



# **Building a Calculator with Java**

Simple calculator application using Java.

Focus on GUI, event handling, arithmetic operations.

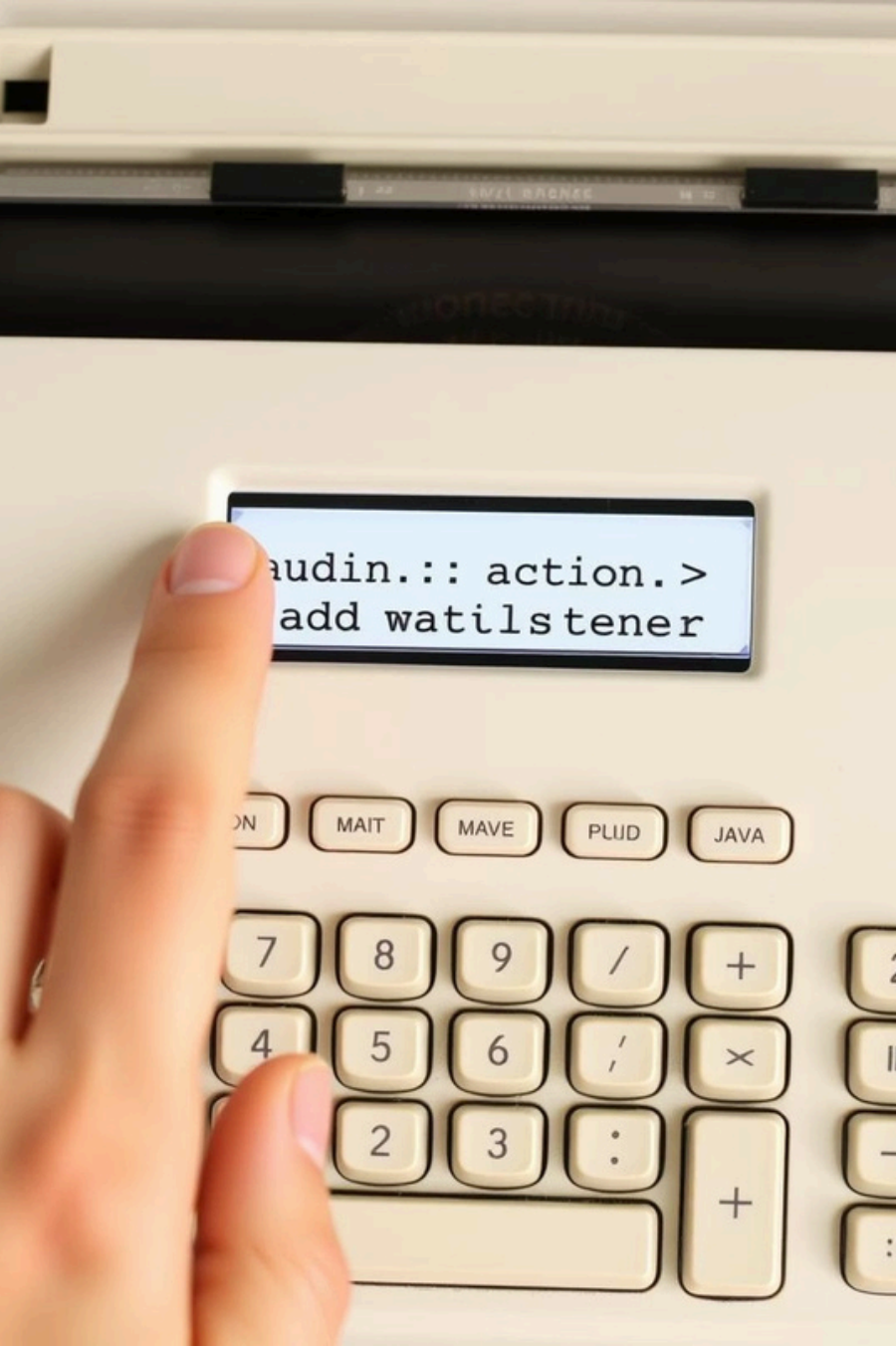
**NAME : Mone sri karthikeyan**

**Topic : Calculator**

**Organization : Micro IT**

# GUI Design with Swing

- JFrame: main application window
- JTextField: input/output display
- JButton: numeric and operation keys
- GridLayout: button layout manager
- Example: **JFrame frame = new JFrame("Calculator");**
- Example: JTextField display = new JTextField();



