

ZTIAP - Introduction to Interactive Applications Development

Assessment, semestral project requirements, laboratory practice SS 2020-21

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Instructor:

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Evaluation:

- Mid-term evaluation:
 - test: 10p, min. at least 3p
 - project: 60p, min. at least 35p
- final exam: 30p, min. at least 7p
- at least 56p from two evaluations for the subject and fulfill the required min. number of points

Continuous test:

- in the tenth week (exact date to be specified)

Conditions for obtaining credit:

1. Continuous work on project
2. **Active participation in laboratory practice:** solving assigned tasks and consulting the project
3. Project submission
 - a. **Submission of partial outputs and project results** to AIS within deadlines listed below
 - b. **Demonstration of partial outputs** of the project based on the check points (CHP1, CHP2, CHP3) within deadlines. below
 - c. **Demonstration of the final project** in accordance with the requirements and requisite quality at the latest in week 12 (CHP4)
4. Conditions for obtaining the credit is submission the partial outputs and project itself in AIS. Conditions are not met once at least one submission (CHP1, CHP2, CHP3, CHP4) is missing.
5. Delayed submission without penalty is possible only in specific cases (eg hospitalization, etc.)
6. Obtaining min. the number of points from the test and from the project

Method of submission to AIS: instructions in “Coursework submissions”, submission in each checkpoint CHP:

- CHP1: 07.03.2021 until 23:59 – documentation (pdf)
- CHP2: 21.03.2021 until 23:59 - documentation (pdf)
- CHP3: 07.04.2021 until 23:59 - basic implementation project files (zip)
- CHP4: 10.05.2021 until 23:59
 - final implementation project files, including graphics and audio files (zip)
 - one interesting picture from the game
 - short video from the game
- uploaded to AIS, see. instructions in “Upload Location,” and to the appropriate location in the Google Classroom as instructed

Important: Penalty for the delays in submission of project:

- CHP1, CHP2, CHP3 : -2p
- CHP4: -5

for each week of delay beginning on the day after the date of submission

Project:

Create a simple, interactive game that includes text, picture, sound, and is controlled by the keyboard and / or mouse. The game must have a goal, be playable and have an end (eg whether I won or lost, what score I got, etc.) The game should be reasonably challenging. Choose a game from the list below, while the details, concept and realization of the game is up to your creativity.

Checkpoints (CHP), submission to instructor, evaluation of the project:**CHP1 – game design documentation: 10p**

- 2p) Description of the basic goals and functioning of the game
- 1p) Description of game controls (keyboard, mouse, which buttons to what)
- 3p) Design of all game screens and menus
- 4p) OOP description of objects in the game (classes, their attributes and methods)

CHP2 - documentation with prepared documents: 3p

- 3p) graphic and sound elements of the game
- add to the documentation submitted in CHP1

CHP3 – handover and demonstration of the game in progress: 7p

- Menu and additional screens
 - 1p) Main menu implemented.
 - 1p) Instruction screen.
 - 1p) Game over screen.
 - 1p) Turn on / off audio
 - 3p) using DOM manipulation
- Basic game screen

CHP4 - handover and demonstration of the final game: 40p

- 5p) Visual and audio presentation of the game
 - 2p) incorporating of audio elements
 - 3p) incorporation of graphic elements
- 7b) Architecture
 - 3b) Use of the MVC design model
 - 4b) Using the Observer design pattern
- 8p) Implementation
 - 2p) Using objects in the context of a dynamically changing scene.
 - 2p) Creating objects using constructors.
 - 2p) Split of the project into a directory structure.
 - 1p) Use <script> elements only in the <head> section
 - 1p) Separate main application cycle and logic
- 7p) Game logic and interaction
 - 3p) Resolve the collisions between objects
 - 3p) Procedurally controlled object animation
 - 1p) Keyboard and / or mouse operation
- 8p) Game
 - 3p) Complete and functioning game logic
 - 2p) The game is playable and has a point.
 - 3p) Grading of difficulty eg. increase speed or move to another level.
- 5p) Evaluation of complexity and project work
 - 3p) Project complexity and scope based on the student abilities
 - 2p) Work on the project, incorporation comments from previous CHP

