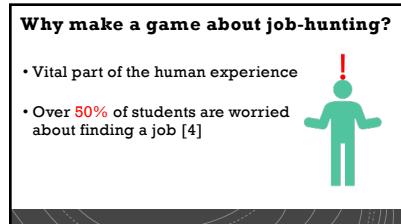




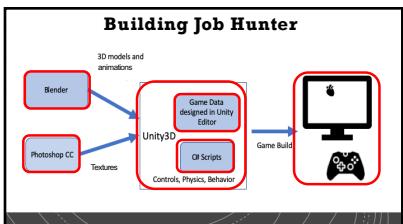
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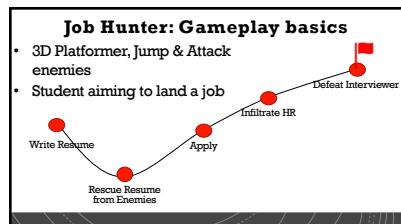
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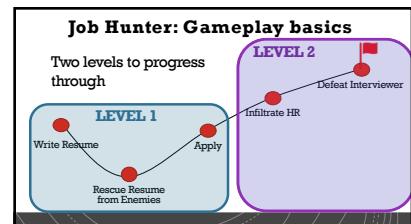
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4



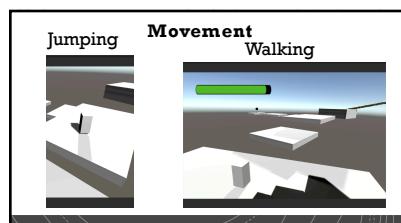
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6



7



8



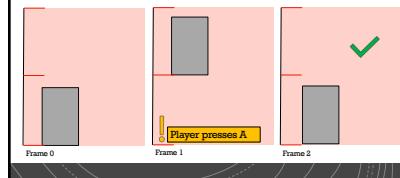
9

**Jumping: A Basic Approach**

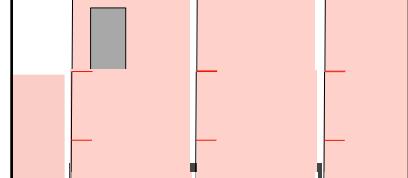
```
If player presses A
    Raise Character by 1 Unit

Else
    Put Character back on the Ground
```

10

**Jumping: A Basic Approach**

11

**Jumping: What if the player does this?**

12

**Jumping: An Improvement**

```
If player presses A and is On Ground
    Raise Character by 1 Unit

Else
    Put Character back on the Ground
```

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**Jumping: A Fundamental Problem**

- Frame by Frame
- 30 Frames Per Second (fps)
- Airtime is 0.33 seconds



14

**Jumping: A Rethinking**

- Apply jump movement as a Velocity
- Reducing velocity each frame by applying gravity

15

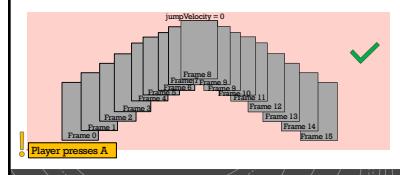
**Jumping: An Improvement**

```
If player presses A and is On Ground
    jumpVelocity is JUMP_SPEED

Else
    jumpVelocity -= gravityVelocity
```

where gravityVelocity = GRAVITY \* time.deltaTime

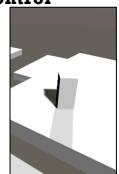
16

**Jumping: An Improvement**

17

**Jumping: More Control**

- Will always jump the same height
- What if we want the player to be able to jump different heights?
- Idea: Let players exit the jump early



18

**Jumping: More Control**

```
If player presses A and is On Ground
    jumpVelocity is JUMP_SPEED
Else if player releases A
    jumpVelocity = 0
Else
    jumpVelocity -= gravityVelocity
```

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**Jumping: A New Issue**

20

**Jumping: A New Issue**

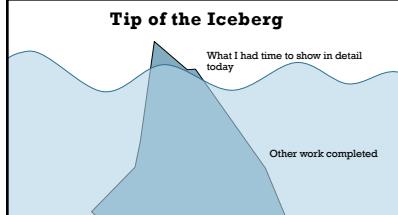
```
If player presses A and is On Ground
    jumpVelocity is JUMP_SPEED
Else if player releases A and jumpVelocity > 0
    jumpVelocity = 0
Else
    jumpVelocity -= gravityVelocity
```

21

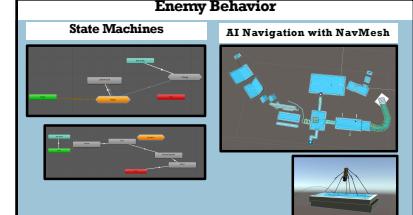
**Jumping**

- ✓ Smooth jumping
- ✓ Player controls height of jump
- ✓ Player can only begin jump on ground

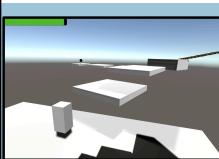
22

**Tip of the Iceberg**

23

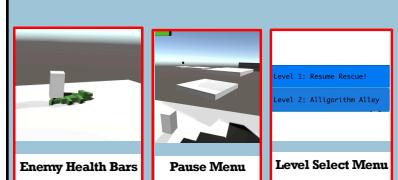
**Enemy Behavior**

24

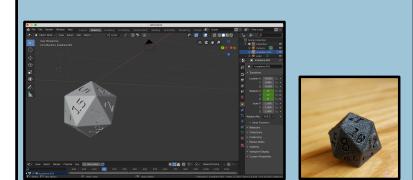
**Designed & Programmed Level 1**

- Collectables
- Picking up and placing items
- Triggers that change the environment
- Take and do damage

25

**User Interface**

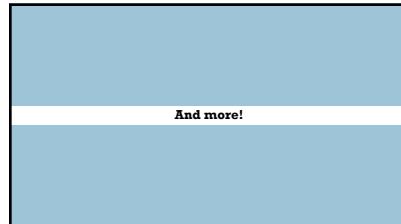
26

**Learned 3D Modeling in Blender**

27



28



29

<b>Summary</b>	
<b>COMPLETE</b>	<b>TO-DO</b>
✓ Controls / Movement	<input type="checkbox"/> More UI
✓ Basic UI	<input type="checkbox"/> Save / Load
✓ Level Select	<input type="checkbox"/> Usability improvements
✓ Pause Menu	<input type="checkbox"/> More assets & HD
✓ Inventory RUD	<input type="checkbox"/> Level 2
✓ Level 1	<input type="checkbox"/> Enemies
✓ Enemies	<input type="checkbox"/> HB Guards
✓ Eraspider	<input type="checkbox"/> Final Boss
✓ Alligator	<input type="checkbox"/> Create assets in Blender & Photoshop
✓ Started Blender	<input type="checkbox"/> More user testing
✓ First user testing	

30



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