Ramis Mustafa   BSCS 7A 224248

0.0005

√	±	%	AC
7	8	9	÷
4	5	6	x
1	2	3	-
.	0	=	+

√(81) =

9.0

√	±	%	AC
7	8	9	÷
4	5	6	x
1	2	3	-
.	0	=	+

-8

√	±	%	AC
7	8	9	÷
4	5	6	x
1	2	3	-
.	0	=	+

9 / 6 =

1.5

√	±	%	AC
7	8	9	÷
4	5	6	x
1	2	3	-
.	0	=	+

Mobile Application Development Lab 9

Code

```dart
import 'dart:math';
import 'package:expression_language/expression_language.dart';

import 'package:flutter/material.dart';

void main() {
  runApp(MyApp());
}

class MyApp extends StatefulWidget {
  @override
  _MyAppState createState() => _MyAppState();
}

class _MyAppState extends State<MyApp> {
  String calculation;
  String result;

  @override
  void initState() {
    super.initState();
    calculation = "";
    result = "0";
  }

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      theme: ThemeData(
        primaryColor: Colors.white,
        accentColor: Colors.orange
      ),
      home: Scaffold(
        backgroundColor: Colors.black,
        body: SafeArea(
          child: Column(
            mainAxisAlignment: MainAxisAlignment.spaceBetween,
            mainAxisSize: MainAxisSize.max,
            crossAxisAlignment: CrossAxisAlignment.end,
            children: [
              Padding(
                padding: EdgeInsets.only(top: 15, right: 3),
                child: Text(calculation, style: TextStyle(color: Colors.white,
fontSize: 16),),
              ),
              Text(result, style: TextStyle(color: Colors.white, fontSize: 26),),
              GridView.count(
                primary: false,
                crossAxisCount: 4,
                padding: EdgeInsets.zero,
                shrinkWrap: true,
                crossAxisSpacing: 0,
```

```dart
                mainAxisSpacing: 0,
                children: [
                  GestureDetector(
                    onTap: (){setState(() {
                        try{
                          calculation = "√($result) = ";
                          result = sqrt(double.parse(result)).toString();
                        }
                        catch(e){
                          result = "err";
                        }
                      });
                    },
                    child: Card(
                      elevation: 0.3,
                      child: Container(
                        color: Theme.of(context).accentColor,
                        child: Center(
                          child: Text("√", style: TextStyle(fontSize: 24, color:
Colors.white)),
                        ),
                      ),
                    ),
                  ),
                  GestureDetector(
                    onTap: (){setState(() {
                      try{
                        if (result != "0") {
                          if (result[0] != '-')
                            result = "-" + result;
                          else
                            result = result.substring(1);
                        }
                      }
                      catch(e){
                        print(e.toString());
                        result = "err";
                      }
                    });
                    },
                    child: Card(
                      elevation: 0.3,
                      child: Container(
                        color: Theme.of(context).accentColor,
                        child: Center(
                          child: Text("±", style: TextStyle(fontSize: 24, color:
Colors.white)),
                        ),
                      ),
                    ),
                  ),
                  GestureDetector(
                    onTap: (){setState(() {
                      try{
                        result = (double.parse(result) / 100).toString();
                      }
                      catch(e){
                        result = "err";
                      }
```

```
            });
          },
          child: Card(
            elevation: 0.3,
            child: Container(
              color: Theme.of(context).accentColor,
              child: Center(
                child: Text("%", style: TextStyle(fontSize: 24, color:
Colors.white)),
              ),
            ),
          ),
        ),
        GestureDetector(
          onTap: (){setState(() {
            try{
              calculation = "";
              result = "0";
            }
            catch(e){
              result = "err";
            }
          });},
          child: Card(
            elevation: 0.3,
            child: Container(
              child: Center(
                child: Text("AC", style: TextStyle(fontSize: 24)),
              ),
            ),
          ),
        ),
        GestureDetector(
          onTap: (){setState(() {
            try{
              if (result == "0")
                result = "";
              result = result + "7";
            }
            catch(e){
              result = "err";
            }
          });},
          child: Card(
            elevation: 0.3,
            child: Container(
              child: Center(
                child: Text("7", style: TextStyle(fontSize: 24)),
              ),
            ),
          ),
        ),
        GestureDetector(
          onTap: (){setState(() {
            try{
              if (result == "0")
                result = "";
              result = result + "8";
            }
```

```
          catch(e){
            result = "err";
          }
        });},
        child: Card(
          elevation: 0.3,
          child: Container(
            child: Center(
              child: Text("8", style: TextStyle(fontSize: 24)),
            ),
          ),
        ),
      ),
      GestureDetector(
        onTap: (){setState(() {
          try{
            if (result == "0")
              result = "";
            result = result + "9";
          }
          catch(e){
            result = "err";
          }
        });},
        child: Card(
          elevation: 0.3,
          child: Container(
            child: Center(
              child: Text("9", style: TextStyle(fontSize: 24)),
            ),
          ),
        ),
      ),
      GestureDetector(
        onTap: (){setState(() {
          try{
            if (result != "0"){
              if (calculation == "") {
                calculation = result + " / ";
                result = "0";
              }
            }
          }
          catch(e){
            print(e);
            result = "err";
          }
        });},
        child: Card(
          elevation: 0.3,
          child: Container(
            color: Theme.of(context).accentColor,
            child: Center(
              child: Text("÷", style: TextStyle(fontSize: 24, color:
Colors.white)),
            ),
          ),
        ),
      ),
```

```
            GestureDetector(
              onTap: (){setState(() {
                try{
                  if (result == "0")
                    result = "";
                  result = result + "4";
                }
                catch(e){
                  result = "err";
                }
              });},
              child: Card(
                elevation: 0.3,
                child: Container(
                  child: Center(