Conditions:

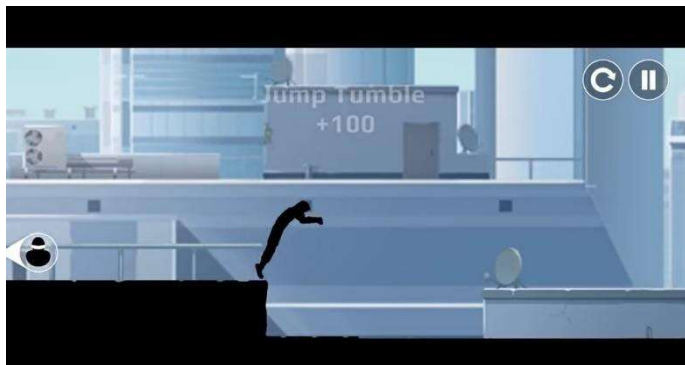
- Implement the game from the list below.
- Implementation in HTML5 Canvas and JavaScript.
- Control, presentation and model parts must be strictly separated.
- It is forbidden to use complex game libraries and frameworks.
- Each student solves a different game.

List of game types for the project:

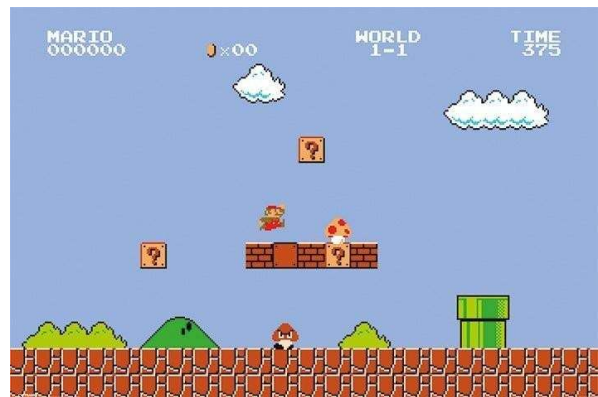
1. [pac-man](#)
2. [super mario](#)
3. asteroids
4. arkanoid
5. angry birds
6. tower defense
7. moorhuhn
8. pizza defense
9. galaxy
10. [raptor](#)
11. snake
12. miner
13. tank battle
14. vector parkour
15. [sokoban](#)
16. frogger
17. paratrooper
18. micro machines
19. jump & run
20. street fighter
21. bubble trouble
22. liero
23. ant wars
24. digger
25. space impact
26. spacing vapors
27. tetris
28. pong
29. monaco
30. duck hunt
31. foot drop
32. flappy bird

