

Oliver van Kaick

COMP4501

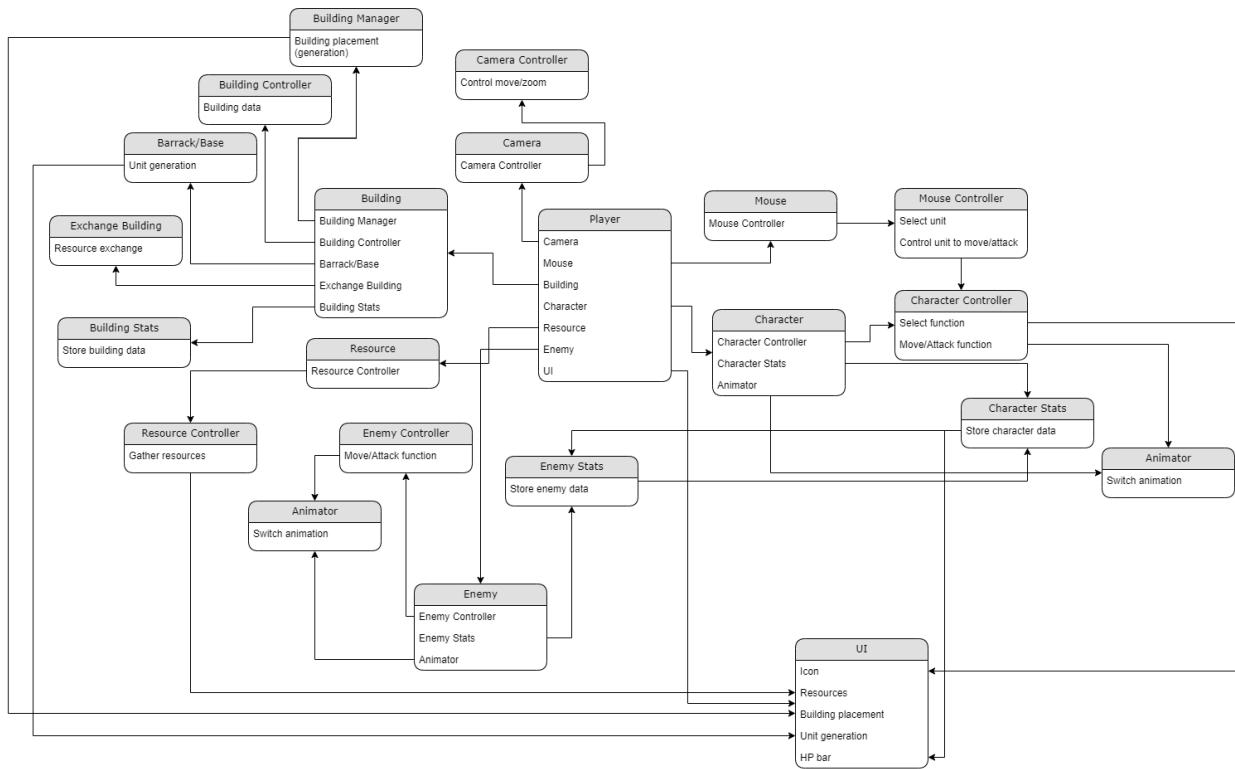
## Project Report

