. Objectives:

The main objectives of this project are as follows:

* To develop a basic calculator application in Java.
* To implement common arithmetic operations.
* To handle user inputs and provide appropriate output for each operation.
* To ensure robust error handling and user-friendly interface.

1. Implementation:
   1. Technology Stack:

* Language: Java
* Input/Output handling: BufferedReader
* Development Environment: Eclipse IDE
  1. Code Structure:
* Operations class: Defines methods for performing arithmetic operations.
* BasicCalculator Class: Main class containing the calculator logic and user interface.
* BufferedReader: Used for reading inputs from the user
* Switchcase: Implemented for selecting various arithmetic operations.
  1. Functionality:
* The user is presented with a menu to select an operation (addition, subtraction, multiplication, division, or exit)
* Depending on the selected operation, the user is prompted to enter operands.
* The application performs the selected operation and displays the result.
* Proper error handling is implemented to handle invalid input.

1. Testing:
   1. Test cases:

* Test case 1: Addition of two positive/negative numbers.
* Test case 2: Subtraction of two positive/negative numbers.
* Test case 3: Multiplication of two positive/negative numbers.
* Test case 4: Division of two positive/negative numbers.
* Test case 5: Invalid inputs (Error handling)
* Test case 6: Division by zero(Error handling)
  1. Results:
* All test cases passes successfully.
* Proper messages were displayed for errors.
* All arithmetic operations were performed properly and returned correct results.

1. Conclusion:

The simple calculator program has been successfully implemented in java. The application allows the user to perform common arithmetic operations with ease. It provides a simple interface to use the calculator. Proper exception handling ensures that the program performs gracefully in case of invalid inputs or division by zero.