**Python Project: Synopsis**

1. **Title of the project:** Sudoku
2. **Description of the project:**

Sudoku is a logic-based, combinatorial number-placement puzzle. In classic sudoku, the objective is to fill a 9×9 grid with digits so that each column, each row, and each of the nine 3×3 sub grids that compose the grid contain all of the digits from 1 to 9.

The user enters a certain number and the system checks if the number entered is correct or not and makes sure if the number isn’t getting repeated in a grid, row or column.

1. **Inputs and expected outputs:**

In this project , the user first sees the opening page where he/she gets to choose either to start the game, look at the rules or end the game. On starting the game,the user is asked to choose a desired level – easy, medium, hard. The puzzle will be displayed and the user is asked to start the game. Then, the co-ordinates of the grid along with the numbers are to be entered.

The input is considered according to the rules and a message asking the user to try again is returned if the number is not right. If the number is right then the user can proceed with different co-ordinates and enter the number. The user can do this until the puzzle is solved i.e. all the numbers are right. And a congratulatory message is posted at the end along with the scoreboard.

1. **Using GUI in this project:**

We have used tkinter as a gui for making this project. The components which were used include:

1. **Label:** In order to do that, we create a label object as follows:

myLablel = Label(root , text = “Hello!”).

the function label takes 2 parameters

1. The window to which it shoud be added to, in this case root.
2. The text that is displayed.
3. **Frame:** The Frame widget is very important for the process of grouping and organizing other widgets in a somehow friendly way. It works like a container, which is responsible for arranging the position of other widgets.

w = Frame ( master, option, ... )

1. **Button:**

Widget\_name = Button(parent\_window\_object, option = value)

Some of the Options are: text to be displayed on the button

Command to be performen when the button is clicked.

**Some of the other components we used include bg, messagebox.showinfo and PhotoImage.**

1. **Team Details:**

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