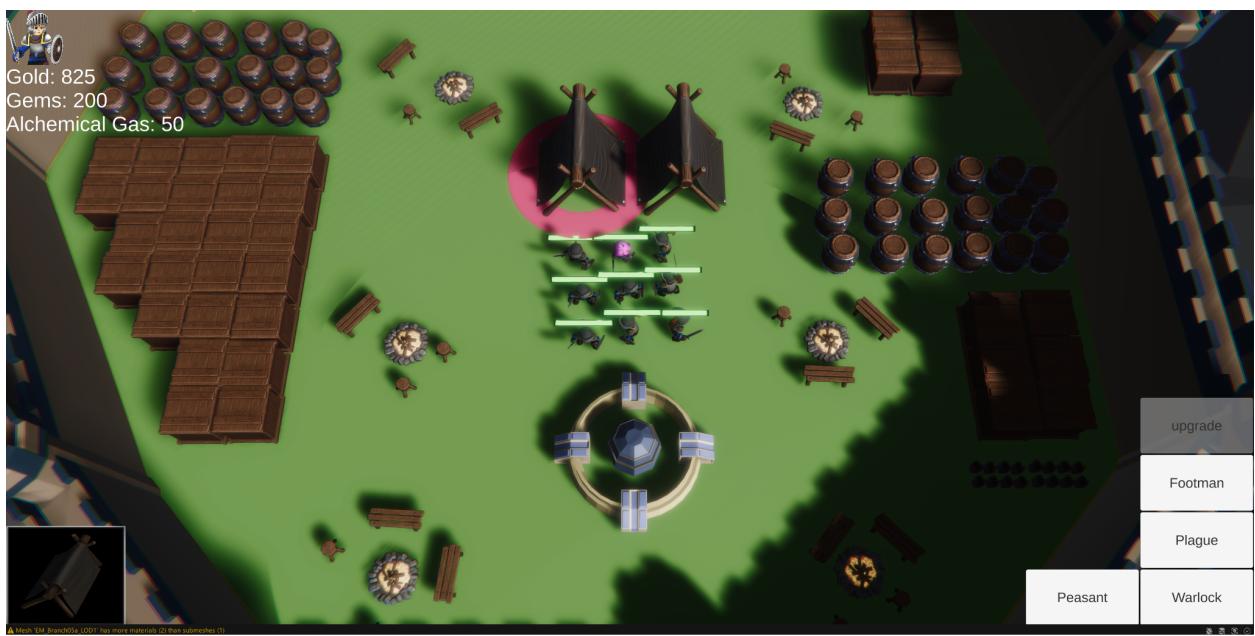
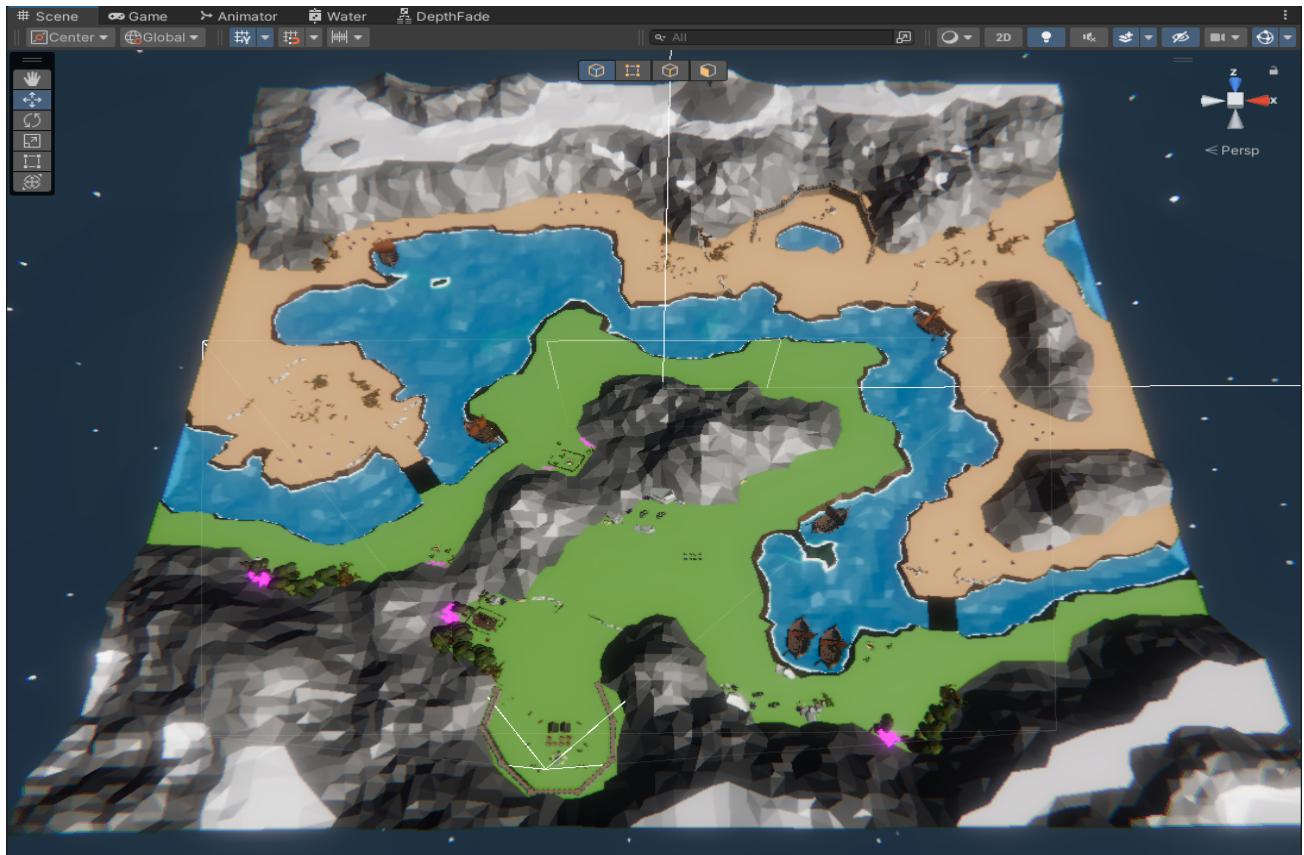
Yibo Sun, 101082357

