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Introduction

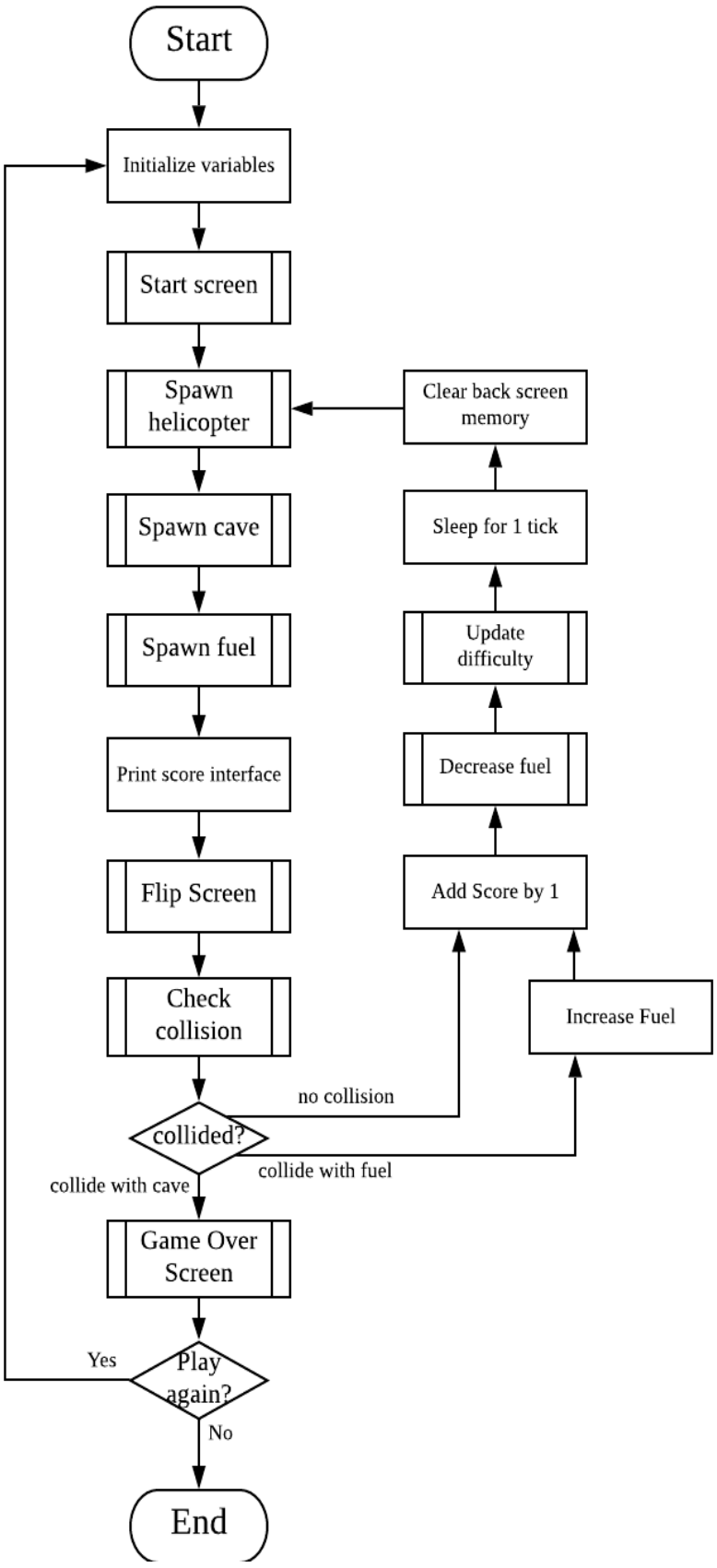
The Helicopter Game is very simple. The player has to manoeuvre the helicopter in the deep cave to avoid the obstacle, crashing in the cave will result in game over. The player also has to collect fuel as much as possible. Failed to do so, the helicopter will not be able to fly and eventually crash.

The further the player travel, the higher the score. Player can set a high score record if he/she beat the previous high score holder, the high score record will be stored inside the file.

