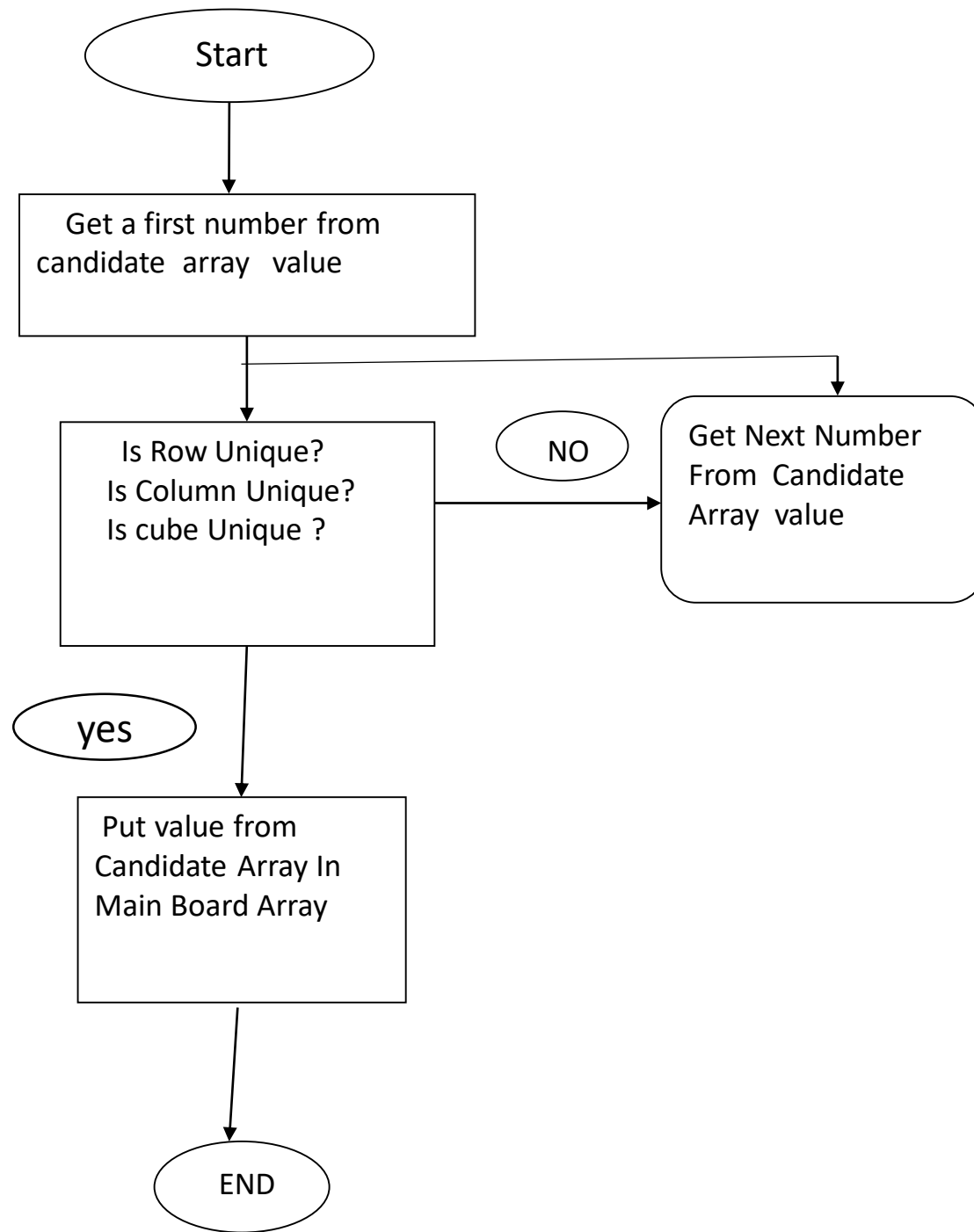# SUDUKO SOLVER

GROUP 35:

1.SRUTHI NENAVATH – S20210020299

2.P.JASMITHA SAI –S20210020314

INTRODUCTION:

- In this Sudoku game, the user wants to develop a game where the player fills empty boxes with remaining numbers according to the game's conditions. Following are the game requirements and resultant conditions for this Sudoku game

- The game board should be of 9*9 squares space.

- The game should display the grid with some of the boxes already filled with random numbers ranging from 1 to 9.

- The game should allow the player to fill in empty boxes.

- The game should not allow the player to repeat any number in any row, column, or square.

- If the player fills all the boxes with correct numbers and without any repetition, he wins the game

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         │
                         ▼
          ┌──────────────────────────────┐
          │   Get a first number from     │
          │  candidate  array   value     │
          └──────────────┬───────────────┘
                         │
          ┌──────────────┴─────────────────────────────┐
          │                                             │
          ▼                                             ▼
┌───────────────────────┐              ┌──────────────────────────┐
│    Is Row Unique?      │     NO       │  Get Next Number         │
│    Is Column Unique?   │─────────────▶│  From  Candidate         │
│    Is cube Unique ?    │              │  Array  value            │
└───────────┬───────────┘              └──────────────────────────┘
            │  yes
            ▼
┌───────────────────────┐
│   Put value from       │
│  Candidate Array In    │
│  Main Board Array      │
└───────────┬───────────┘
            │
            ▼
       ┌─────────┐
       │   END   │
       └─────────┘
```

TECHNOLOGY USED

- Using Dev C++code for the project.
- The Source Code – An Object Oriented Programming in C++ is used.

CONCEPTS USED:

- Class and objects
- Inheritance

```
y|x | 0 1 2 | 3 4 5 | 6 7 8
-----------------------------------
  0 | 1 2 3 | 4 5 7 | 6 8 0
  1 | 4 6 5 | 1 8 9 | 2 0 0
  2 | 8 7 9 | 2 6 3 | 5 1 0
-----------------------------------
  3 | 2 1 4 | 0 7 5 | 0 6 5
  4 | 3 8 0 | 2 0 7 | 4 1 4
  5 | 7 5 7 | 9 1 6 | 1 2 3
-----------------------------------
  6 | 0 0 1 | 7 4 0 | 8 9 0
  7 | 0 4 2 | 6 3 5 | 7 4 0
  8 | 6 4 7 | 8 9 1 | 3 5 2
-----------------------------------


1. Add Value
2. Tip
3. Check
4. Solution
5. Main Menu
```

```
YOU LOST!

5. Main Menu
|
```