



# DOKU

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## Introduction

**DOKU** is a fresh take on traditional Sudoku. Doku introduces bright colors and an easier to track format (without changing the rules of normal Sudoku) for players to slip into a fun and cozy puzzle game!

For those who are unfamiliar, there are 3 basic rules to Sudoku:

1. A number may not be repeated within the same **BOX**
2. A number may not be repeated in the same **ROW**
3. A number may not be repeated in the same **COLUMN**

1	2	3	4	5	6	7	8	9
2	3	4	5	6	7	8	9	1
3	4	5	6	7	8	9	1	2
4	5	6	7	8	9	1	2	3
5	6	7	8	9	1	2	3	4
6	7	8	9	1	2	3	4	5
7	8	9	1	2	3	4	5	6
8	9	1	2	3	4	5	6	7
9	1	2	3	4	5	6	7	8

## Implementation

Although the final version is written entirely in Swift/SwiftUI, Doku did not start that way.

I originally wrote the Sudoku puzzle generating algorithm in Python on Google Colab. No UI, just the algorithm.

Then, the Python code was translated into Swift and imported into Xcode. Of course, with some bugs that had to be smashed.

Alongside the now Swift algorithm, SwiftUI was used to produce the UI elements.

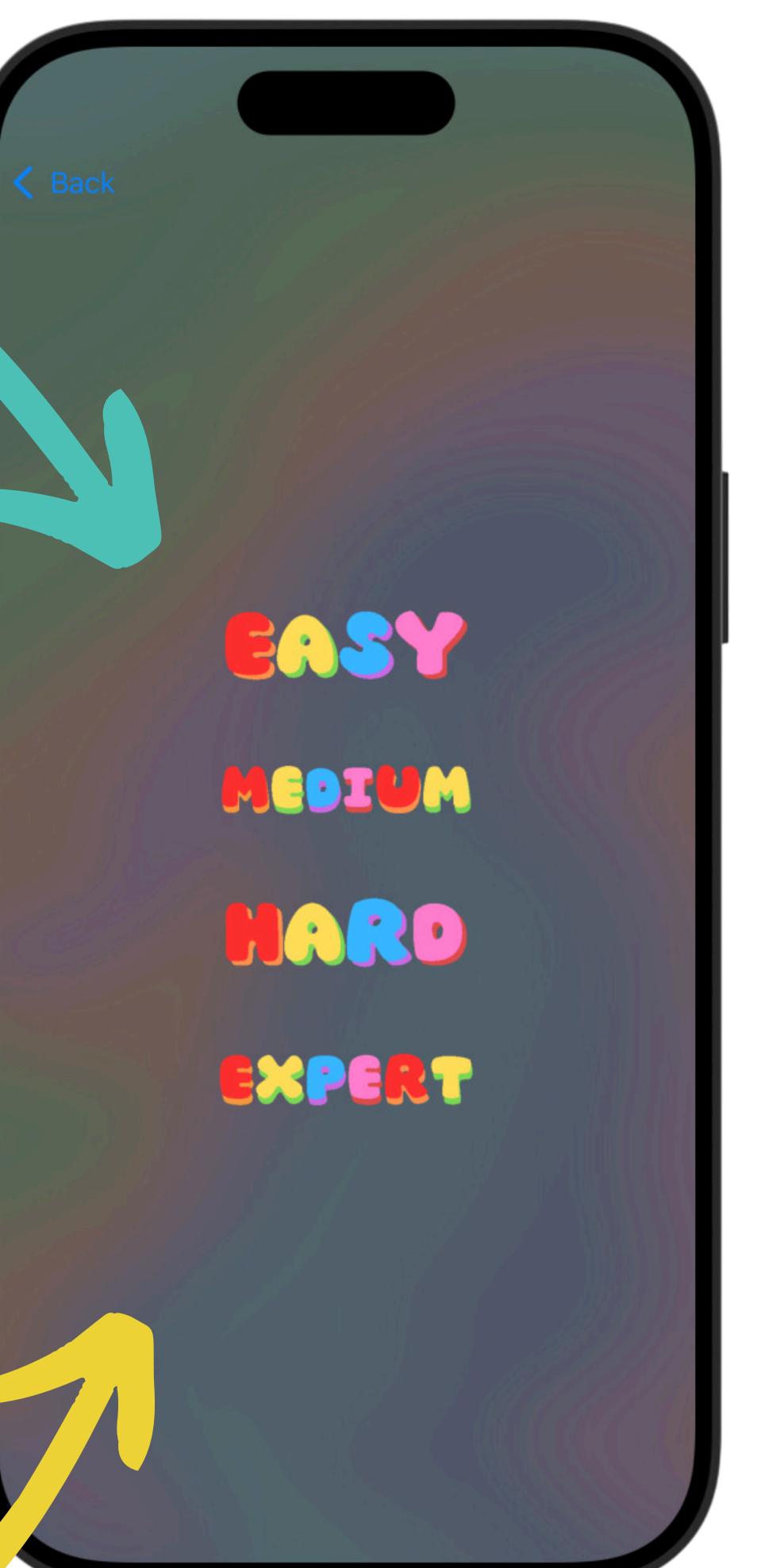
This poster and all of the design elements for Doku were made on Canva.