                    child: Text("4", style: TextStyle(fontSize: 24)),
                  ),
                ),
              ),
            ),
            GestureDetector(
              onTap: (){setState(() {
                try{
                  if (result == "0")
                    result = "";
                  result = result + "5";
                }
                catch(e){
                  result = "err";
                }
              });},
              child: Card(
                elevation: 0.3,
                child: Container(
                  child: Center(
                    child: Text("5", style: TextStyle(fontSize: 24)),
                  ),
                ),
              ),
            ),
            GestureDetector(
              onTap: (){setState(() {
                try{
                  if (result == "0")
                    result = "";
                  result = result + "6";
                }
                catch(e){
                  result = "err";
                }
              });},
              child: Card(
                elevation: 0.3,
                child: Container(
                  child: Center(
                    child: Text("6", style: TextStyle(fontSize: 24)),
                  ),
                ),
              ),
```

```dart
              ),
            GestureDetector(
              onTap: (){setState(() {
                try{
                  if (result != "0"){
                    if (calculation == "") {
                      calculation = result + " * ";
                      result = "0";
                    }
                  }
                }
                catch(e){
                  result = "err";
                }
              });},
              child: Card(
                elevation: 0.3,
                child: Container(
                  color: Theme.of(context).accentColor,
                  child: Center(
                    child: Text("x", style: TextStyle(fontSize: 24, color:
Colors.white)),
                  ),
                ),
              ),
            ),
            GestureDetector(
              onTap: (){setState(() {
                try{
                  if (result == "0")
                    result = "";
                  result = result + "1";
                }
                catch(e){
                  result = "err";
                }
              });},
              child: Card(
                elevation: 0.3,
                child: Container(
                  child: Center(
                    child: Text("1", style: TextStyle(fontSize: 24)),
                  ),
                ),
              ),
            ),
            GestureDetector(
              onTap: (){setState(() {
                try{
                  if (result == "0")
                    result = "";
                  result = result + "2";
                }
                catch(e){
                  result = "err";
                }
              });},
              child: Card(
                elevation: 0.3,
```

```dart
            child: Container(
              child: Center(
                child: Text("2", style: TextStyle(fontSize: 24)),
              ),
            ),
          ),
        ),
        GestureDetector(
          onTap: (){setState(() {
            try{
              if (result == "0")
                result = "";
              result = result + "3";
            }
            catch(e){
              result = "err";
            }
          });},
          child: Card(
            elevation: 0.3,
            child: Container(
              child: Center(
                child: Text("3", style: TextStyle(fontSize: 24)),
              ),
            ),
          ),
        ),
        GestureDetector(
          onTap: (){setState(() {
            try{
              if (result != "0"){
                if (calculation == "") {
                  calculation = result + " - ";
                  result = "0";
                }
              }
            }
            catch(e){
              result = "err";
            }
          });},
          child: Card(
            elevation: 0.3,
            child: Container(
              color: Theme.of(context).accentColor,
              child: Center(
                child: Text("-", style: TextStyle(fontSize: 24, color:
Colors.white)),
              ),
            ),
          ),
        ),
        GestureDetector(
          onTap: (){setState(() {
            try{
              result = result + ".";
            }
            catch(e){
              result = "err";
```

```
              }
            });},
          child: Card(
            elevation: 0.3,
            child: Container(
              child: Center(
                child: Text(".", style: TextStyle(fontSize: 24)),
              ),
            ),
          ),
        ),
      GestureDetector(
        onTap: (){setState(() {
          try{
            if (result != "0")
              result = result + "0";
          }
          catch(e){
            result = "err";
          }
        });},
        child: Card(
          elevation: 0.3,
          child: Container(
            child: Center(
              child: Text("0", style: TextStyle(fontSize: 24)),
            ),
          ),
        ),
      ),
      GestureDetector(
        onTap: (){setState(() {
          try{
            if (calculation.contains("+") || calculation.contains("-")
|| calculation.contains("/") || calculation.contains(" * ")){
              calculation = calculation + result;

              var expressionGrammarDefinition =
ExpressionGrammarParser({});
              var parser = expressionGrammarDefinition.build();
              var expression = parser.parse(calculation).value as
Expression;

              calculation += " =";

              result = expression.evaluate().toString();
            }
          }
          catch(e){
            print(e);
            result = "err";
          }
        });},
        child: Card(
          elevation: 0.3,
          child: Container(
            child: Center(
              child: Text("=", style: TextStyle(fontSize: 24)),
            ),
```

```
                        ),
                    ),
                ),
                GestureDetector(
                  onTap: (){setState(() {
                    try{
                      if (result != "0"){
                        if (calculation == "") {
                          calculation = result + " + ";
                          result = "0";
                        }
                      }
                    }
                    catch(e){
                      result = "err";
                    }
                  });},
                  child: Card(
                    elevation: 0.3,
                    child: Container(
                      color: Theme.of(context).accentColor,
                      child: Center(
                        child: Text("+", style: TextStyle(fontSize: 24, color:
Colors.white)),
                      ),
                    ),
                  ),
                ),
              ],
            )
          ],
        ),
      ),
    )
  );
  }
}
```