COMP2160 Game Development Task 2:

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A list of which features We have attempted

Physics-based player movement	Attempted
Jumping	Yes
Trampolines	Yes
Checkpoints	Yes
Lasers	Yes
Switches	Yes
Moving platforms – vertical	Yes
Moving platforms – horizontal (hard)	Yes
Camera control	Yes
Scene management	Yes
Analytics	Yes

Task02 – Entity Relationship Diagrams

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Follow player's position

Read player's transform position

On collision to respawn

Read player's transform

Player

Player Movement
Responsible for handling player movement and collisions
State:
- Rigidbody
- Moving speed and Rotation
- Jump Hight

Start:
- Assign rigidbody

Updates:
- Current position, jump and movement based on input

FixedUpdate:
- Player physics:: MovePosition
- AddForce jump in desired Hight when the player is grounded
- Rotate to face the input direction

Methods:
- Get rigidbody component
- Check the player is grounded:
    - Basic jump
- Check the player if on trampoline
    - Trampoline jump

Player Checkpoint
Responsible for handling players entering trigger volume
Params:
- Read only Player transform position

States:
- Player transform position
- List of checkpoints
- Death distance after falling off the platforms
- Analytic log

Methods:
- Get a player's current position

Start:
- Find player object

Updates:
- Set player respawn position

Event:
- On player entering collision:
    - Respawn player to position
- On player entering trigger:
    - Tell GameManager death Analytics

Switch
Params:
- Switch on and off material (color

State
- Laser target
- Renderer

Start:
- Renderer material color for switches on

Update:
- Renderer material color for switches off

Methods:
- Get renderer component

Events:
- On collision with the player :
    - Switch on
    - If not, switch off

On collision on &off

Singleton

UI Manager
Responsible for displaying score & lives UI and game-over panel. Set screen size: 16:9 Aspect
Params:
- Start panel
- Next panel
- Game over panel

State:
- Active panel

Methods:
- Complete level scene
- Load next-level scene

Awake:
- Destroy self UI manager if there is already another UI Manager. If not,
- Don't destroy on load

Start:
- Active scene
- Show start panel

Camera
Params:
- Distance from player
- Mouse sensitivity
- Rotation smooth Time
- Pitch min and max

State:
- Player target position
- Offset position
- Camera current position and rotation
- Follow the player's position and rotation (yaw and pitch)

Start:
- Find the player's transform position

LateUpdate:
- Lerp through the camera to follow the player's position and behind the player

Methods:
- Get the player's potion

Checkpoint
Responsible handling players entering trigger volume data
Params:
- Read only checkpoint transform position

States:
- Checkpoint transform position
- Analytic log

Methods:
- Get Checkpoint's current status

Event:
- On player entering trigger:
    - Tell GameManager checkpoint Analytics

On collision to record teleporter

On Collision to move

On collision to record death

GameManager
Store Analytics
- Death analytic
- Checkpoint analytics
- Teleporter & scene analytics

Moving Platform V
State
- Speed
- Waypoints
- Target
- Distance between waypoints
- Rigger check

Start:
- Trigger check set false

Update:
- Platform starting position if Trigger check (true)

Methods:
- On player entering trigger:
    - Move V-platform

Moving Platform H
State
- Speed
- Waypoints
- Target
- Distance between waypoints
- Rigger check

Update:
- Move H-platform

Raycast hit

Laser
Params:
- Checkpoint

State
- Laser color
- Rotation
- Length
- Linerenderer

Start:
- Get LineRenderer and set color

Update:
- RaycastHit with the player
    - Coroutine respawn at checkpoint

Methods:
- Get renderer component
- WaitForSeconds respawn

Teleporter
Params:
- Read only checkpoint transform position

States:
- Checkpoint transform position
- Analytic log

Event:
- On player entering trigger:
    - Tell GameManager teleporter Analytics
    - Start next scene

On collision to record checkpoint