## Gameplay

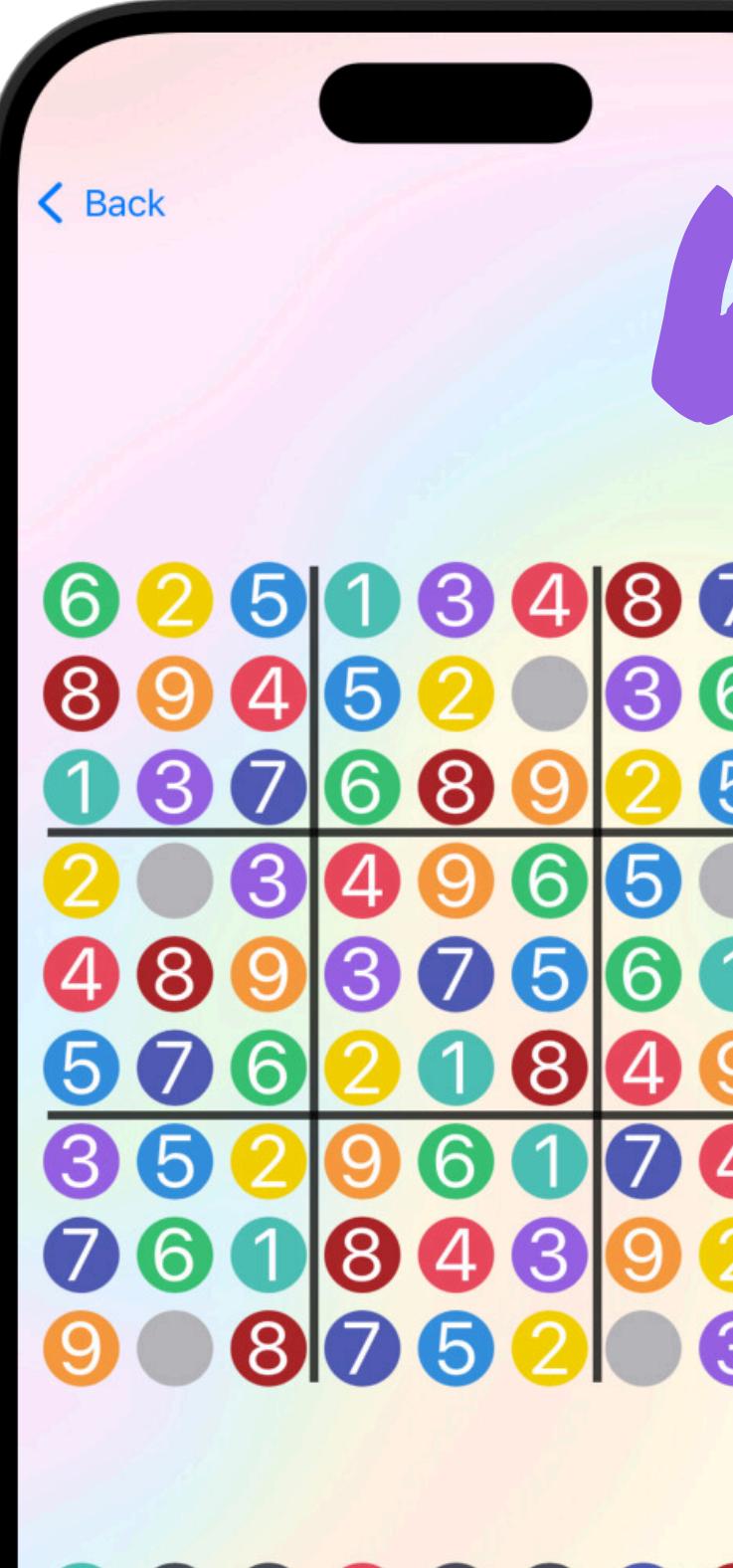
1

Players can choose their level difficulty, which determines how many bubbles need to be filled in.



2

There is a light and dark mode available for players to enjoy!



3

Each number has a coordinated color to make it easier for players to see at a glance what numbers they are missing.



4

There is a number button line for players to choose what number bubble they wish to fill in, which grays out when they place nine of one number.

## Additional Features

5

Players will be congratulated when they complete a game correctly!

6

When an incorrect guess is placed, players will see a visual indication that their answer is incorrect.



7

The current number selected by players to fill in will be bigger than the rest.



## Acknowledgements

Thank you Dr. Isaacs and Professor Scrivnor for advising me and always pushing me in the right direction.

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