MODERN MATRIX CALCULATOR

Group Members Details

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Problem Statement

- In this program I have tried to make a modern matrix calculator which will perform some matrix operations, with the help of AI features.

Key Features/Benefits

- It calculates the matrix operation via sound input given by the microphone of the user.
- If the input sound quality is good the output (or) the answer you expect from it will be given soon.
- It is very useful for the physically disabled person as it takes every input by voice.

List of Software Used

- pip install speechrecognition
- pip install pipwin
- pipwin install pyaudio
- pip install gTTs
- pip install pyttsx3
- pip install numpy

Workflow

Step – 1:

Firstly, the code will give a welcome message about the operations it can perform on the matrices.

```
========== RESTART: C:\Users\Subhadeep\Desktop\final_project\start.py ==========

Welcome to our Modern Matrix Calculator

Here are some operations which we can perform...
1. Addition
2. Subtraction
3. Multiplication
4. Transpose
5. Determinant
6. Adjoint
7. Inverse
8. Cofactor
```

Step – 2:

In the next step it will ask you the operation you want to perform and to enter the rows and columns needed for the operation.

```
Speakup your operation:
You have spoken: determinant
Enter rows and columns for Matrix:
Enter no. of rows:
3
Enter no. of columns:
3
```

Step – 3:

Now you have to speak up each element in matrix then it will form the matrix and perform the operation which you have mentioned and gives you the correct output.

```
Enter elements of Matrix:
Element  1 1 :
55
Element  1 2 :
29
Element  1 3 :
7
Element  2 1 :
35
Element  2 2 :
69
Element  2 3 :
74
Element  3 1 :
83
Element  3 2 :
92
Element  3 3 :
5
[[55 29  7]
 [35 69 74]
 [83 92  5]]

Determinant of matrix is:
 -199971.00000000026
>>>
```