Jaypee Institute Of Information Technology, Noida (Sector 62)

Department Of Computer Applications

Project Title: CALCUNITE

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INTRODUCTION

- **Calcunite** is a versatile Python Toolkit designed to provide users with a comprehensive set of calculator, geometry, health, and numerology tools. The project aims to offer a user-friendly interface for performing various calculations and analyses efficiently.

- **Calcunite** originated from the idea of creating a centralized platform where users could access a wide range of tools for their mathematical, geometrical, health-related, and numerological needs. The project's development was driven by the goal of simplifying complex calculations and providing users with easy-to-use tools that enhance productivity and decision making.

- ***Objectives:***
    1) Provide Versatile Tools: Create a toolkit with a wide range of tools to cater to different user needs, including basic arithmetic calculations, geometric measurements, health-related metrics, and numerological analyses.

    2) User-Friendly Interface: Design an intuitive and easy-to-use interface for seamless navigation, allowing users to access and utilize tools without any technical

PLAN

- Started by thinking of the tools, this toolkit will include, creating a main menu for layout of our project.

- ***Main Menu:***

Welcome to **Calcunite** Your Python Toolkit!
Please select an option:

I. Calculator Tools
  A. Days Calculator
  B. Mathematical Operations
    1. Arithmetic Operations
      i. Addition
      ii. Subtraction
      iii. Multiplication
      iv. Division
      v. Square
      vi. Square Root
      vii. Cube
      viii. Cube Root
      ix. Factorial
    2. Basic Statistics
      i. Mean
      ii. Mode
      iii. Median
      iv. Standard Deviation
  C. Number Checker
    i. Armstrong Number
    ii. Strong Number
    iii. Perfect Number
    iv. Automorphic Number
    v. Oblong Number
    vi. Harshad Number
    vii. Odd/Even
    viii. Prime Number
    ix. Fibonacci Number
    x. Lucas Number
    xi. Triangular Number
    x. Palindrome Number

D. Series Generator
i. Armstrong Series
ii. Strong Series
iii. Perfect Series
iv. Automorphic Series
v. Oblong Series
vi. Harshad Series
vii. Odd Series
viii. Even Series
ix. Square Series
x. Cube Series
xi. Prime Series
xii. Fibonacci Series
xiii. Lucas Series
xiv. Triangular Series
xv. Palindrome Series

II. Converter Tools
A. Length Converter
B. Temperature Converter
C. Weight Converter
D. Time Converter

III. Geometry Tools
A. Area Calculator
1. Rectangle
2. Square
3. Circle
4. Triangle
5. Parallelogram
6. Rhombus
B. Perimeter Calculator
1. Rectangle
2. Square
3. Circle
4. Triangle
5. Parallelogram
6. Rhombus
C. Lateral Surface Area Calculator
1. Cube
2. Cuboid
3. Cone
4. Cylinder

5. Sphere
6. Hemisphere

D. Total Surface Area Calculator
1. Cube
2. Cuboid
3. Cone
4. Cylinder
5. Sphere
6. Hemisphere

E. Volume Calculator
1. Cube
2. Cuboid
3. Cone
4. Cylinder
5. Sphere
6. Hemisphere

IV. Health Tools
A. BMI Calculator
B. Ideal Weight Calculator

V. Numerology Tools
A. Life Path Calculator
B. Birth Number Calculator
C. Expression Number Calculator
D. Soul Urge Number Calculator
E. Sun Number Calculator
F. Personality Number Calculator
G. Name Numerology Calculator

VI. Bonus Tools
A. Pattern Printing
1. Square Pattern
2. Hollow Square Pattern
3. Right Triangle Pattern
4. Right Down Triangle Pattern
5. Left Triangle Pattern
6. Left Down Triangle Pattern
7. Hollow Triangle Pattern
8. Pyramid Pattern
9. Hollow Pyramid Pattern
10. Reverse Pyramid Pattern
11. Hour Glass Pattern

12. Hollow Hour Glass Pattern

VII. Exit

- After Creating Layout Worked On Implementation

IMPLEMENTATION

- Firstly, Created A Folder For Storing Functions Of Different Tools, Then Worked Intensively On Making Code Logic For Fulfilling The Task User Want To Do.
- Then, Started Making Functions According To The Layout Designed.
- For Example, All Calculation Function In One File, All Converter Functions In One File, Etc.
- After Making All The Files Merged And Combined Them With Main File.
- After Combining All The Functions Created A Menu Just Like Layout So That User Could Work Upon My Toolkit.

