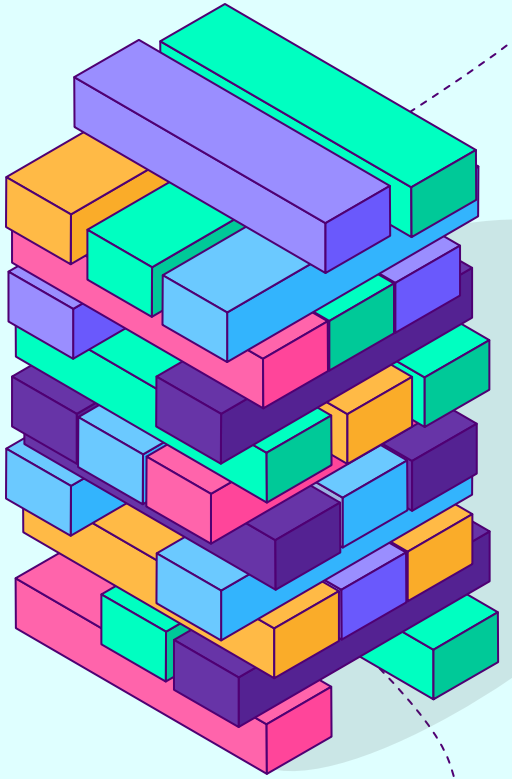
Problem statement: To develop a program which is capable of autonomously solving a Rubik's cube

The goal of this project is to create a reliable automated Rubik's cube solver that can successfully manipulate and reposition the cube's colored faces to achieve a solved state.

- The main motive of the project is to solve the cube by using appropriate methods through which a cube should be solved from any given case.
- It solves very single case of the **43** quintillion combinations of the 3x3 rubik's cube.
- It makes a beginner to learn from any case that a beginner faces and it produces solutions and guides the user from the first step to the Last step.
- It is beneficial in many ways ,it boosts Cognitive Power, Improves Memory, it develop problem-solving skills , concentration , it enhances brain-hand-eye coordination and reflexes.



AWESOME PUZZLES

This program incorporated advanced solving algorithm, the CFOP(Fridrich) method to solve each of the case and produce solution. First solving a cross on the bottom, continuing to solve the first 2 layers, orienting the last layer(OLL), and finally, permuting the last layer (PLL).

A standard Rubik's Cube has 43,252,003,274,489,856,000 (43 quintillion) possible permutations and it solves each of the case using the correct method.

It is also a platform to learn and practice cubing.

Modules

Tkinter

01

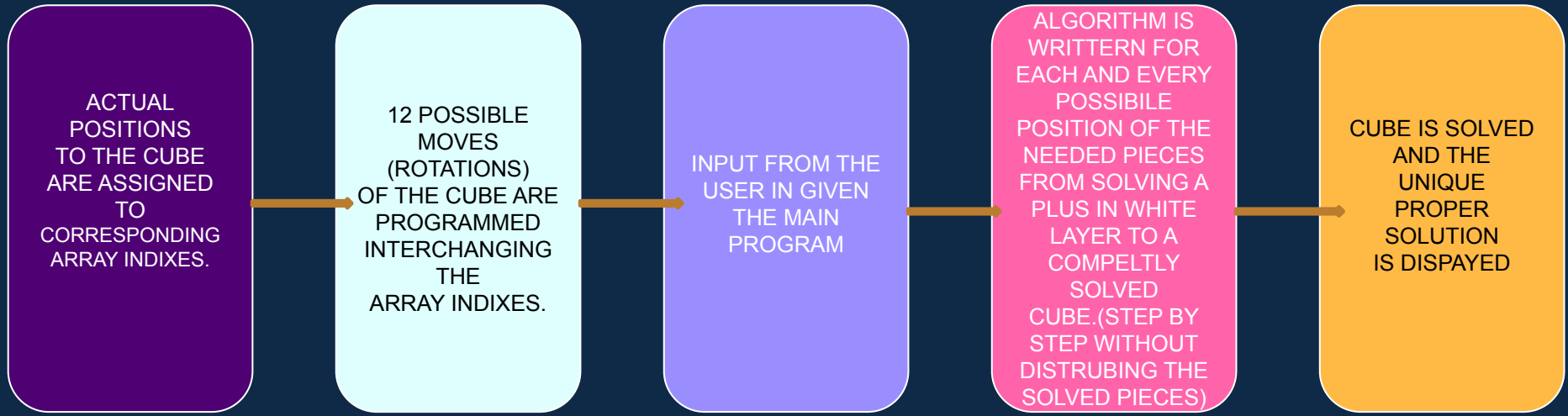
It is a popular python library for creating GUI(GUIs) that allows developers to design windows,widgets,and event – driven application with ease

02

Numpy

Numpy is a fundamental Python library for numerical computations , providing for large, multi-dimensional arrays and matrices along with a wide range of mathematical functions

Construction



What is new in our project ?

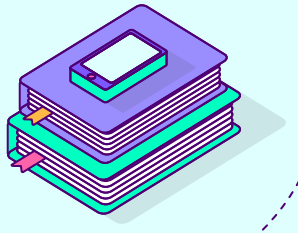
All of the exsisting projects solves a cube in the minimum no.of moves without following any of the algorithm by trail and error and the solution produced is of no use.

Our project :

- It provides step by step perfectly understandable proper solution to solve a cube for any given case out of 43 quintilion cases and makes the user to understand solving a cube.
- So it makes a beginner to learn to solve a cube from the unquie current case of the cube that the user got.

Advantages and uses:

- This can be very useful for cognitive retraining.
- It makes a beginner to learn to solve a cube from the unique current case of the cube that the user got and makes learning to solve a very much easier.
- It also improves the reflexes.
- It improves problem solving skills, concentration, helps in stress reduction, and it improves memory.
- Video games produces excessive dopomine in the brain and results in reduction of dopomine receptors in our brain which leads to many severe problems.
- So, instead of playing video games, solving cubes can be a very good practice among the youth.



CONCLUSION

In future we will improvise this project for all kind of audience.we can also use this to track the performance and improvements of the people . This project can be improved into a realistic model with multiple levels for the people with intellectual disability for their cognitive re-training , professional cubers , and the common users. In conclusion, It provides various benefits to users , and the well-fare of society.

THANKYOU !