

UNITY PLATFORM

DEMONSTRATION: GAME LOOP, TOOLS, PROJECT

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GAME LOOP

WHAT IS LOOPING?

- “Keep the Game Running” → Interactivity
- Execution Blocks
 1. Input Processing
 2. Game Update
 3. Render
- Soft Real-Time System
- Frames & Deadline

```
West of House                               Score: 0           Moves: 0

ZORK I: The Great Underground Empire
Copyright (c) 1981, 1982, 1983 Infocom, Inc. All rights reserved.
ZORK is a registered trademark of Infocom, Inc.
Revision 88 / Serial number 840726

West of House
You are standing in an open field west of a white house, with a boarded front
door.
There is a small mailbox here.

>_
```

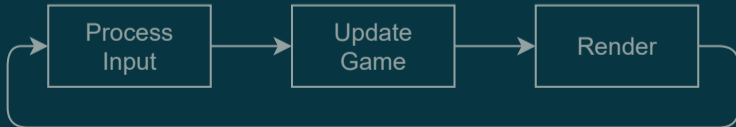
Source: Zork



Source: Robert Nystrom – Game Programming Patterns [1]

SIMPLE GAME LOOP

```
while (!quit) {  
    processInput();  
    updateGame();  
    render();  
}
```



DELAYED GAME LOOP

```
while (!quit) {  
    var start = getTime();  
  
    processInput();  
    updateGame();  
    render();  
  
    sleep(FRAME_MS - (getTime() - start));  
}
```



TIMED GAME LOOP

```
var previous = getTime();
var lag = 0.0;
while (!quit) {
    lag += getTime() - previous;
    previous = getTime();

    processInput();
    while (lag >= FRAME_MS)
    { updateGame(); lag -= FRAME_MS}
    render();
}
```



PROPER GAME LOOP

Unity

UNITY ENGINE

TOOLS OF THE TRADE

- Unity
- GitHub for Unity
- JetBrains Rider
- Optionally:
 - ▶ Blender
 - ▶ GIMP
 - ▶ Inkscape
 - ▶ Krita



DEMONSTRATION

ADDITIONAL RESOURCES

- [Manual] Unity User Manual
- [Manual] Unity Learn

Thanks For
Your Attention!

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SPREAD

CONCSN
MISSILE

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Descent

REFERENCES I

- [1] R. NYSTROM. ***GAME PROGRAMMING PATTERNS***. UK: Genever Benning, 2014. ISBN: 0990582906.