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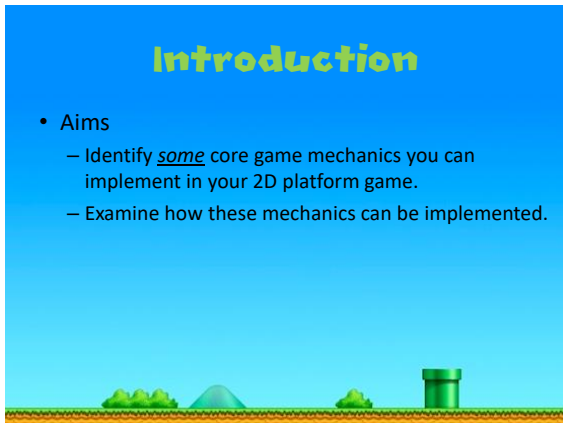
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- Aims
  - Identify some core game mechanics you can implement in your 2D platform game.
  - Examine how these mechanics can be implemented.

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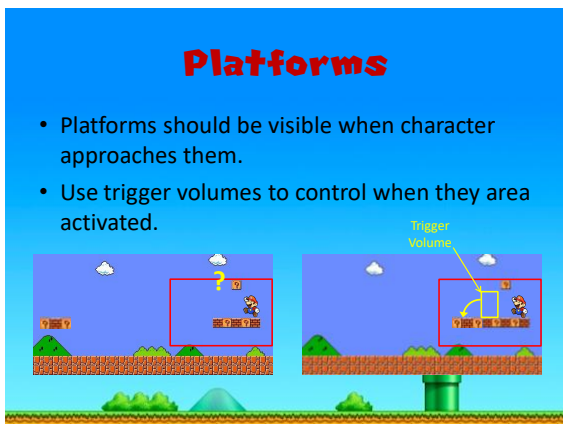
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- Platforms should be visible when character approaches them.
- Use trigger volumes to control when they are activated.

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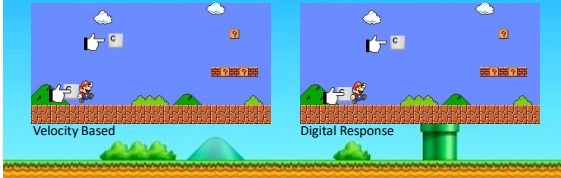
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## Jumping

- Double jump or not?
- What happens when player releases jump key ?
  - Continue the jump path, or stop and immediately fall vertically?




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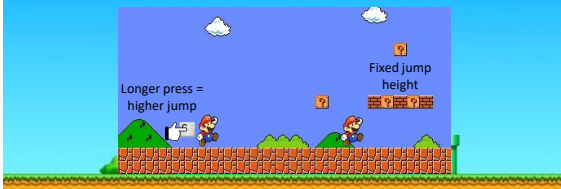
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## Jump Height

- How does game control jump height ?
  - Jump height related to length of key press.
  - Fixed jump height.




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## Other Jump Mechanics

- Edge assistance



- Late jump




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## Movement in the Air

- Should player be able to move left\right, shoot & use items while jumping?
  - Level design depends on such a decision.
  - Try [Super Ghouls and Ghosts](#).




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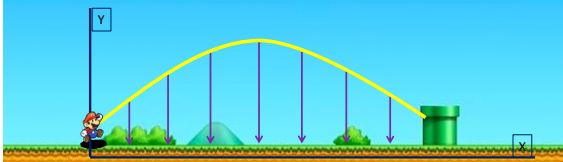
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## Jump Shadow

- Helps player judge landing point.
  - Move the shadow using the horizontal (x axis) displacement of character from point of jump.




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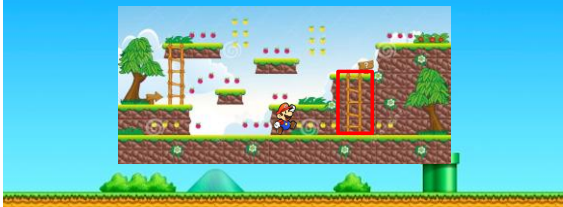
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## Ladders

- Climb area larger than ladder?
- Can character attach to ladder while jumping?
- Can character shoot and use items on ladder?




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## Wall Climbing

- In most cases, use same base code as for ladders.
  - Wall climb
    - Lock X axis, but allow movement on Y axis.
  - Wall hang
    - Prevent movement on X and Y axis.




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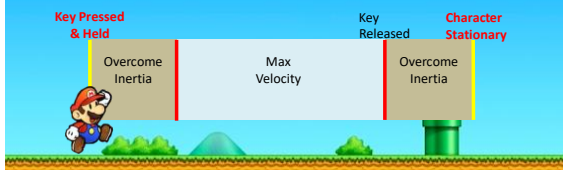
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## Inertia

- How difficult it is to change the characters movement.
  - This applies to starting the character moving AND stopping it moving.




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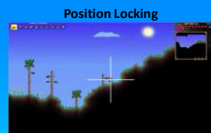
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## Camera



Terraria 2011



Jump Bug 1981



Shinobi 1987



Scramble 1981

Keren (2015) Scroll Back: The Theory and Practice of Cameras in Side-Scrollers. Gamasutra <https://goo.gl/UCEYr1>

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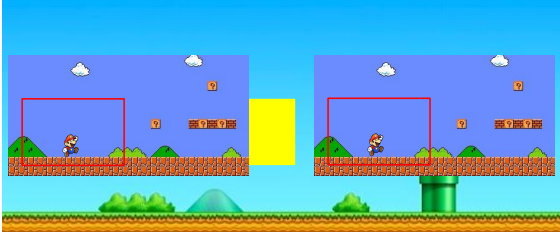
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## Camera – Edge Snapping

- Camera should stop moving when the edge of the field of view reaches the edge of the level.




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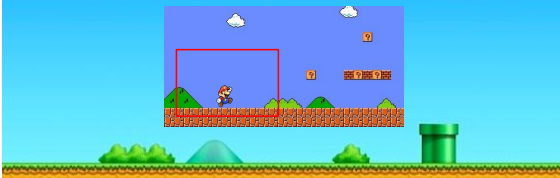
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## Camera – Forward View

- Camera moves ahead of player character
- When character stops, camera moves back to centre the view on the character.




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## Summary

- Choice of platform mechanics influences level design.
- Apparently simple mechanics can be complex to code.
  - Do not assume 2D game mechanics will be 'easy' to implement.




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