

The Arkanoid

Semester work on the subject B35APO

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Description of the subject area:

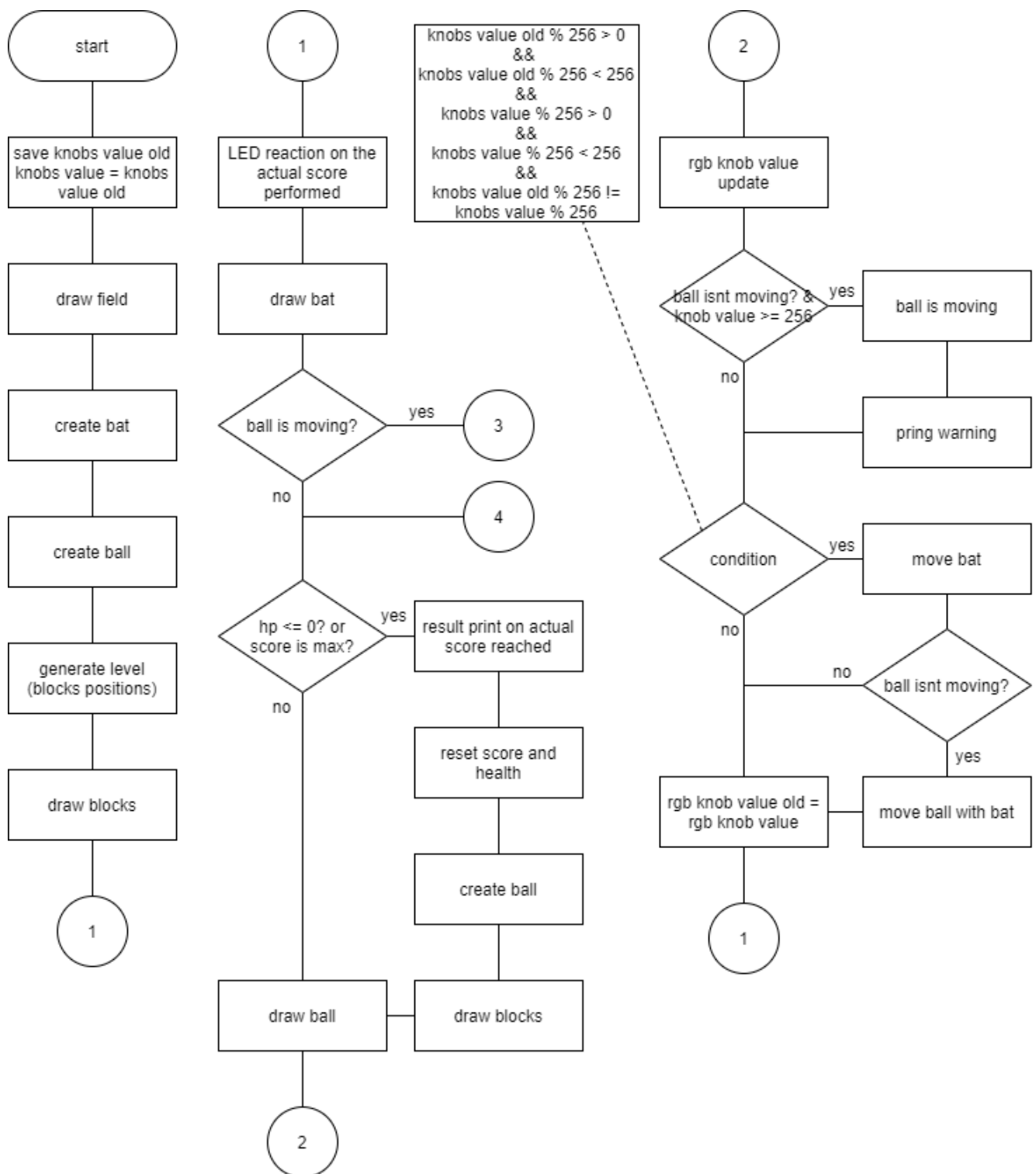
Arkanoid is a 1986 block breaker arcade game developed and published by Taito. In North America, it was published by Romstar.

Controlling a paddle-like craft known as the Vaus, the player is tasked with clearing a formation of colorful blocks by deflecting a ball towards it without letting the ball leave the bottom edge of the playfield. Some blocks contain power-ups that have various effects, such as increasing the length of the Vaus, creating several additional balls, or turning the Vaus into a laser cannon. Other blocks may be indestructible or require multiple hits to break. (more: [Arkanoid](#))