# Event Handling



## **ActionListener Interface**

Detect button presses



## **ActionEvent Object**

Identifies clicked button



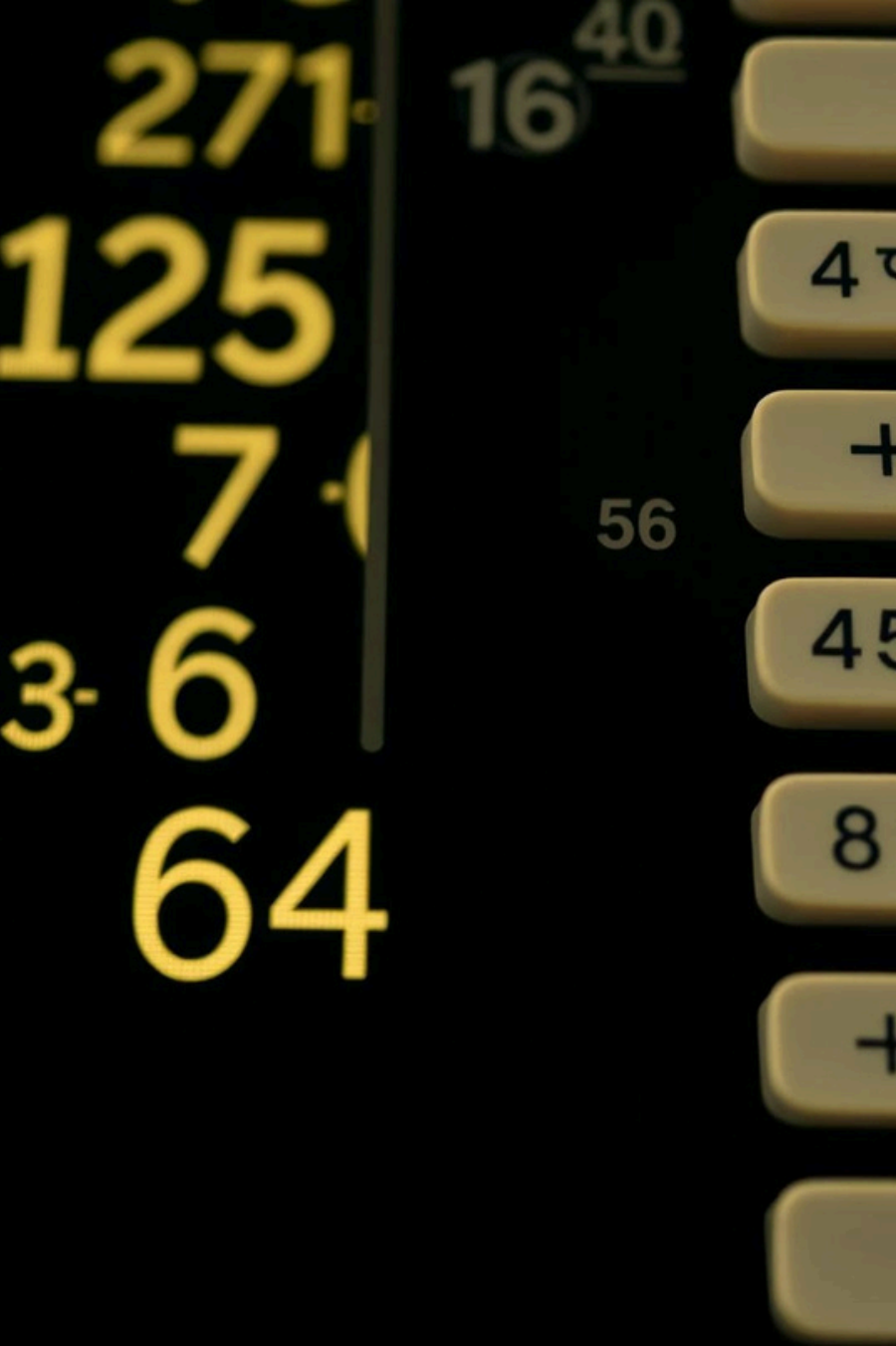
## **Lambda Expressions**

Compact event handling



## **Example Code**

```
button.addActionListener(e -> // Handle click);
```



# Calculation Logic

## Basic Operations

Add, Subtract, Multiply, Divide methods

## Operand Storage

Keep track of operands and operator

## Input Parsing

Convert display text to numbers safely

## Error Handling

Handle division by zero and invalid input

# Code Implementation

## 1 Key Methods

Add clear, input append, and calculation logic

## 2 Main Method

Program entry point and GUI initialization

## 3 Best Practices

Organize code modularly and use clear variable names

## 4 Example

Clear button resets display and stored values

Simple Calculator Views Prefraction Avsaries View Selectinip

Result Erallomptions >

```
▼(Calcullate)
vape fax;
fl.intofs
w>Siate Xowe: complate recule fatat) {{
addictionl conetaion;
=vidualiecule:
{
  Conde davsicallag: {
    AX +4P
    Conte=estoflection, 10.votl(, 190);
    Cadiliction sestiure fuan:
    denalog of =he vpeasion:
    templed: if =iate +15;
    caliction ar =lesty= 180;
    Conds tessall= off entceals 1842;
    te se we addiion in rections
    Tonde denspllatice destial= 1:36t
    Valte eesspllatice spertions 1.549;

    re to maceledeatione:,192; 49
    Tante desplatenize valeklaste 10-less-135()) {
    Valde tess.case.fer roch.1917);
      19
    } ))
    Equat: + lbte.2514,201)

    Chaslatile sperfious fer-alclection, etlate + 594, 17);
    lubsiyo 6 wespy);

    Conenarcitiorv vcluce Stor((eyts miebile rastogles Keping top.))
  })
}

(Meratori: 16 to.531));
153) = 4536.4656

(Tople addculates 0 911, Moaliny, 991;
// addiectione foccic., Apple mathrese {});
(Cable rack sesstaciale)

)
)
(Sepile-edition,low, 'Draght.0f5, Poul, 477;
wohileters(59,rope); = 42  ::

)
)
/tertadulec(les.lny)
```

# Conclusion and Improvements

- Add scientific functions (sin, cos, sqrt)
- Implement memory and history features
- Refactor for maintainability
- Explore JavaFX for modern GUI
- Use design patterns for cleaner code
- Find tutorials and documentation online