UnPuzzled

A Web App to solve a Sudoku puzzle

Women Engineers Cohort 4

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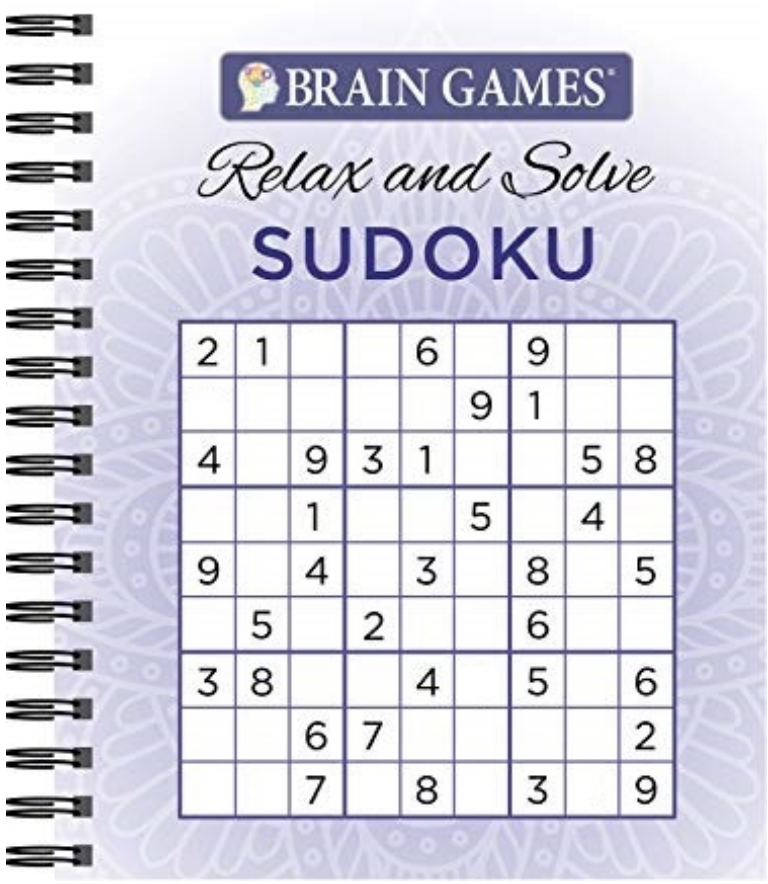
Outline

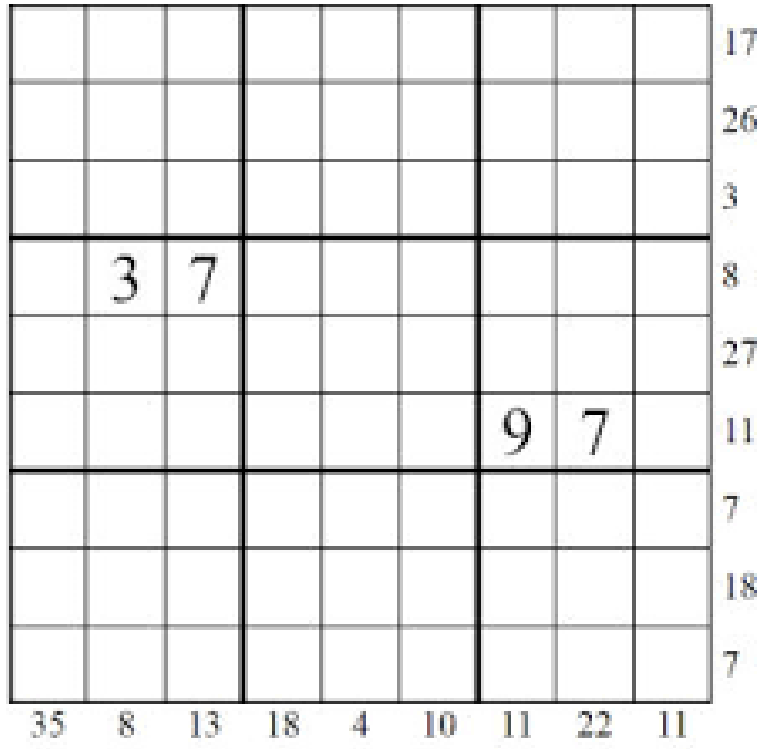
Problem Statement

While solving a particularly difficult Sudoku puzzle, it is quite easy to get stuck. You may also get lost along the way to the point where you may have to restart the puzzle all over again.