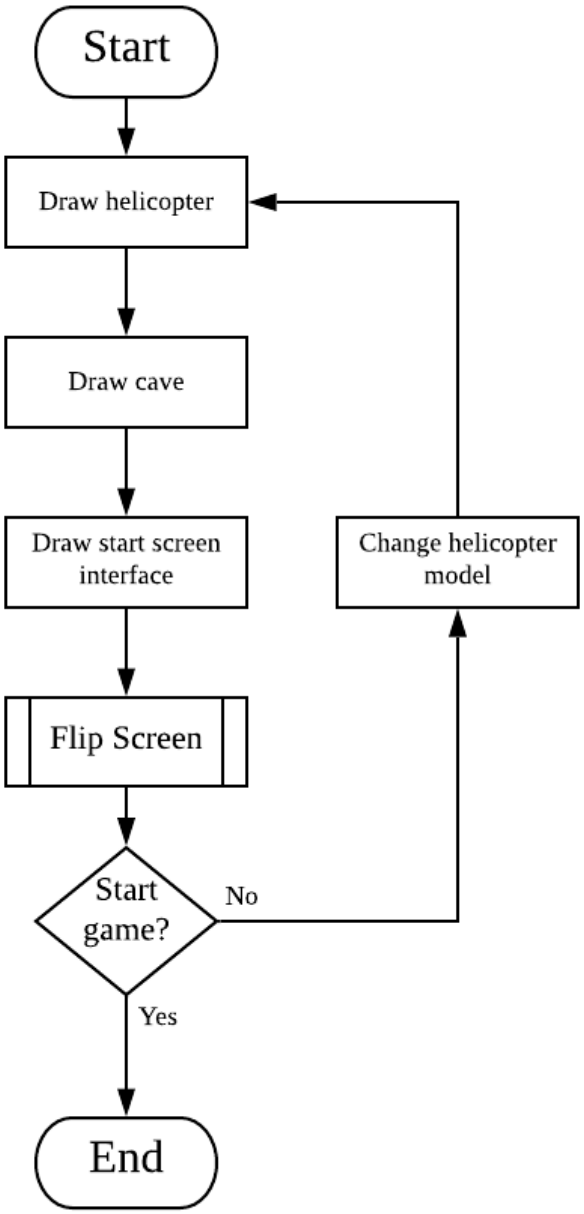
To ensure player fresh experience each play through, the cave have been made to be created randomly every single time. The game will become more and more difficult as the player wander deeper into the cave. The helicopter velocity will become faster, the cave creation gradient (up and downs) will become more aggressive, the cave will become narrow in size as the player travel further.

