Project Report

Title: Scientific Calculator

BACHELOR OF TECHNOLOGY

Computer Science and Engineering

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Submitted to

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LOVELY PROFESSIONAL UNIVERSITY

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INTRODUCTION

Me and my teammate got a wonderful opportunity to work on the Python project under our Python teacher Dr. Rakhi Mutha guidance.

The topic assigned to us is a scientific calculator that can perform following functions-

1) Add, sub, multiply, divide, and mod (%) operations on entered integer or floating type numbers.

2) Square root, exponent (power (a, b))

3) sine, cosine, and tangent (Trigonometric functions).

4) Conversion from radian to degree and degree to radian.

In this project, we used our knowledge of the Python programming language to implement the necessary code. This program can help anyone struggling to do scientific calculations.

Aspects of our program are-

Math function, Input function, Range function, Print function, Conditional branching statement, loop structures(iterative statements) and break statement.

- - PYTHON CODE - -

```
import math
print("\nWELCOME :)\n")
print("Type 'a' for addition")
print("Type 's' for subtraction")
print("Type 'm' for multiply")
print("Type 'd' for divide")
print("Type 'sq' for Square Root")
print("Type 'exp' for Exponent(Power(a,b))")
print("Type 'sin' for Sine Function")
print("Type 'cos' for Cosine Function")
print("Type 'tan' for Tangent Function")
print("Type 'rad' to Change from Radian to Degree")
print("Type 'deg' to Change from Degree to Radian")
print("Type 'exit' to take Exit From Program")

while True:

    choice = str(input("\nYour Choice: "))
    if choice=='a':
        n=int(input("How many Numbers you want to add: "))
        s=0
        for i in range(1,n+1):
            add=eval(input("Number: "))
            s+=add
        print("Sum is: ",s)
    elif choice=='s':
        num1= eval(input("Num1: "))
        num2= eval(input("Num2: "))
        print("Subtraction of Entered Number is: ",num1-num2)
    elif choice=='m':
        m=int(input("How many Numbers You Want to Multiply: "))
        s=1
        for i in range(1,m+1):
            mul=eval(input("Number: "))
            s*=mul
        print("Multiplication of Entered Number is: ",s)
    elif choice=='d':
        numerator=eval(input("Numerator: "))
        denominator=eval(input("Denominator: "))
        print("Divison of Entered Number is: ",numerator/denominator)
    elif choice=='sq':
        num=eval(input("Enter Number of which you want to find Square Root: "))
        print("Square root is: ",math.sqrt(num))
    elif choice=='exp':
        num1=eval(input("Exponent: "))
        num2=eval(input("Power: "))
        print("Result: ", num1**num2)
```

```
    elif choice=='sin':
        val=eval(input("Value(Sin_): "))
        print("Result ", math.sin(val))
    elif choice=='cos':
        val=eval(input("Value(Cos_): "))
        print("Result ", math.cos(val))
    elif choice=='tan':
        val=eval(input("Value(Tan_): "))
        print("Result ", math.tan(val))
    elif choice=='rad':
        val=eval(input("Radian: "))
        print("Degree", math.degrees(val))
    elif choice=='deg':
        val=eval(input("Degree: "))
        print("Radian", math.radians(val))
    elif choice=='exit':
        break
    else:
        print("\nInvalid Input!")
print("\nThank You :)")
```

CONCLUSION

It was a wonderful and educational experience for me and my teammate while working on this project. This project took me and my teammate through the various phases of python programming and gave us a real insight into the world of programing. The joy of working involved while tackling the various problems and challenges gave us the motivation to do more projects.

This project made us test our knowledge about Python language.

We really enjoyed making this project and successfully completing it on time.

- - Thank You - -