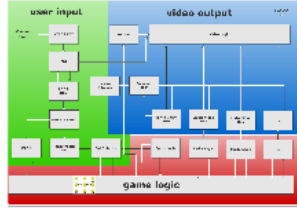
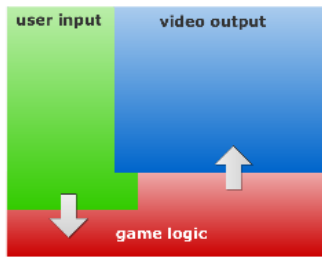
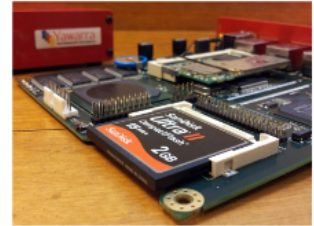




FruitNinja on touch screen = boring
 Augmented reality is next big thing.
 Can we do it on an FPGA?



Challenges



Wins

- Start screen
- Give it a UI with score
- Obey conservation of momentum
- Add music
- Cheat mode
- Game over screen
- "Banish"

Schedule



Augmented Reality Fruit Ninja

6.111 Final Project

Nathan Monroe

Isaac Evans

Drew Dennison

overview

What in the world is Fruit Ninja?



our implementation is “augmented reality”

an immersive user experience:
advanced graphics, sound, physics

What in the world is Fruit Ninja?



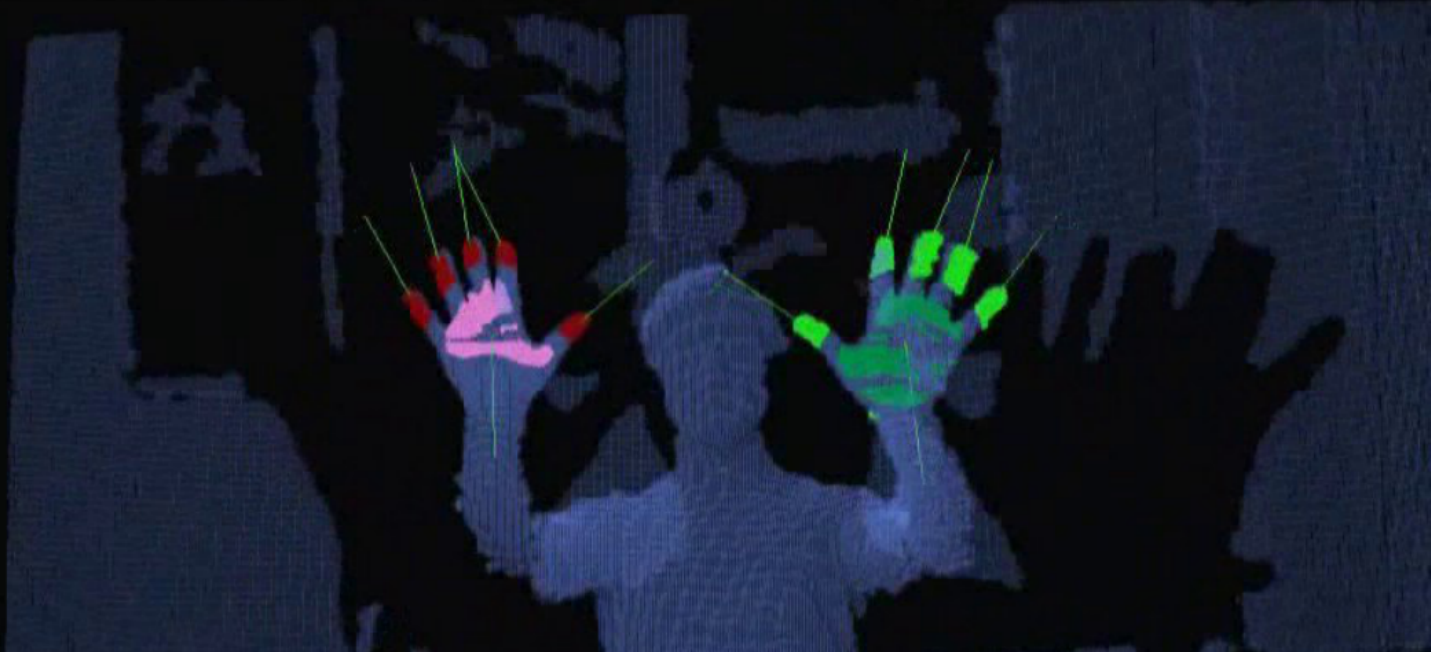
our implementation is “augmented reality”

an immersive user experience:
advanced graphics, sound, physics



motivation

NUI + Kinect = cool



FruitNinja on touch screen = boring
Augmented reality is next big thing.
Can we do it on an FPGA?

