Voice Operated Calculator

Using PYTHON

AIM

To make/design voice opertated calculator usin oython libraries.

Advantages

- User friendly.
- Specially made for physically disabled people.
- We can design many different utility software using same software.
- Any one can operate it easily.

Requirements

- Window(64-bit) or IOS operating system.
- Python 3.7/3.8/3.9.
- PyAudio installed.
- Speech Recognition installed.
- Math.
- Python Speech To Text.

Module used in this program

- Math(Inbuild).
- PyAudio(Need to install).
- Speech Recognition(Need to install).
- Python Speech To Text(Need to install).

List of Software used

- Visual Studio Code.
- IDLE(Python 3.9 64-bit).
- Python Packages.

Deliverables

- https://pypi.org/
- https://github.com/
- https://stackoverflow.com/

Workflow

1. Setting up the required packages through powershell.
2. Importing the required packages to set interface.
3. Asking the user what operation he wants to do.
4. Asking the operands from the user.
5. Responding with answer and ask for feedback.
6. Thanking for the feedback.

Powershell Commands to install modules.

- PyAudio – pip install PyAudio
- Python Speech To Text – pip install pyttsx3
- Speech Recognition – pip install SpeechRecognition

Installation packages through powershell.

```
PS C:\Users\HP> pip install PyAudio
Requirement already satisfied: PyAudio in c:\users\hp\appdata\local\programs\python\python38\lib\site-packages (0.2.11)
PS C:\Users\HP> pip  install SpeechRecognition
Requirement already satisfied: SpeechRecognition in c:\users\hp\appdata\local\programs\python\python38\lib\site-packages (3.8.1)
PS C:\Users\HP> pip install pyttsx3
Requirement already satisfied: pyttsx3 in c:\users\hp\appdata\local\programs\python\python38\lib\site-packages (2.90)
Requirement already satisfied: comtypes in c:\users\hp\appdata\local\programs\python\python38\lib\site-packages (from pyttsx3) (1.1.7)
Requirement already satisfied: pypiwin32 in c:\users\hp\appdata\local\programs\python\python38\lib\site-packages (from pyttsx3) (223)
Requirement already satisfied: pywin32 in c:\users\hp\appdata\local\programs\python\python38\lib\site-packages (from pyttsx3) (228)
PS C:\Users\HP>
```

Importing the required packages to set the interface.

new.py > ...

```python
import speech_recognition as sr
import pyttsx3
import math

engine = pyttsx3.init('sapi5')
voices = engine.getProperty('voices')
engine.setProperty('voice', voices[1].id)


#function for audio output--------------------
def say(audio):                                 #
    engine.say(audio)                           #
    engine.runAndWait()                         #
#-----------------------------------------------
```

Asking the user what operation he wants to do.

```
SAY
ADD or ADDITION to add two numbers
DIFFERENCE or SUBTRACT to subtract
DIVIDE or DIVISION to divide
MULTIPY or PRODUCT to multipy
REMAINDER or LEFT to find the remainder
COS or COSINE to find cosine value of an angle
SIN or SINE to find sin value of an angle
TAN or TANGENT to find tan value of angle
SQUARE root or ROOT to find square of a positive integer
EXPONENTIAL or RAISED TO POWER to find the eponantial value
LOG to determine the logrithemic value first tell the number and then base
```

Asking the operands from the user.

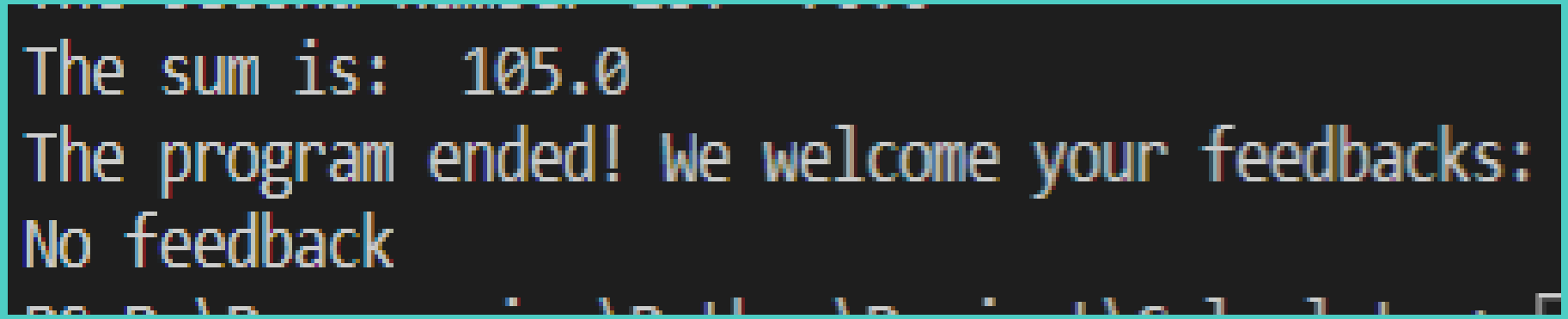
```
Listening...
Recognizing...
User said: addition

Listening...
Recognizing...
User said: 29

The first number is:  29.0
Listening...
Recognizing...
User said: 76

The second number is:  76.0
```

Responding with answer and asking for feedback.



OUTPUT

```
SAY
ADD or ADDITION to add two numbers
DIFFERENCE or SUBTRACT to subtract
DIVIDE or DIVISION to divide
MULTIPY or PRODUCT to multipy
REMAINDER or LEFT to find the remainder
COS or COSINE to find cosine value of an angle
SIN or SINE to find sin value of an angle
TAN or TANGENT to find tan value of angle
SQUARE root or ROOT to find square of a positive integer
EXPONENTIAL or RAISED TO POWER to find the eponantial value
LOG to determine the logrithemic value first tell the number and then base
Hello! Tell me the operation to do!
Listening...
Recognizing...
User said: exponential

Listening...
Recognizing...
User said: 7

The nummber is:  7.0
Listening...
Recognizing...
User said: 4

The power is:  4
The answer is:  2401.0
Say Yes if you want to do more calculations
Listening...
Recognizing...
User said: no

The program ended! We welcome your feedbacks:
Listening...
Recognizing...
User said: no feedbacks

no feedbacks
Thank You
PS D:\Programming\FAI\Project\Calculator>
```

Thanks!

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