

Title:

Getting Started with Game Development in Unity

Duration:

2-hour workshops held once a week for 5 weeks

Date & Time: TBD

Organizers:

IEEE CSC in collaboration with Ryerson GMU

Demo Project:

<https://github.com/ThaiDuongVu/GameDevWorkshop2021>

Prerequisites:

[Unity Editor](#)

[VSCode](#) (Optional)

[Game Assets](#) (Credits to [Kenney](#))

Content:

Week One: (2 Hours) - The Basics & Tile System

- Introduction to Game Development & Unity (30 Minutes)
- Review of programming (30 minutes)
 - Variables
 - If statements
 - Loops
 - Classes and methods
 - Unity's approach to programming
- Break (10 minutes)
- Quick demo of final game project (10 minutes)
- Download & import assets (10 minutes)
- Introduction to the tile palette system (10 minutes)
- Draw game background using tile palette system (20 minutes)

Week Two: (2 Hours) - Player & Bullet

- Quick review of last week's progress (10 minutes)
- Add player game object & its components (10 minutes):
 - Rigidbody 2D
 - Box Collider 2D
 - Sprite Renderer
 - Shadow
- Add player script & implement basic movement, shadow positioning (10 minutes)
- Implement player mouse rotation (10 minutes)
- Introduction to the particle effects system & implement player trailing effect (20 minutes)
- Break (10 minutes)
- Prevent player from going off screen (10 minutes)
- Add bullet object & its components (10 minutes):
 - Rigidbody 2D
 - Box Collider 2D
 - Sprite Renderer
- Add bullet script & implement bullet flying movement (10 minutes)
- Implement bullet shooting (20 minutes)

Week Three (2 Hours) - Enemy & Enemy AI

- Quick review of last week's progress (10 minutes)
- Add enemy object & its components (10 minutes):
 - Rigidbody 2D (kinematic)
 - Box Collider 2D
 - Sprite Renderer
- Add enemy script & implement enemy random generation (20 minutes)
- Implement enemy movement & shooting behaviour (20 minutes)
- Break (10 minutes)
- Implement bullet damaging player & enemy (20 minutes)
- Add game controller script & implement enemy spawning (20 minutes)
- Add basic player resources (health, ammo) & player score (10 minutes)

Week Four (2 Hours) - UI & Game Controller

- Quick review of last week's progress (10 minutes)
- Introduction to Unity UI & implement pause menu, game over menu (30 minutes)
- Add pausing & game over behaviour (20 minutes)
- Break (10 minutes)
- Add collectable objects & script (10 minutes)
- Implement collectable behaviour (10 minutes)

- Add text display for player resources (10 minutes)
- Add collectable spawning (20 minutes)

Week Five (2 Hours) - Finishing up & QnA

- Quick review of last week's progress (10 minutes)
- Introduction to the Package Manager & Post Processing package (10 minutes)
- Apply post processing effects to camera (20 minutes)
- Implement camera shaking (20 minutes)
- Break (10 minutes)
- Building our project (10 minutes)
- QnA (40 minutes)