user input

video output



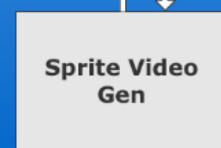
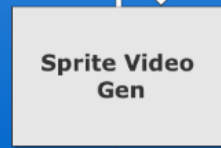
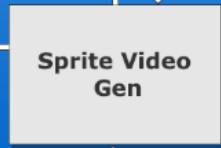
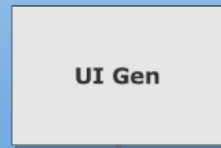
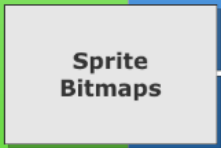
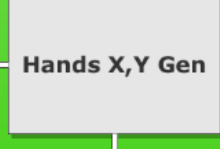
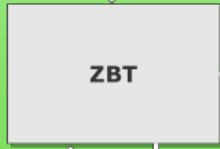
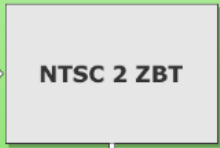
game logic

user input

video output

VGA Out

Camera Input



PRNG

Hands Vector Gen

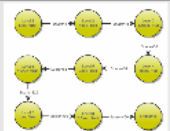
Cut Detector

Sprite Logic

Sprite Logic

Sprite Logic

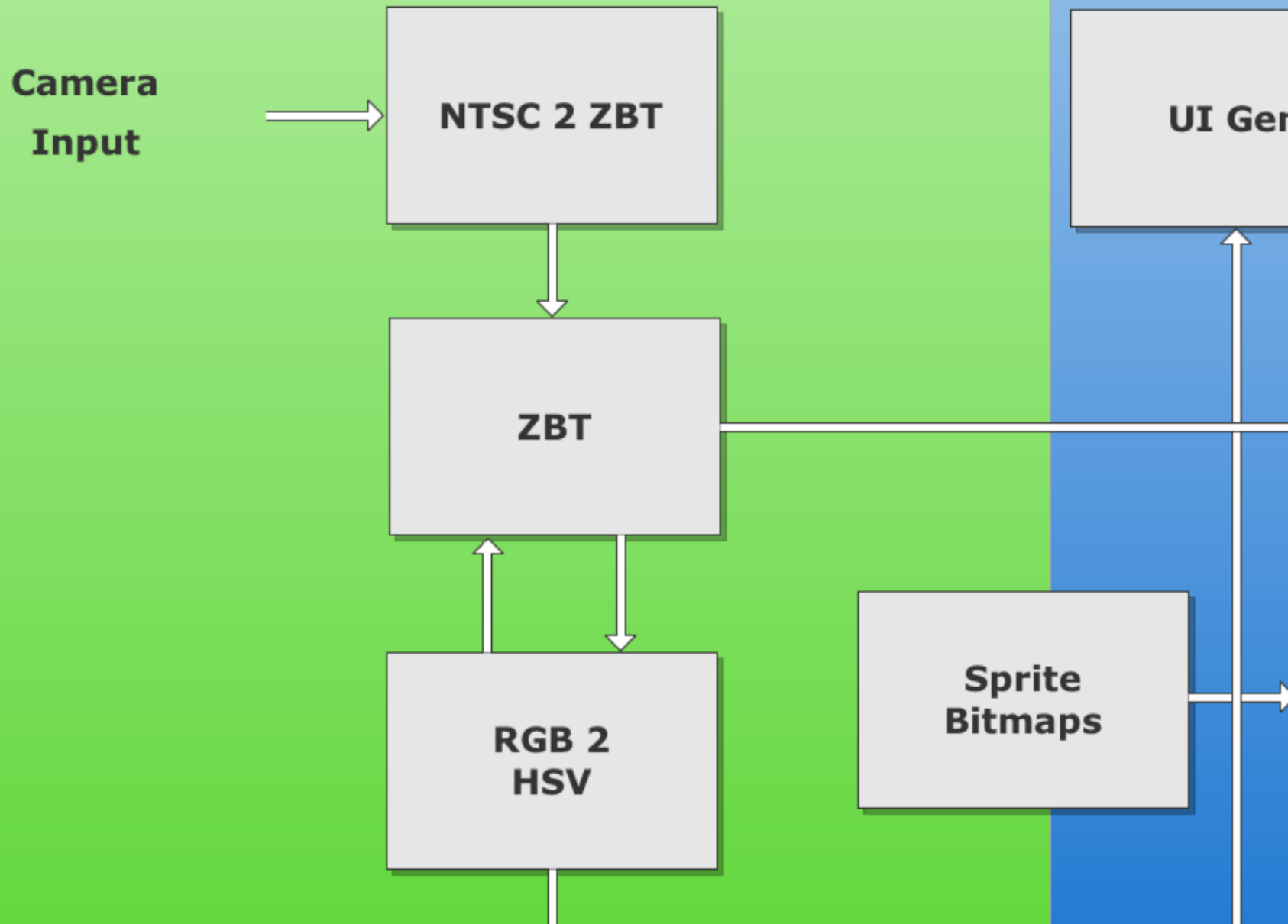
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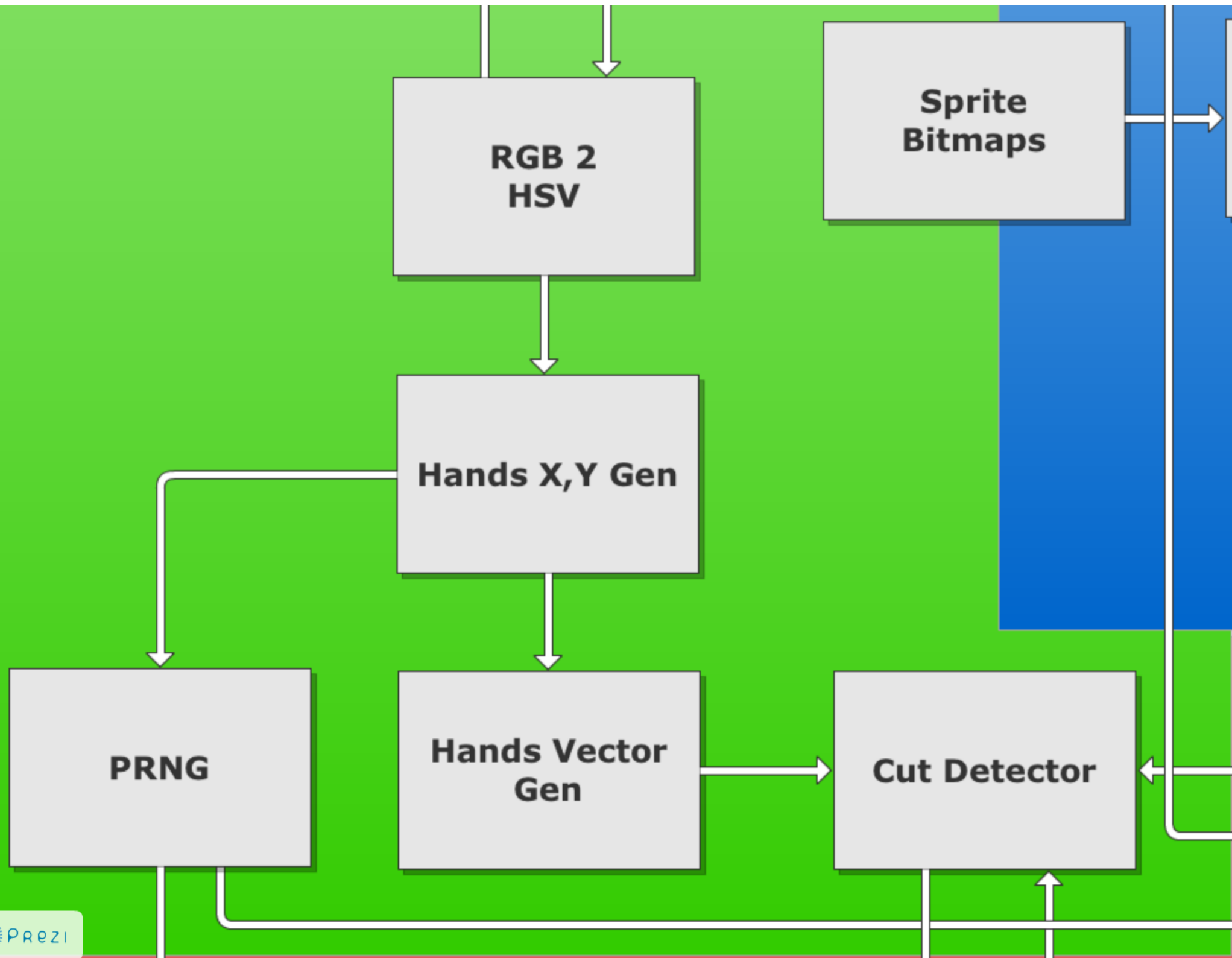


