Implementing a 4x4 *KENKEN (KENDOKU)* Game with *MIPS*

An overview of a project that successfully implements a 4×4 KENKEN game using MIPS assembly language on MARS.

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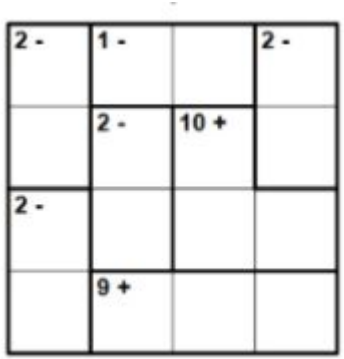
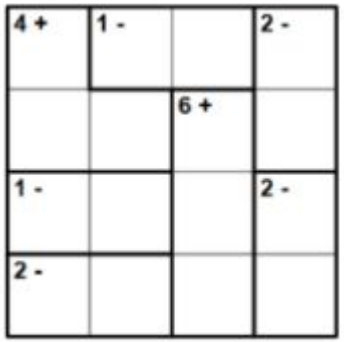


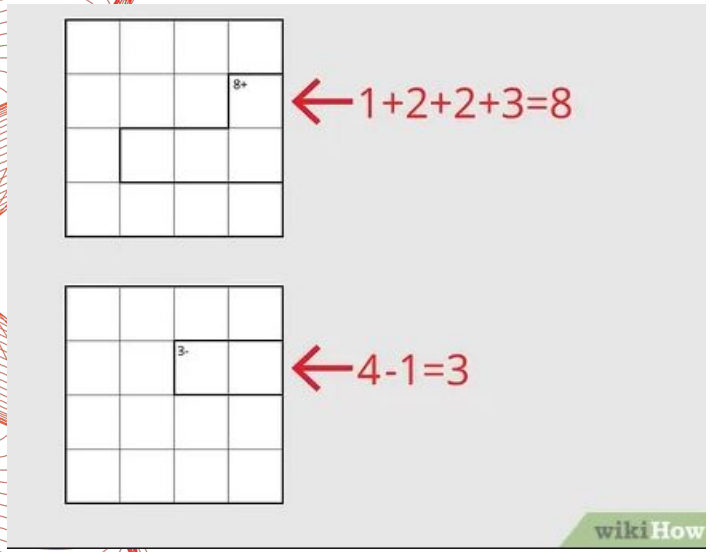


The two KENKEN Maps in the game

General Framework

01 The cages have control numbers such as +2 or -1, indicating the target values that the numbers in the cage should combine to produce.

02 The game display consists of a 4x4 grid with white cages representing control numbers.



*Basic Rule of KenKen Puzzle**

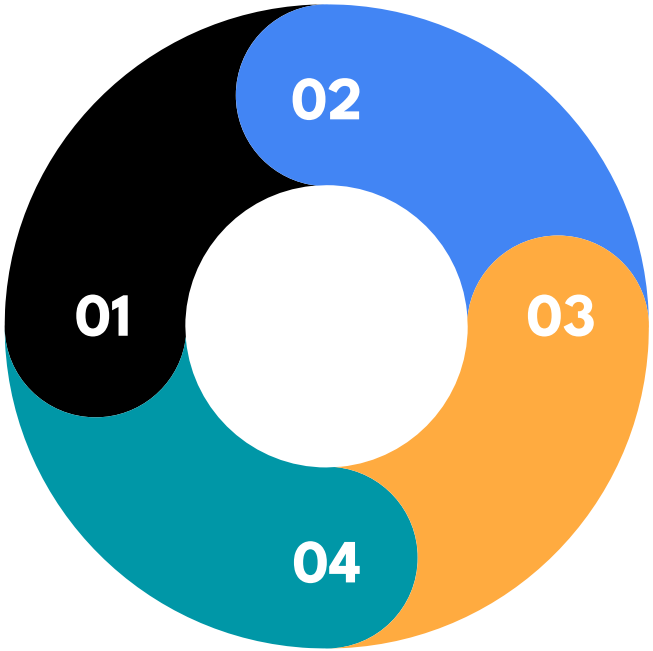
Gameplay

- Players have 3 lives in the game.
- The project includes a solution array comparison mechanism for checking the player's input against the correct solution.
- Input handling is implemented to receive, verify, and modify user input.

**How to play KenKen?: https://www.wikihow.com/Play-Kenken*

The Game Flow

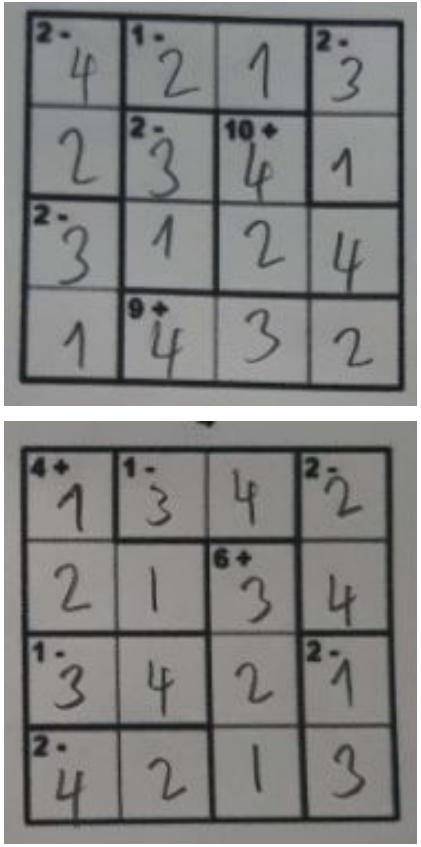
The game starts with displaying the initial grid to the player.



The solution is compared to the correct solution, and incorrect entries are indicated in the grid.

The program prompts the player to input their solution, checks for validity, and updates the grid accordingly.

The game continues until it is solved or the player runs out of lives.



The solutions to the two KENKEN puzzles in the game.

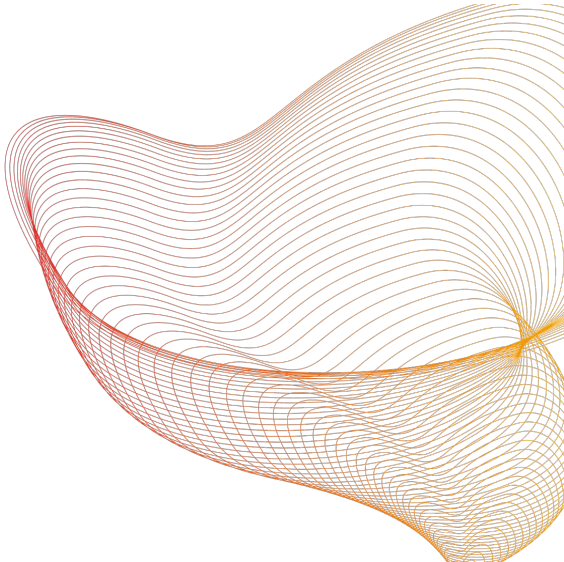
Conclusion

- The project demonstrates problem-solving skills and showcases the versatility of MIPS programming.
- Solution array comparison using macros, input handling, and inclusion of lives add a challenging element to the game.

References:

1. *Kağıt üzerinde Oynanan Zeka Oyunları - Kendoku*
   https://quizizz.com/admin/quiz/608cfb6d30c3d4001b6c3df0/kat-uzerinde-oynanan-zeka-oyunlar-kendoku

2. *How to play KENKEN?:*
   http://www.kenkenpuzzle.com/howto/solve



Thank you for listening.