1. Flowchart

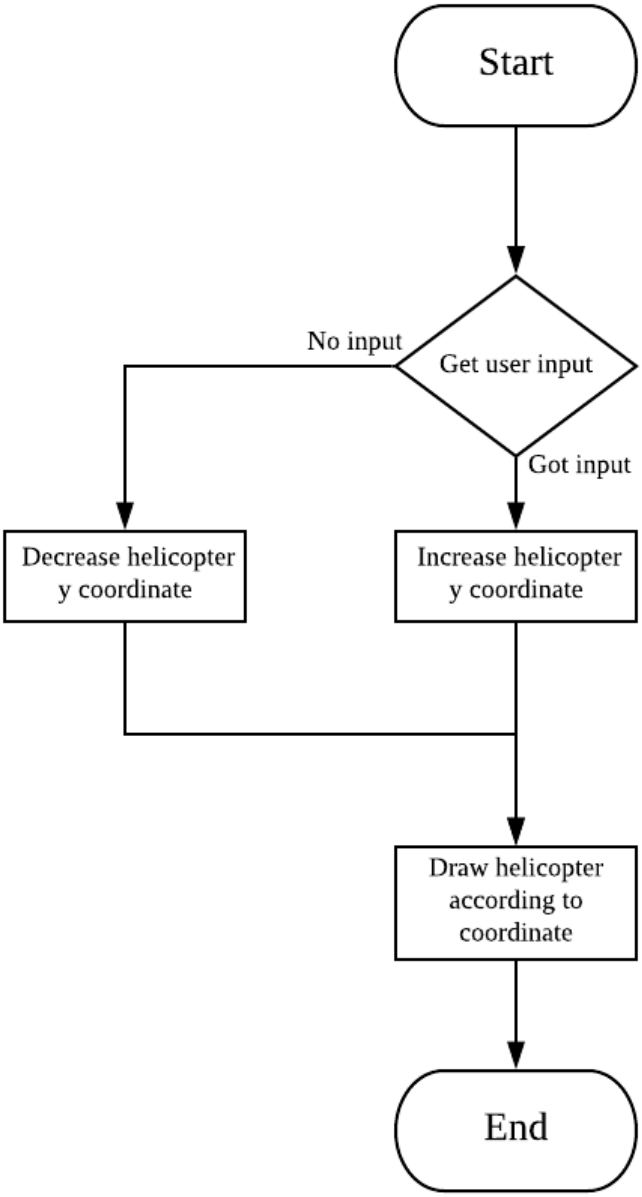
Main module



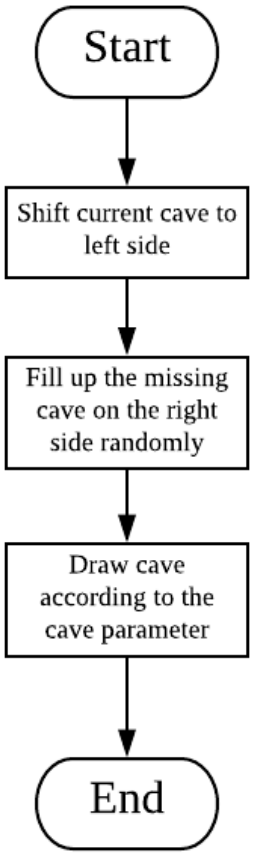
Start screen module



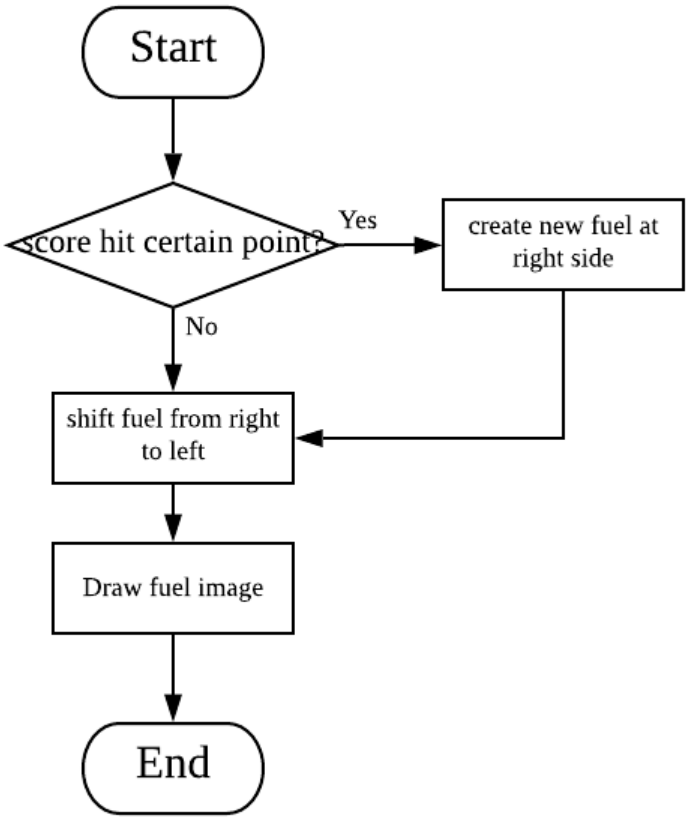
