Project Report on

GUI Interface of Scientific Calculator using PYTHON

INTRODUCTION NAME	-	MOHAMMED FAIZAN
SECTION	-	K21QT
REGISTRATION NO	-	12115149
GROUP	-	1
SUBJECT	-	INT 213 (PYTHON)
PROJECT REPORT TOPIC	-	SCIENTIFIC CALCULATOR
SUBJECT TEACHER	-	NAVPREET RUPAL MAM
COLLEGE	-	LOVELY PROFESSIONAL UNIVERSITY

TEAM MEMBERS FOR PROJECT ARE:

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Section	K21QT	K21QT	K21QT
Group	1	2	2

Introduction :

- Graphical User Interface
- Arithmetic Operation
- Addition Operation
- Subtraction Operation
- Multiplication Operation
- Division Operation
- Trigonometry Ratios
- Logarithm
- Tools used

Graphical User Interface:

A Graphical user interface is an interface through which a user can interact with electronic devices such as computers and other applications, with the help of a mouse there are so many graphical user interfaces Tkinter is mostly used as it is fast and easy to create GUI applications This interface uses icons, menus, and other visual indicator representations to display information and related user controls, unlike text-based interfaces, where data and commands are in the text.

Arithmetic Operations:

Arithmetic operations is a branch of mathematics, that involves the study of numbers, and operation of numbers that are useful in all the other branches of mathematics. It basically comprises operations such as Addition, Subtraction, Multiplication, and Division.

Addition (+) Operation:

Addition is a mathematical process of adding things together. The addition process is denoted by the **'+'** sign.

Subtraction (-) Operation:

The subtraction operation gives the difference between two numbers. Subtraction is denoted by the **'- ',** sign.

Multiplication (*) Operation:

Multiplication is known as repeated addition. It is denoted by **'×'** or **'*'.** It also combines with two or more values to result in a single value.

Division (/) Operation:

The division is usually denoted by **'**÷ 'and is the inverse of multiplication. It constitutes two terms dividend and divisor, where the dividend is divided by the divisor to give a single term value.

Trigonometry Ratios:

The ratios of sides of a right-angled triangle with respect to any of its acute angles are known as the trigonometric ratios of that angle.

The three sides of the right triangle are:

- Hypotenuse (the longest side)
- Perpendicular (opposite side to the angle)
- Base (Adjacent side to the angle)

1. **Sin:** Sine of an angle is defined as the ratio of the side opposite(perpendicular side) to that angle to the hypotenuse.
2. **Cos:** Cosine of an angle is defined as the ratio of the side adjacent to that angle to the hypotenuse.
3. **Tan:** Tangent of an angle is defined as the ratio of the side opposite to that angle to the side adjacent to that angle.
4. **Cosec:** Cosecant is a multiplicative inverse of sine.
5. **Sec:** Secant is a multiplicative inverse of cosine.
6. **Cot:** Cotangent is the multiplicative inverse of the tangent.

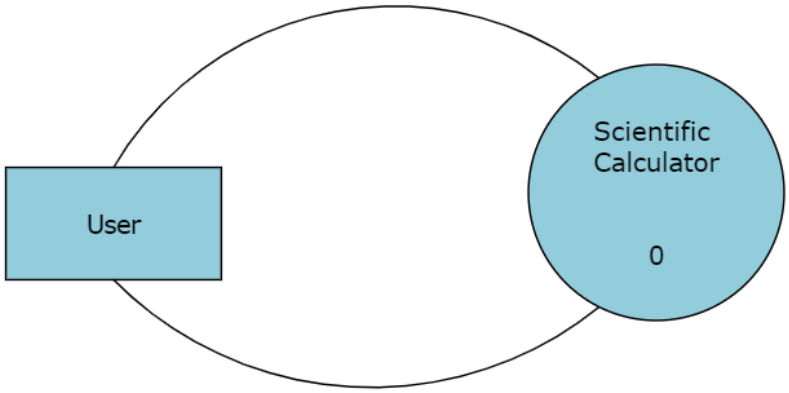
Logarithm:

A logarithm is defined as the power to which a number must be raised to get some other values. It is the most convenient way to express large number.

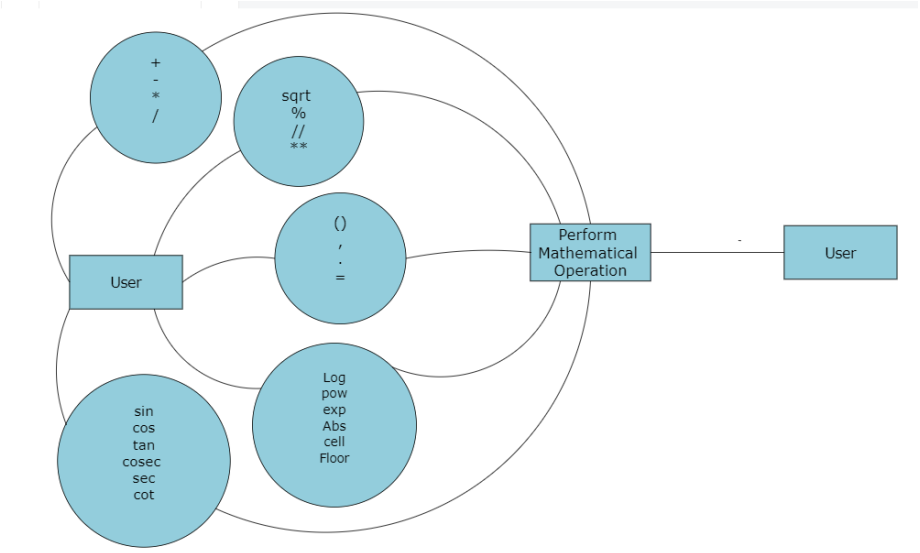
Data Flow Diagram:

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. Often, they are a preliminary step used to create an overview of the system which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design). A DFD shows what kinds of data will be input to and output from the system, where the data will come from and go to, and where the data will be stored. It does not show information about the timing of processes, or information about whether processes will operate in sequence or in parallel (which is shown on a flowchart).