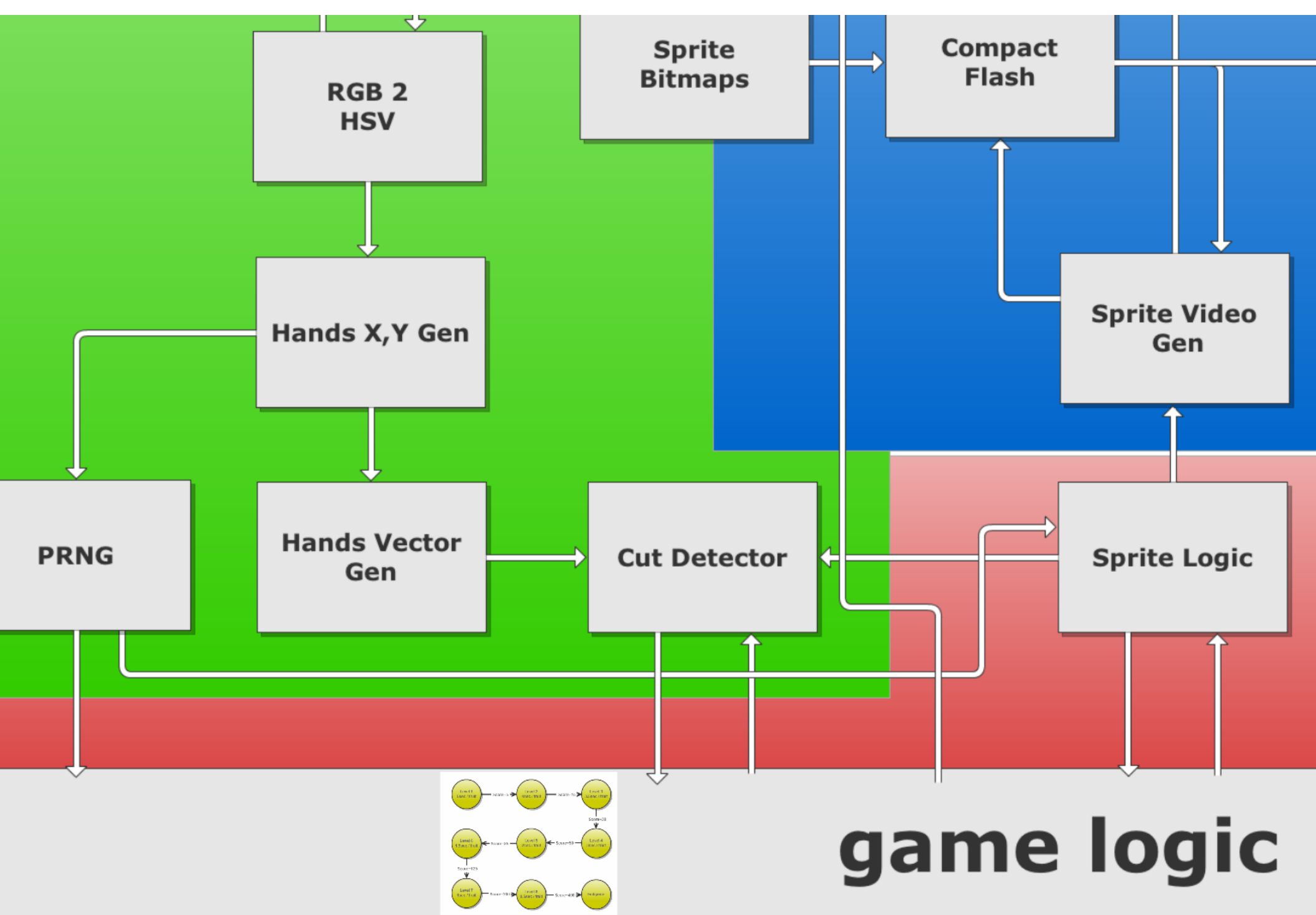
game logic



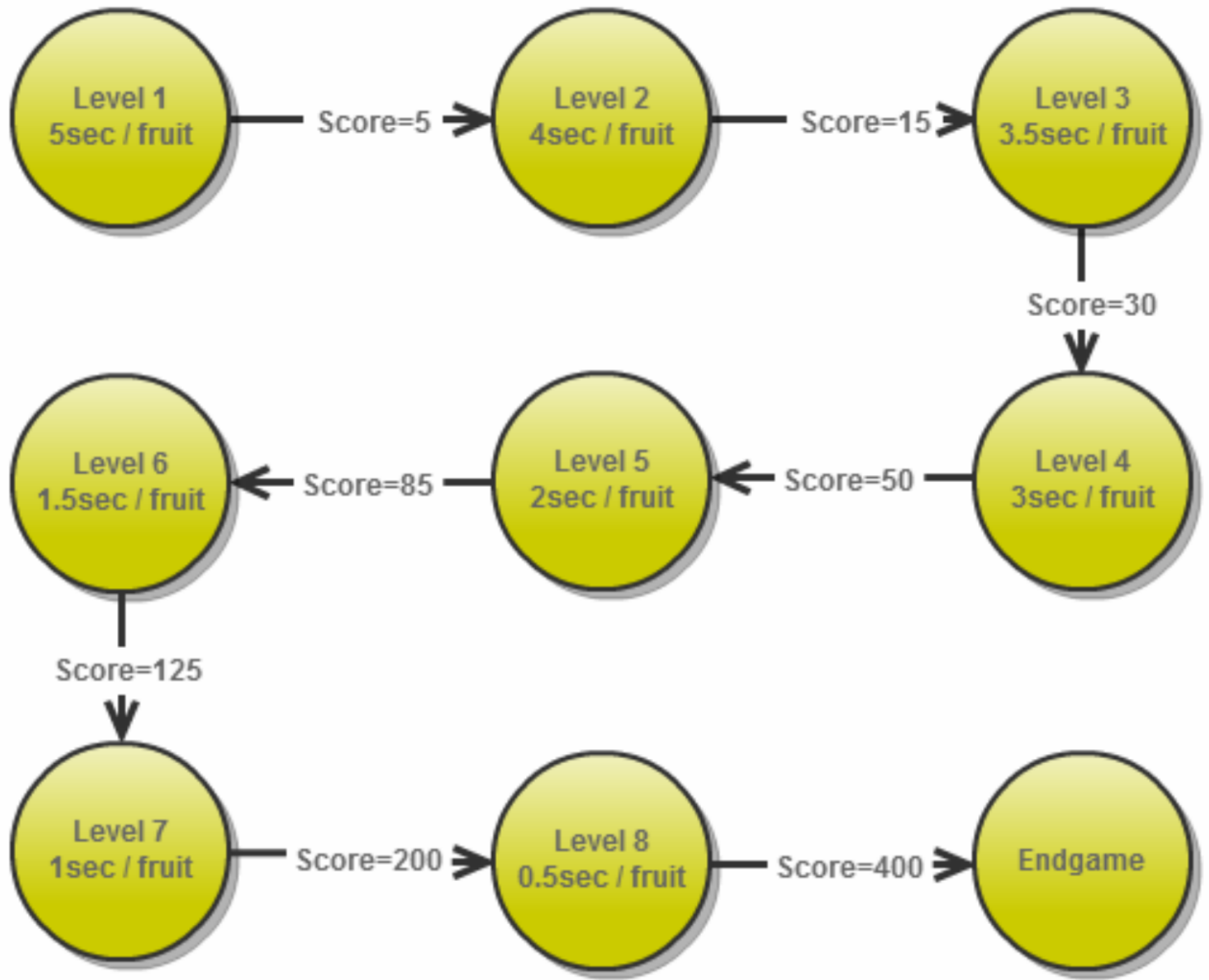
user input

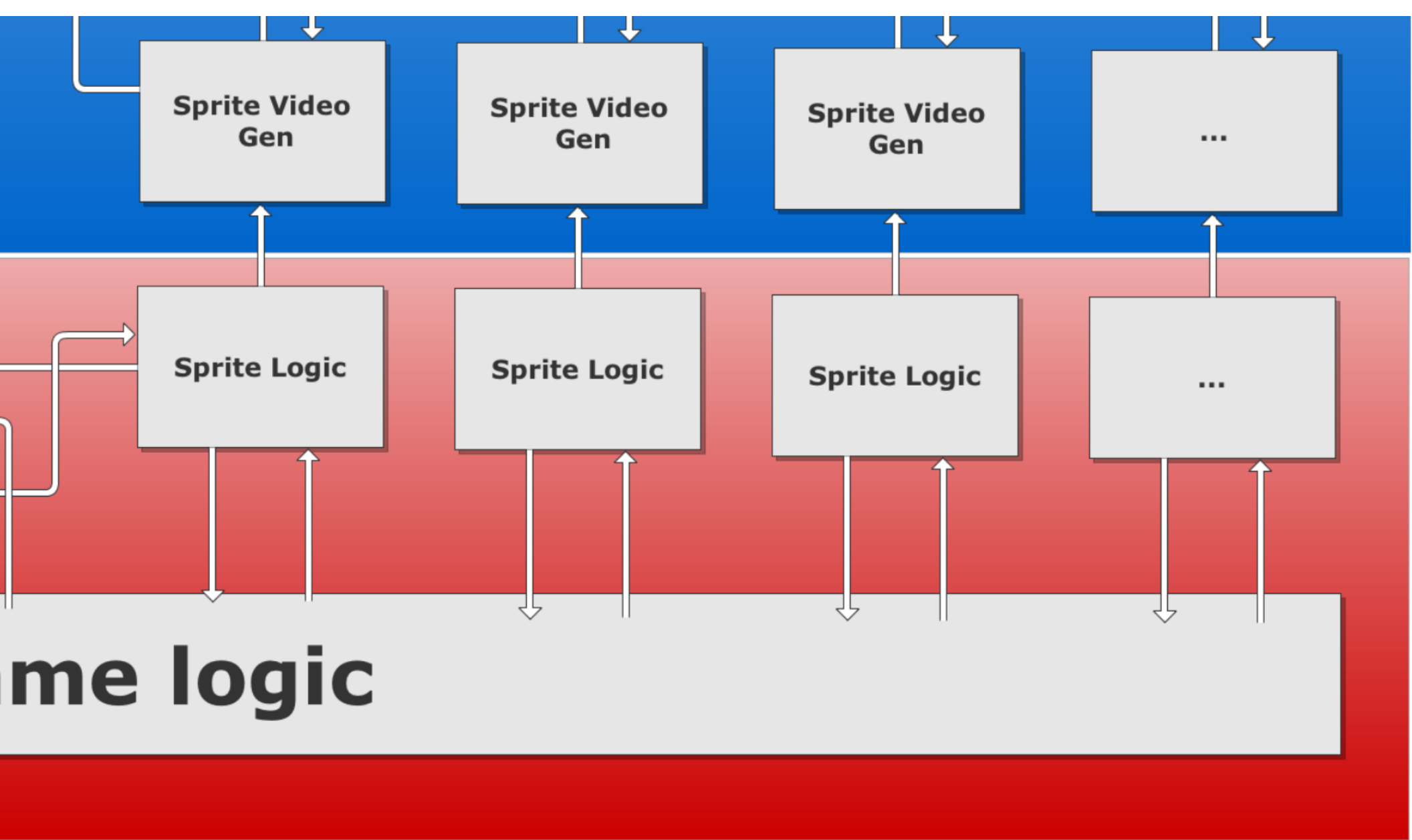




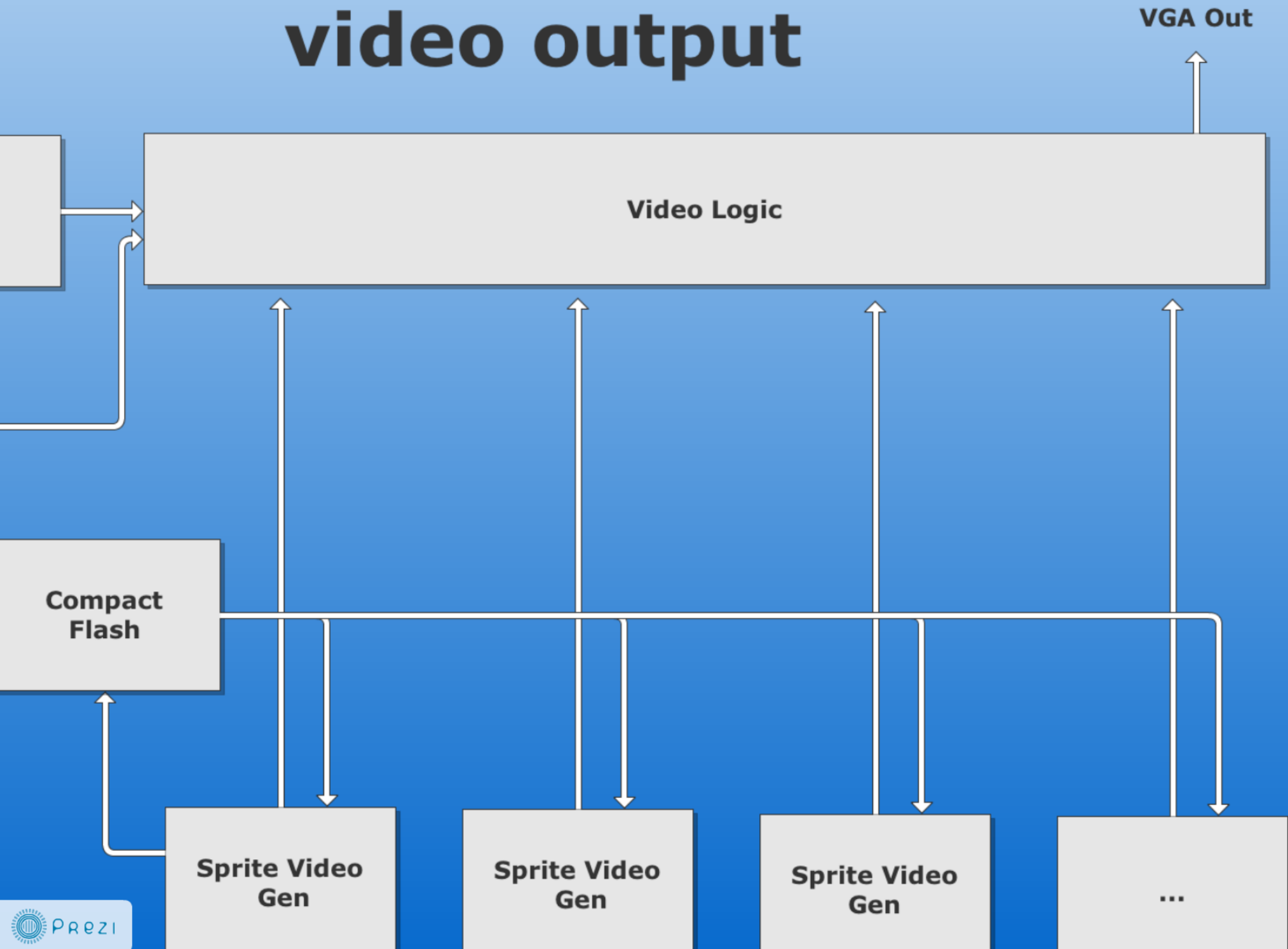


game logic