Spawn helicopter module



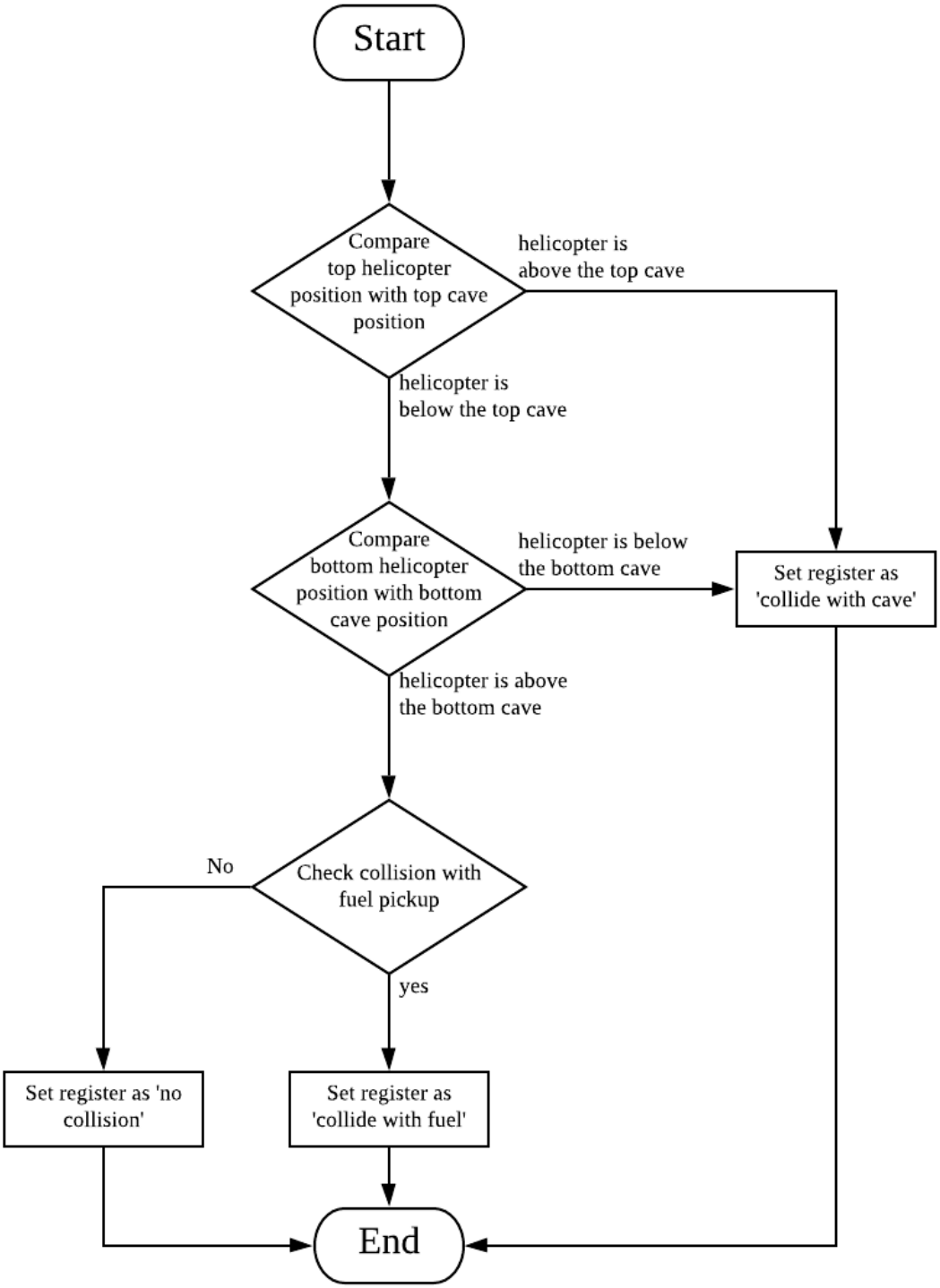
Spawn cave module



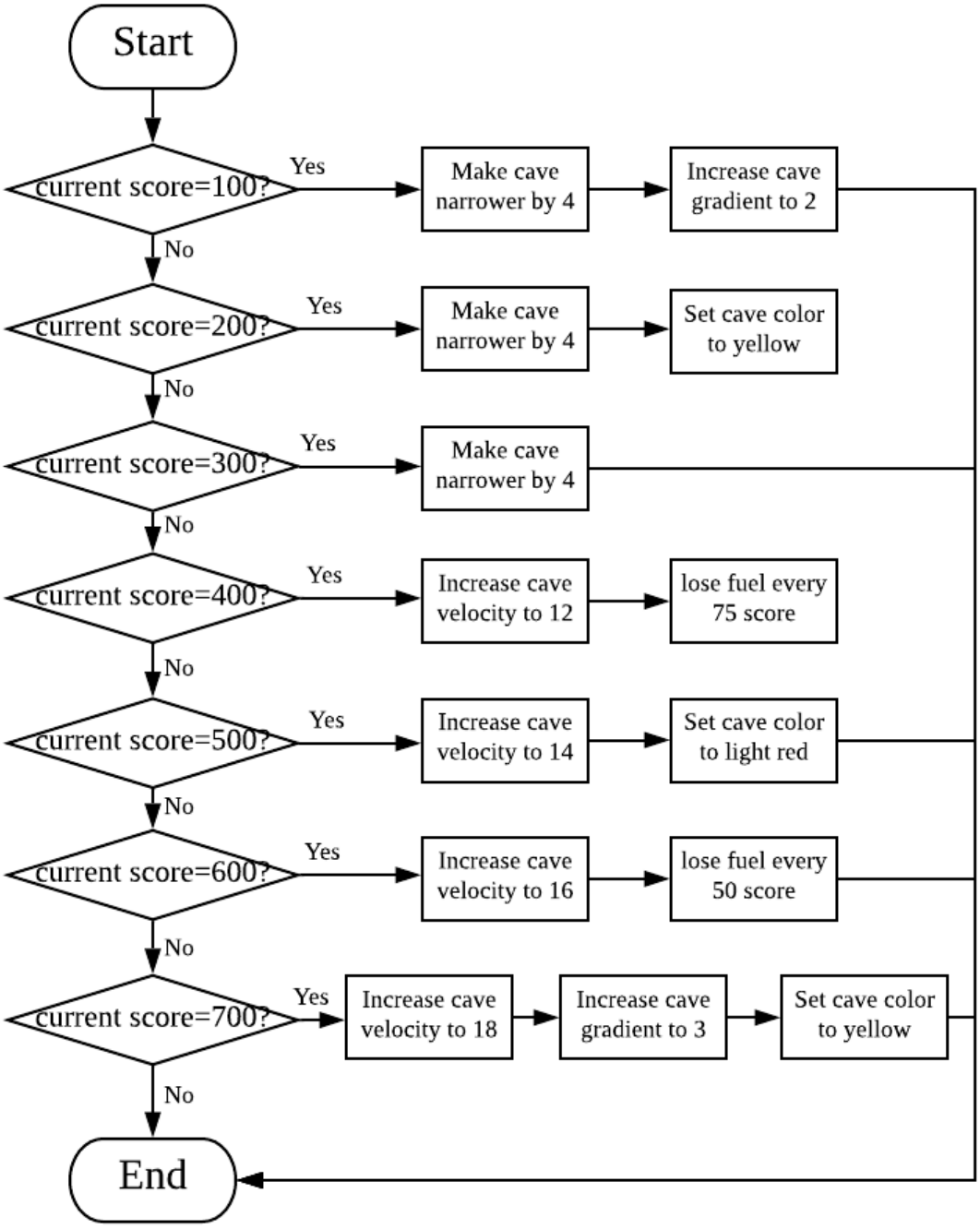
Spawn fuel module