Zhen Feng, 101172075

Yuhan Wang, 101165518

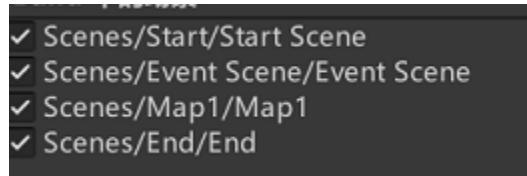
## Architecture:





## Scene switching

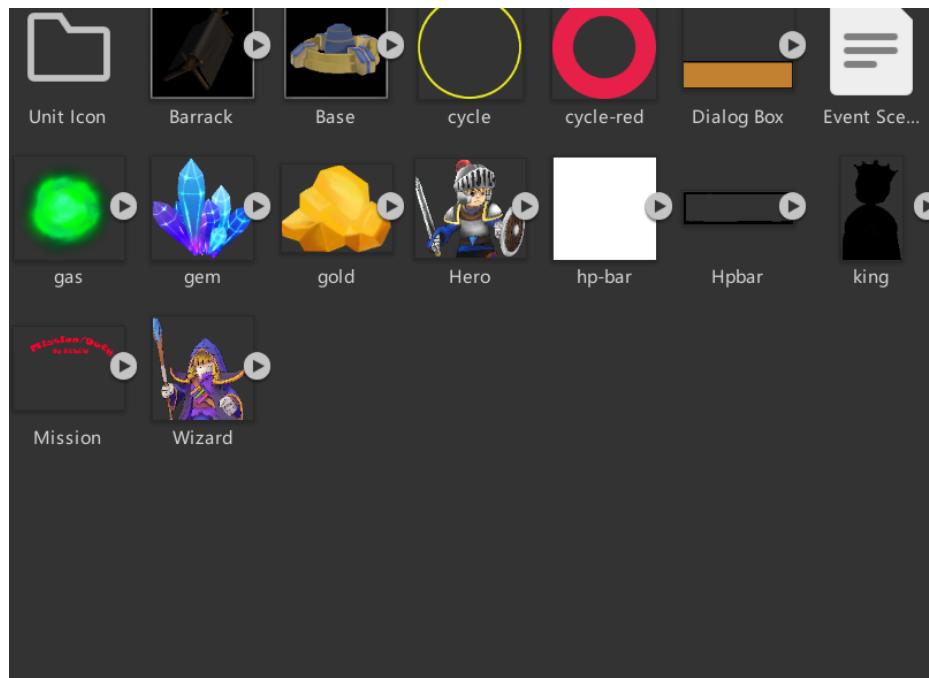
The game starts with the 'start' scene and is played through SceneManager. LoadScene  
(SceneManager. GetActiveScene(). buildIndex+1);



