Core Features of Unity

https://github.com/matthewvroman/UnityMastersClass_Nov17

Things to Talk About

- Prefabs
- Physics
- Animation
- Scripting
- Input Handling
- UI
- Audio

Prefabs

Prefabs

- Highly re-usable assets
- Instances can override main prefab
- Main prefab changes propagate to all
- Prefabs can not be nested
- Use for assets that require multiple instances
- Use for instantiating objects in code

Resources

- Prefabs that live inside Resources/
- Instantiate via path reference
- More control over memory management

Physics

Physics

- Nvidia PhysX Engine
- 2D & 3D Support
- Rigidbodies
- Physics Materials
- Monobehaviour Methods for with Physics

Animation

Animation Timeline

- Use for small animations
- Repeatable or one-shot
- Dispatch events to code

Animator

- State machine for animation transitions
- Parameters should drive state changes
- Modify parameters in code

Scripting

MonoBehaviours

- Base class of all Unity components
- Contain useful methods you can hook into
- Awake / Start / OnEnable / OnDisable / Update / FixedUpdate

Serialization

- Useful for writing generic re-usable scripts
- Public variables are serialized by default
- Use [SerializeField] to serialize private variables

Actions

- Communicate with other scripts
- Avoid SendMessage
- Allows for more modular code design

Input Handling

Keyboard Input

- Project Settings -> Input
- Input.GetAxis vs. Input.GetAxisRaw
- Input.GetButton
- Don’t use key codes!

Mouse Input

- Input.mousePosition
- Mouse position is in Screen Space
- Convert to World Space to use

Unity UI

Prepping UI

- Create modular pieces
- 9-slice large elements
- Talk to your programmers
- Create samples

UI Import Settings

- Mark as Sprite (2D and UI)
- Disable compression
- Disable mipmapping
- Pack your sprites!

Scaling UI

- Canvas scale mode is important
- Anchors
- Stretching
- Pivot Points
- Slice Sprites
- Aspect Ratio Fitter

Text Considerations

- Don’t bake your text
- Overly stylized text such as logos can be images
- Unity supports .ttf files
- Unity supports outline & shadow effects

Buttons

- Using OnClick in code
- Using OnClick in editor
- Adding animations

Audio System

Audio System

- Audio Source plays audio
- Audio Group receives audio
- Audio Mixer transforms group
- Audio Listener transforms mixer based on distance
- Final output is delivered to your speakers

Audio Source

- Can be 2D or 3D
- Plays an Audio Clip
- Can be assigned to an Audio Group

Audio Group

- Funnel into Mixers
- Can have effects applied to them
- Can expose variables that can be modified in code

Audio Mixer

- Mixes Audio Groups
- Can also mix other mixers

Audio Snapshot

- Fade between mixer group settings
- Must be called in code

Questions?