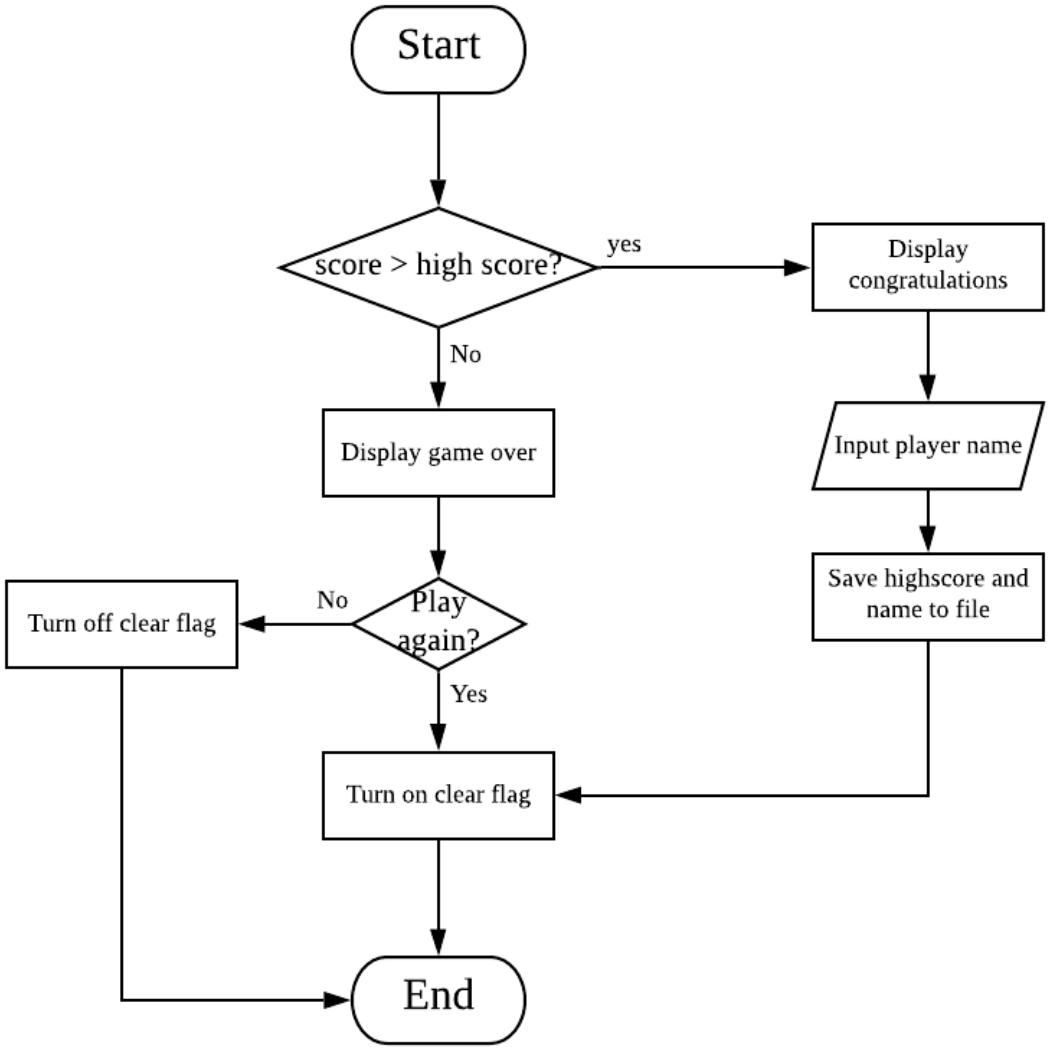
Check collision module



Update difficulty module



Game over screen module



2. User's guide

At start screen:

Press any key to start play the game.

Press 1/2/3 to change helicopter model

During the game:

Press any key to fly up

Release to fall down

3. Highlighted features

Modules include:

Main module

Start screen module

Spawn helicopter module

Spawn cave module

Spawn fuel module

Check collision module

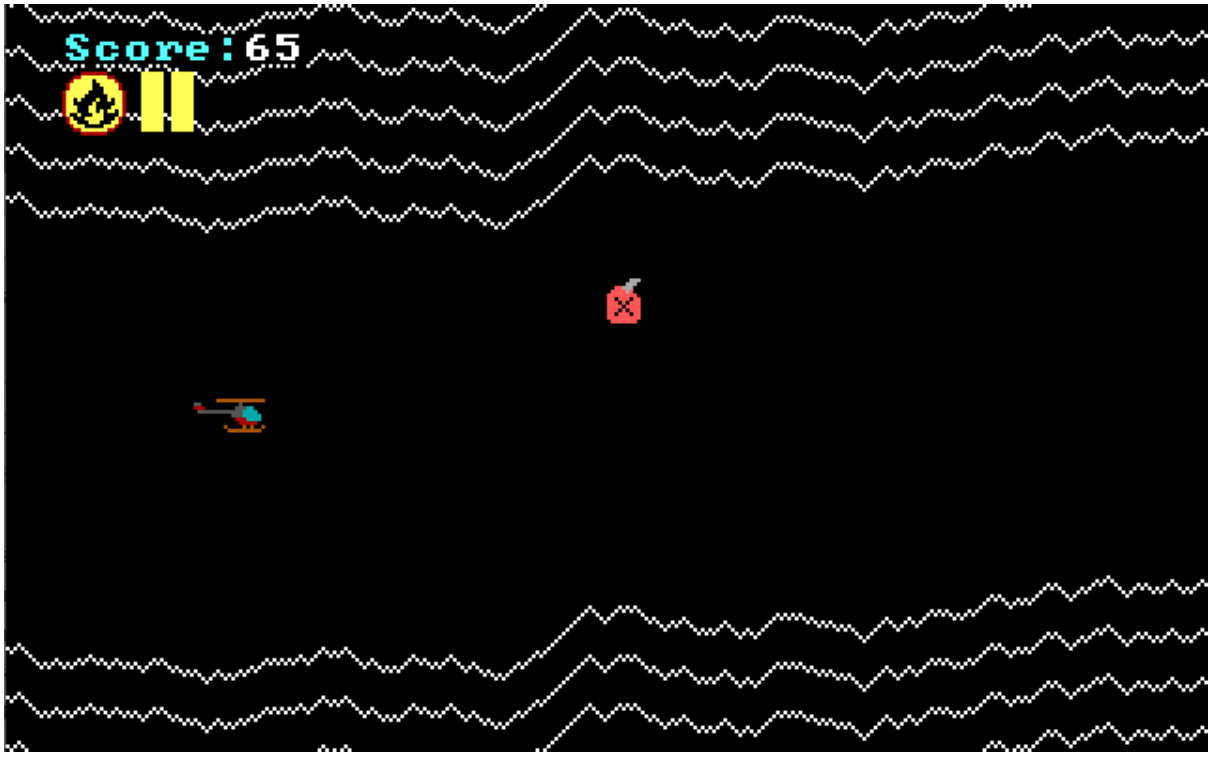
Update difficulty module

Game over screen module

i. Helicopter model choices – Player can choose to change between 3 helicopter model in the menu
ii. Dynamic difficulty – The game become more and more difficulty as the player progress
    - The helicopter velocity increases
    - The cave creation gradient (up and downs) will become more aggressive
    - The cave becomes narrower
    - Helicopter fuel lose faster
iii. High score in file – Player can record his/her high score into the file when he/she beat the previous high score holder
iv. Fuel collect – Player have to collect fuel in order to able fly. Once fuel have run out, the helicopter is not be able to fly and eventually crash.
v. Flip screen (double buffering) techniques – Implemented flip screen techniques (double buffer) to completely eliminate screen tearing and screen flickering, We have also implemented direct video buffer manipulation in clearing the back screen to ensure better performance.

