

Technical University of Košice
Department of Computers and Informatics

Problem Set 6
snake

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Assignment

Using the ncurses library, create a program (game, presentation or other artistic work), with the following minimal requirements:

- Project contains 2D world.
- Project meets at least 3 challenges:
 - Work with colors
 - Keyboard control (no Enter needed)
 - Multiply levels
 - Work in time (in the time the program is changed)
 - Work with command-line arguments
 - Work with files
- Project must be more complicated than the sample programs, with an adequate level of difficulty

Program implementation:

Initialization of libraries and variables:

- The ncurses, time, string, and stdlib libraries are used.
- Variables and arrays are declared to store information about the playing field, snake, apples and other parameters.

Data structure:

- A `pyt` structure is used to store the previous coordinates of the snake, allowing you to track its movement.

Main loop:

- The main game loop is started using the ncurses library.
- The playing field, the current level, the number of apples collected, and the snake are displayed.
- The snake is controlled using the w, s, a, d keys.

Game Logic:

- The snake moves around the field, following the keystrokes and collecting apples.
- When an apple is eaten, the snake gets bigger, the apple is moved to a new place.
- The game ends when it collides with the boundaries of the field or itself.

Levels and Speed:

- Levels of difficulty are implemented, varying depending on the number of apples collected.
- As the level increases, the speed of the snake increases.

Example of using the program:

- Start the program.
- Use the w, s, a, d keys to control the snake.
- Collect apples, increase the score and watch the difficulty level.

Conclusion:

- The program provides a basic implementation of the snake game using the ncurses library. Some aspects that can be improved:

Graphical interface:

- Adding a more colorful and informative interface.
- Ability to select the difficulty level before starting the game.

Additional features:

- Implementing the ability to pause the game.
- Saving and displaying the best results.

Error handling:

- Improved error and warning handling for more stable program operation.

Code Optimization:

- Refactoring code to improve readability and efficiency.
- Improvements may include other features that can make the game more fun and user-friendly.