LEVEL 0:



LEVEL 1:



Tools used:

1. Python 3.7.0:

Python is a general-purpose programming language. Hence, you can use the programming language for developing both desktop and web applications. Also, you can use Python for developing complex scientific and numeric applications. Python is designed with features to facilitate data analysis and visualization

2. Tkinter:

Tkinter is Python's standard GUI (Graphical User Interface) package. Tkinter is not the only GUI-Programming toolkit for Python. It is however the most used one.

Roles And Responsibilities :

1 Module 1: - Role 1: Mohammed Faizan

Responsibilities: 1 Making codes of function (+, -, *, /,%,**,)

2 Putting All Function together in Python

3 Requirements & Design Analysis

2 Module 2: - Role 2: Divyansh Jaiswal

Responsibilities: 1 Making codes of function(sin,cos,tan,cosec,sec,cot)

2 Making Calculator GUI Interface in Python

3 Making Working Calculator GUI in Python with Tkinter

3 Module 3: - Role 3: Masana Swaraj Deep

Responsibilities: 1 Making codes of function(log,pow,exp,Abs,cell,floor)

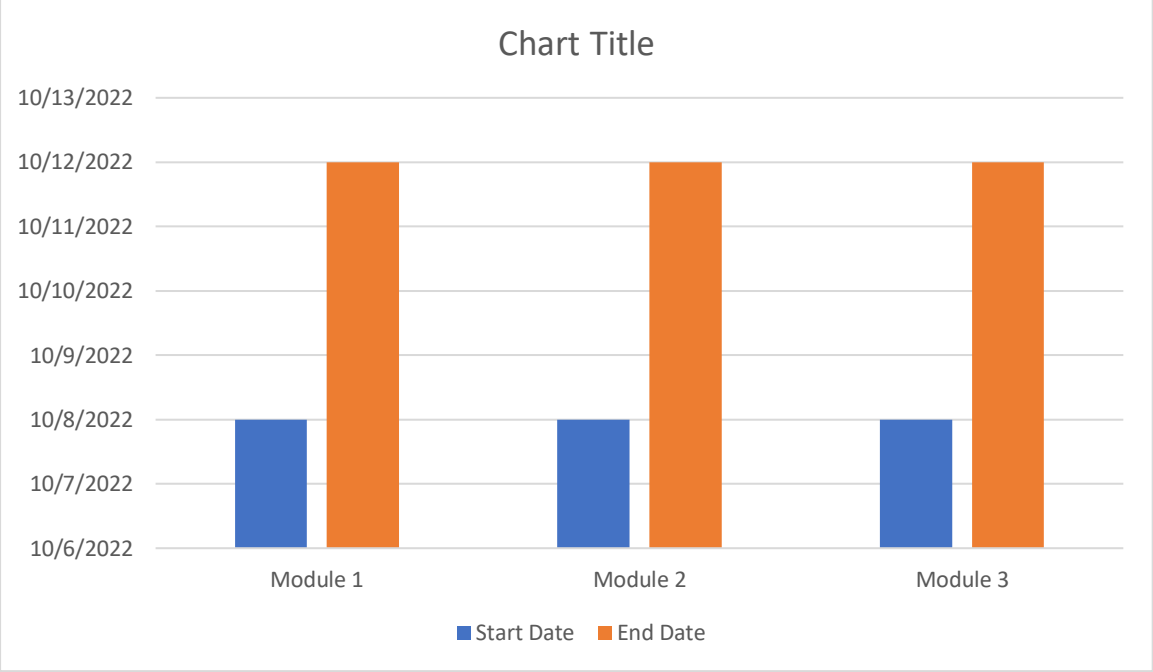
2 Handle Backend part

3 Testing all the function Individual & Together

Progress of work schedule in terms of Gantt chart:

Task Name	Start Date	End Date	Duration (Days)	Days Complete	Percent Complete
Requirement analysis	01/10/2022	03/10/2022	2	2	100%
Design	04/10/2022	07/10/2022	3	3	100%
Coding	08/10/2022	28/10/2022	20	20	100%
Testing	29/10/2022	31/10/2022	2	2	100%

Progress of Module work schedule in terms of Gantt chart:



Name	Module	Start Date	End Date	Duration (Days)	Percent Complete
MOHAMMED FAIZAN	Module 1	08/10/2022	12/10/2022	4	100%
DIVYANSH JAISWAL	Module 2	08/10/2022	12/10/2022	4	100%
MASANA SWARAJ DEEP	Module 3	08/10/2022	12/10/2022	4	100%