Game examples

Parkour



Super Mario Bros



Micro Machines



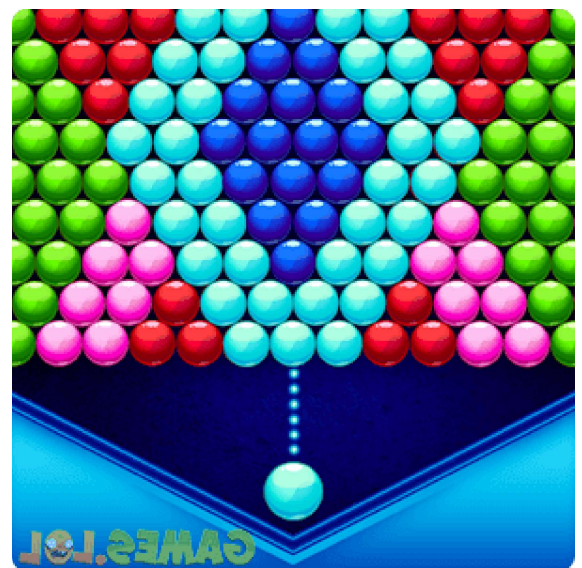
Jump and run



Angry Birds



Bubble trouble



Galaxy-attack



Arkanoid



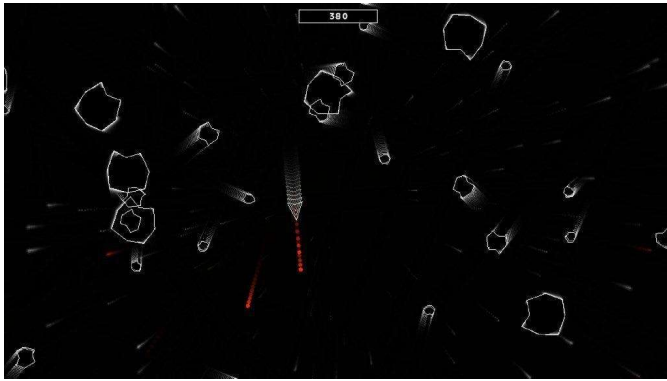
Paratrooper



Miner



Asteroids



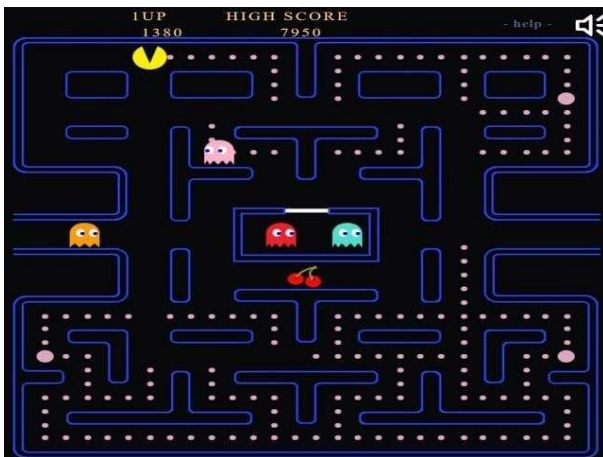
Tank Battle



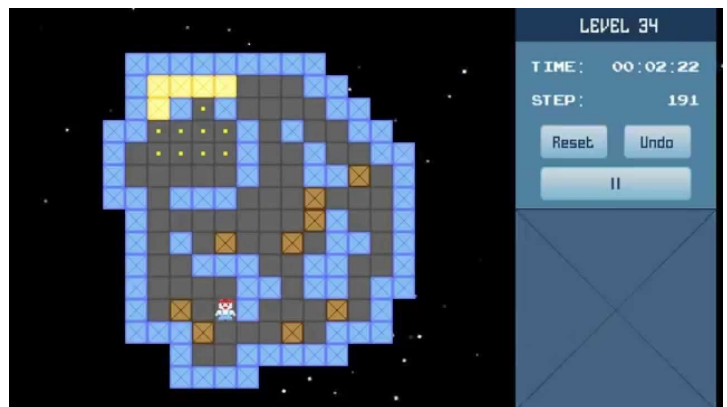
Moorhuhn



Pacman



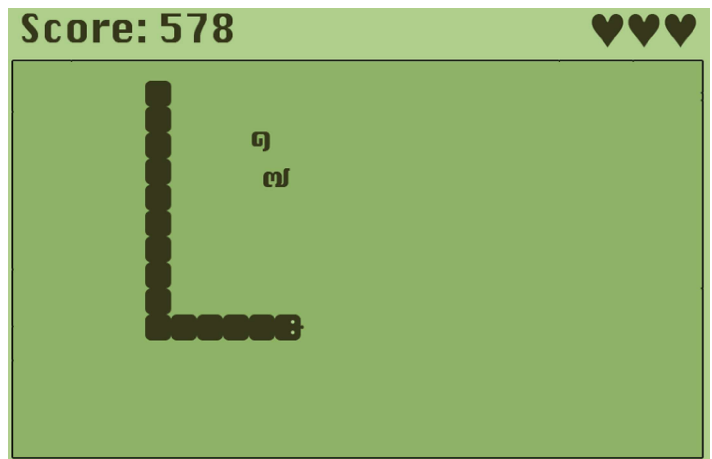
Sokoban



Tower defence



Snake



Street Fighter



Frogger



Pizza defence



Duck hunt



Scary run



Liero



ant wars



digger



space impact