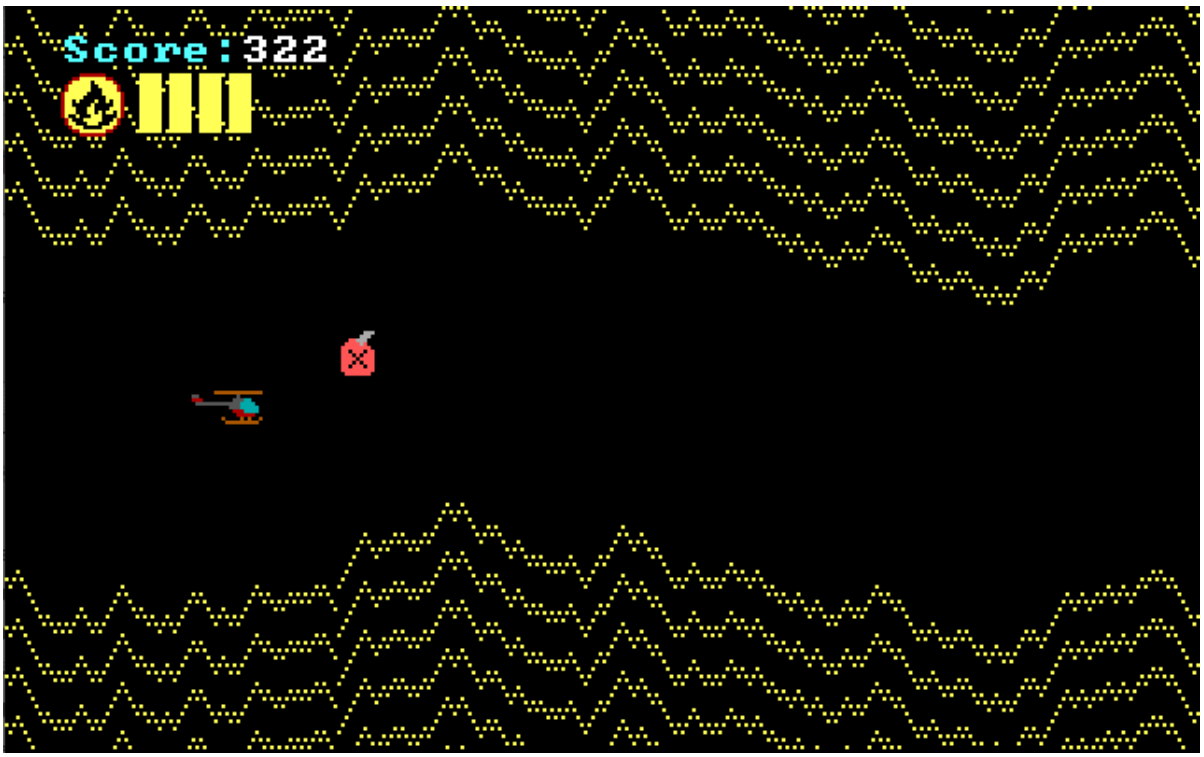
4. Screenshots

Start screen



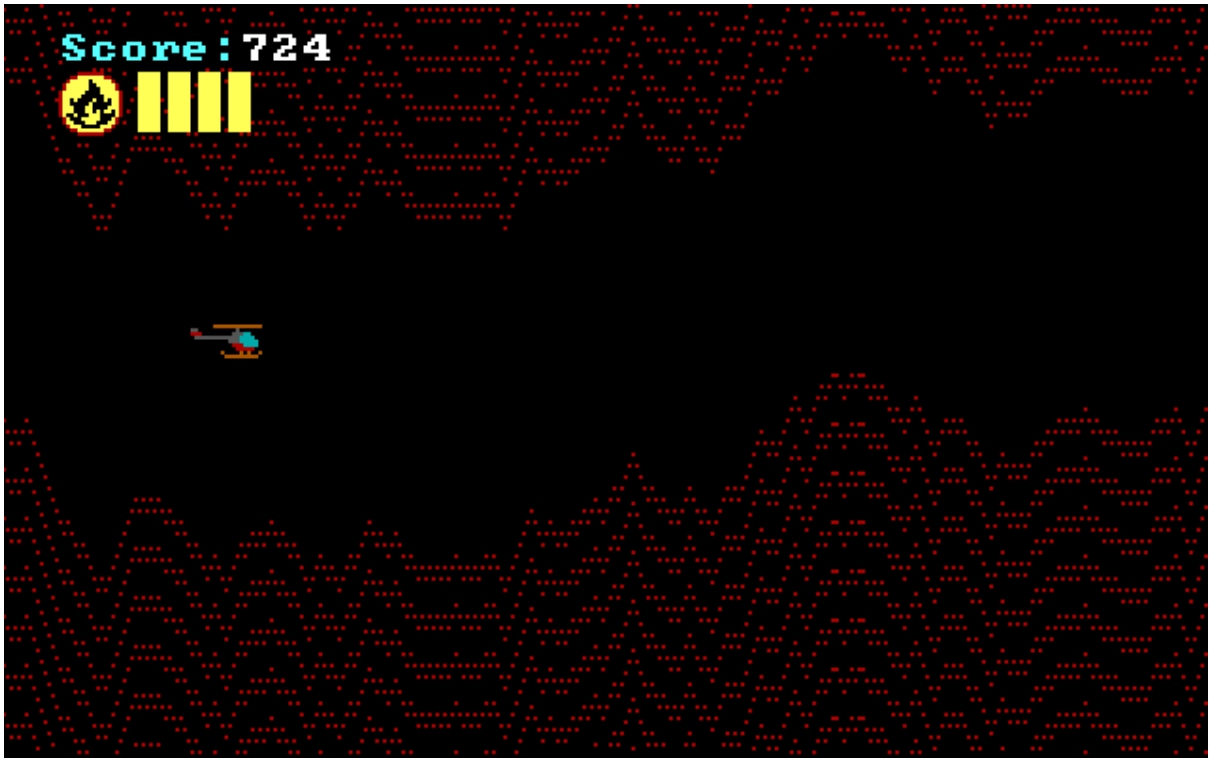
Gameplay

Game over screen



Phase 3 difficulty gameplay

Phase 5 difficulty gameplay



Phase 7 difficulty gameplay

Congratulations screen

Updated high score made by ‘new’