SOURCE CODE

- Providing Code For Main Menu
- As Project Is Big.

```
def main():
    print("Welcome To Calcunite Your Python Toolkit")
    print("Please Select An Opion:")
    print()
    print("1)Calculator Tools")
    print("2)Converter Tools")
    print("3)Geometry Tools")
    print("4)Health Tools")
    print("5)Numerology Tools")
    print(“6)Bonus Tools”)
    print(“7)Exit”)

    while True:
        try:
            print()
            choice = int(input("Enter Choice: "))
            break
        except ValueError:
            print("Invalid Choice. Please Enter An Integer.")


    while True:
#Here According To The Choice Function Will Be Called And Perform Its Task
```

OUTPUT

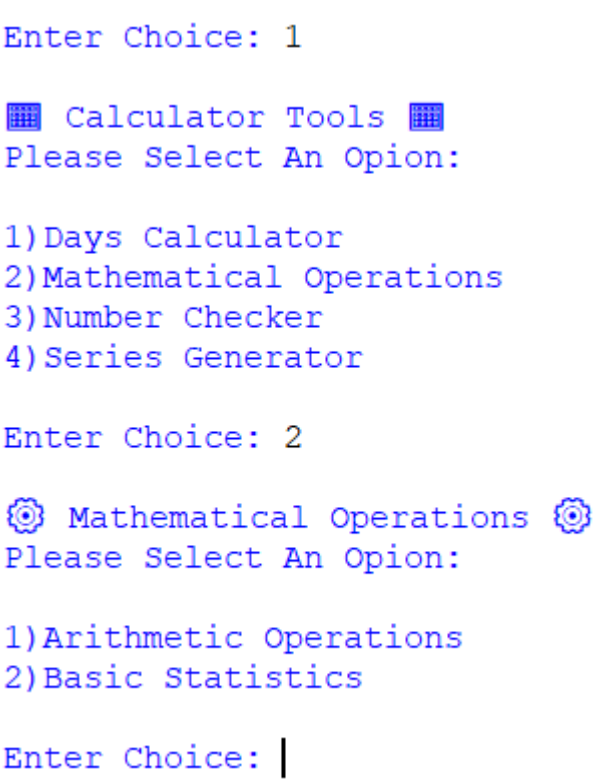
```
Welcome To Calcunite Your Python Toolkit
Please Select An Opion:

1)Calculator Tools
2)Converter Tools
3)Geometry Tools
4)Health Tools
5)Numerology Tools

Enter Choice:
```

EXAMPLE (PERFORMANCE)

- If Choice Is 1 User Can Perform Sub Operations In Calculator Tools:

```
1)Calculator Tools
2)Converter Tools
3)Geometry Tools
4)Health Tools
5)Numerology Tools

Enter Choice: 1

▦ Calculator Tools ▦
Please Select An Opion:

1)Days Calculator
2)Mathematical Operations
3)Number Checker
4)Series Generator

Enter Choice:
```

- After Choosing, User Will Be Provided Task Which He/she Can Perform, Let's Consider Mathematical Operations, (Choice = 2)



- Mathematical Operation Has Two Sub Sections, User Can Perform Arithmetic Operations As Well As Basic Statistics

- Let's Say Choice = 1, Arithmetic Operation. A Submenu Will Open Through Which The User Can Select Whether He/She Want To Add Elements, Subtract, Multiply, Or Perform Other Operations.

```
Enter Choice: 2

⚙ Mathematical Operations ⚙
Please Select An Opion:

1)Arithmetic Operations
2)Basic Statistics

Enter Choice: 1

⁜ Arithmetic Operations ⁜
Please Select An Opion:

1)Addition
2)Subtraction
3)Multiplication
4)Division
5)Square
6)Square Root
7)Cube
8)Cube Root
9)Factorial

Enter Choice: 1

+ Addition +
How Many Numbers You Want To Add: 2
Enter Number 1: 3
Enter Number 2: 4
Sum Of Given Numbers Is: 7
```

CONCLUSION

- The implementation of **Calcunite** involved meticulous planning, design, and development to create a versatile Python toolkit that meets the diverse needs of users. By offering a wide range of calculator, converter, geometry, health, and numerology tools, **Calcunite** aims to empower users with the ability to perform various calculations and analyses efficiently. With its intuitive user interface and robust functionality, **Calcunite** stands as a valuable resource for professionals, students, and enthusiasts seeking reliable tools for mathematical, geometrical, health-related, and numerological tasks.

- Will add more features in this toolkit for making it a more useful and intensive operations toolkit.

To check the final application of project you can visit the GitHub profile of the project creator.

- **GitHub Username:** ***madhavagarwal3012***
- **Linktree Username:** ***madhavagarwal3012***
- **Project Link:** ***Calcunite-Executable-File-Application/Application at main · madhavagarwal3012/Calcunite-Executable-File-Application (github.com)***