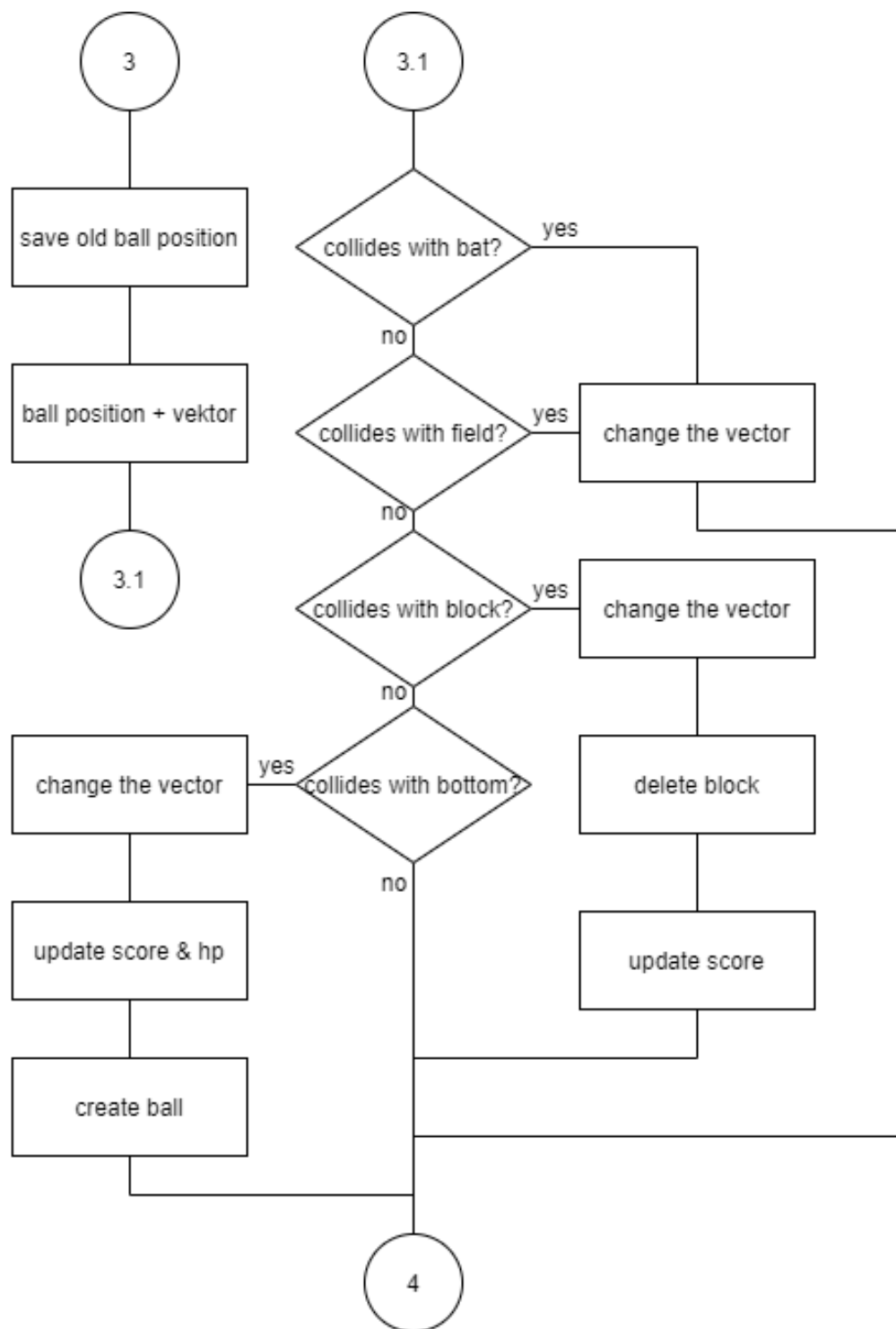
Brief description of the task:

Writing an Arkanoid game for the Mips simulator. The language used is C. The game contains the basic functions of the original game: the movement of game elements, removal of blocks, keeping score and the conditions of the arcade are met.

It is also necessary to comply with all the conditions for the delivery of the work specified [here](#). This document is also a condition for the submission of the work.



Img. 1 - Block diagram of the main process



Img. 2 - Block diagram of the collision of ball and environment

The compilation process is divided into four phases:

- Preprocessor:
 - inserts resources from other files: *level.c*, *bat.c*, *ball.c*, *peretherals.c*;
 - extends macros (`#define`);
 - performs conditional processing of the source file (`#ifdef`);
 - destroys comments;
- Translator:
 - checks text for syntax errors;
 - converts C language constructs to assembly language constructs;
 - performs independent and machine-dependent optimizations;
 - generates debugging information;
- Assembler:
 - converts assembly language constructs to machine instructions;
- Link Editor:
 - creates object files into a loadable module;
 - searches libraries to resolve external links;

Step-by-step launch of the program:

1. Download and install the [QTMips simulator](#) or use the [online version](#);
2. Download and unzip the Arkanoid.zip package;
3. Open Mips simulator (qtmips_gui.exe);
4. In the preload window that appears (or using the file tab) load the *arkanoid_mips* file;
5. After loading the file into the simulator, you need to edit the workspace, as not all interface elements will be needed. For this:
 - a.* select the window tab;
 - b.* disable: core view;
 - c.* activate: peripherals, terminal, display;
 - d.* and also set the processing speed to "unlimited" (recommended);
6. Direct launch occurs by pressing the "Run" button;
7. Further actions to work with the program are described in the user manual;