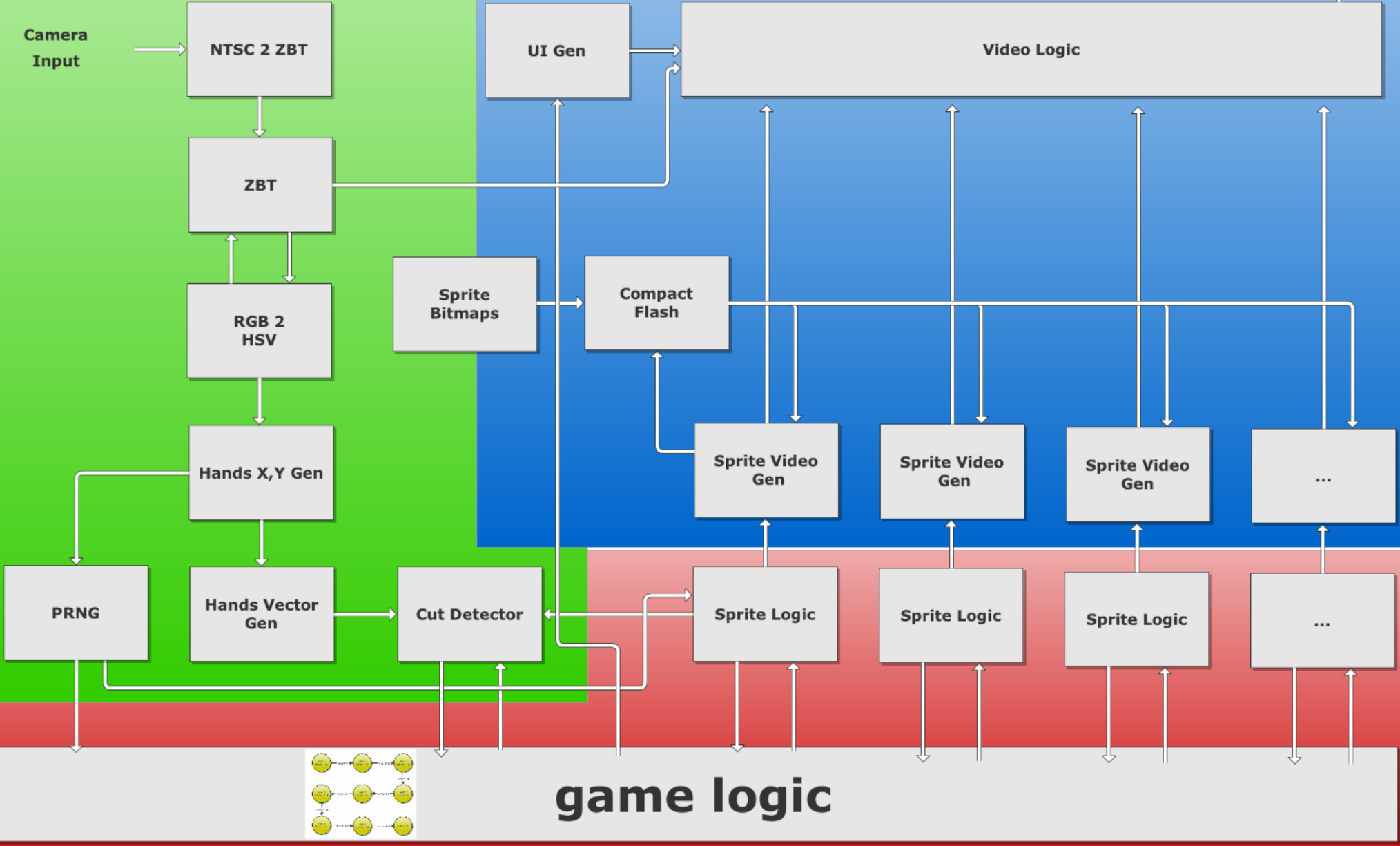
video output



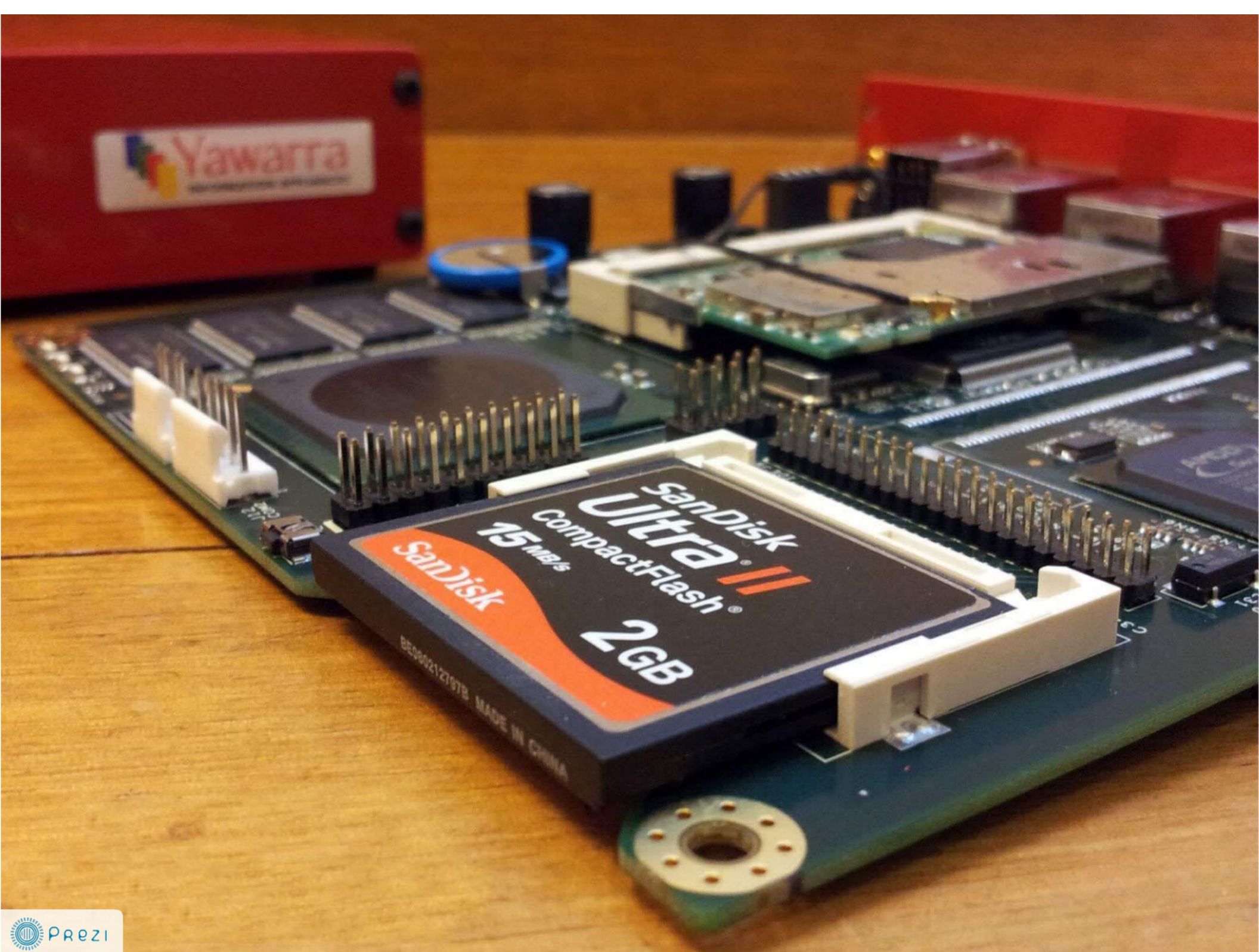
user input

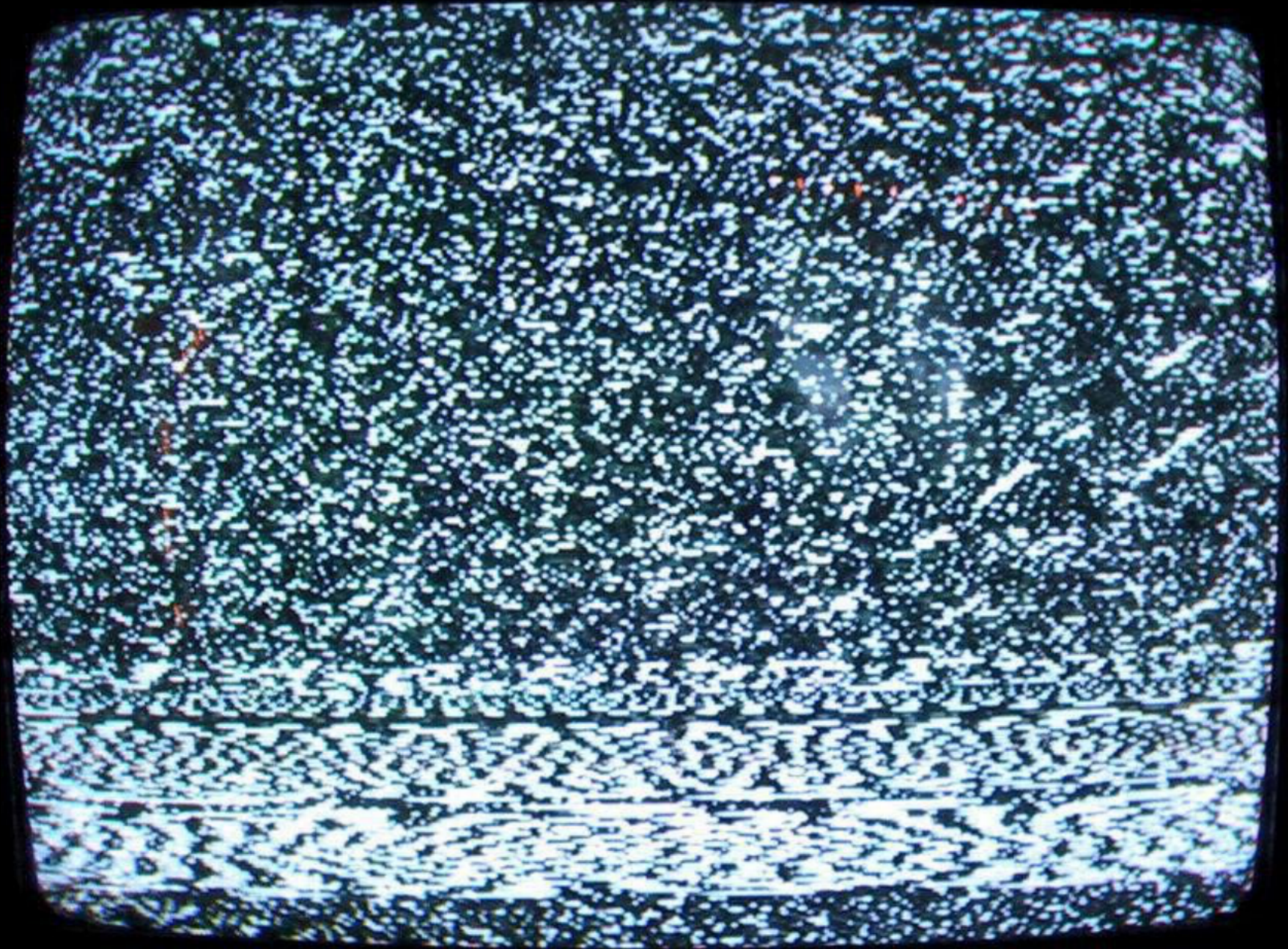
video output

VGA Out



Challenges







Wins

Start screen

Give it a UI with score

Obey conservation of momentum

Add music

Cheat mode

'Game over' screen

"Bombs"

Schedule

Implement game logic blocks

Week of Nov. 12th

Implement user input blocks

Implement video output blocks

Week of Nov. 19th

Combine blocks into system

Week of Nov. 26th

Write final report
Work on final presentation

Week of Dec. 3rd

Final Presentation!

Week of Dec. 10th



Example of FPGA

Intuitive gaming is more fun!

A NUI is more immersive

Gaming without a controller requires less hardware

Augmented Reality Fruit Ninja

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