Solution Overview

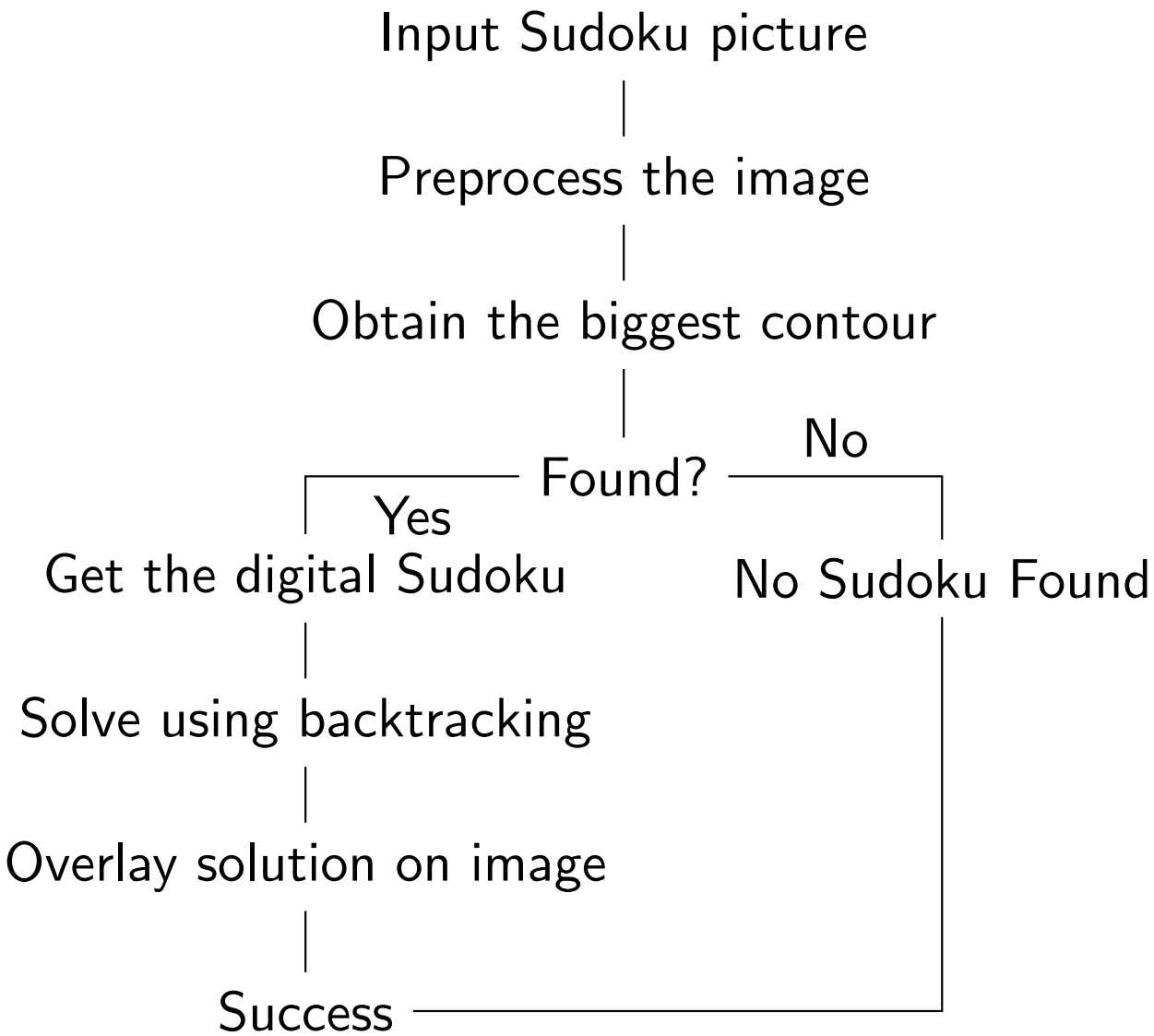
The goal of the project is to solve sudoku using neural networks and backtracking. The user needs to upload the picture of the desired sudoku to be solved and the software will solve it in negligible time.





By the end of the presentation, these puzzles will be solved using our app.

Architecture



Technology Stack

- OpenCV with Python: Image processing and programming
- OCR engine: Used for digit recognization
- Deta space: For temporary storage of the uploaded file to get the path
- Streamlit: For web app development and deployment

Result and Challenges

- The software works fine with clear digits and images of standard sizes.
- Streamlit only takes the image as binary input.
- Images should only be in .png, jpeg, or jpg format.

Future plans

- We plan to make our app functional for solving sudoku puzzles on paper.
- We plan to enable a feature that lets the user update the numbers if detected incorrectly.
- To extend the range of the web app by taking screenshots of the Sudoku using the web camera.

Demonstration Links

- **GitHub Link:** `http://bit.ly/3mPZOY4`
- **Web Application:** `https://bit.ly/UnPuzzled`

QR Code

Please use a QR code reader app to scan the code

Conclusion

- In conclusion, our Sudoku solver software offers a powerful and efficient solution for solving Sudoku puzzles.
- We believe that our software will be a valuable tool for Sudoku enthusiasts, educators, and anyone looking to improve their problem-solving skills.

Thank you for considering our software.

We look forward to your feedback and suggestions.