event scene: Due to time constraints, no character images were added, and the graphics



themselves have been completed (for KING)



Building and production functions:

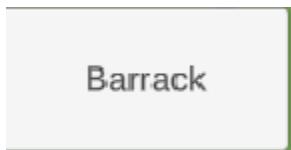
The main functions are to consume resources to place buildings and produce units, and to exchange resources in exchange buildings.

Scripts are in Scripts -> Building folder.

Prefabs are in Prefabs -> Building folder.

Building placement:

Left click the Barrack button.



A barrack ghost will follow the player's mouse.



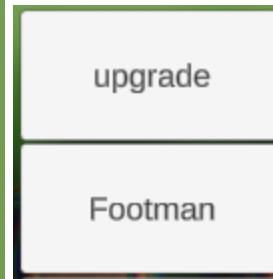
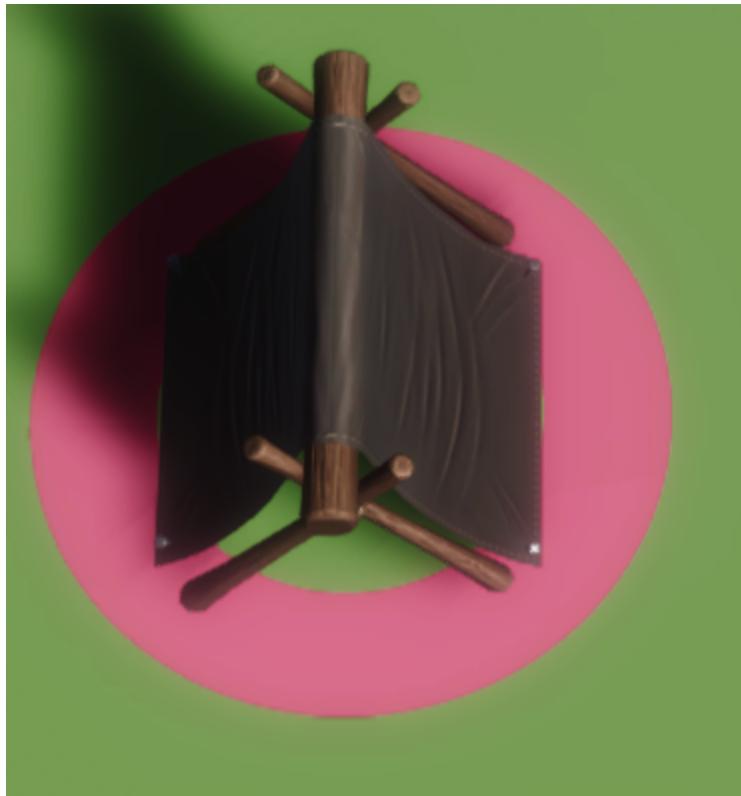
Left click a place that the player wants to place.



The barrack will be placed if there is no block on the map.

Production:

Left click the barrack, the barrack will be selected, a menu will be displayed.



Upgrade button: upgrade the barrack. Higher barracks can produce more types of units.

Units button: produce units.

Attach Building Manager script to BuildingPlacement object.(Base might not be set in the final project)

## BuildingPlacement

**Inspector**

**BuildingPlacement** Static Tag Untagged Layer Default

**Transform**

Position	X	-7.442	Y	37.701	Z	6.7485
Rotation	X	0	Y	0	Z	0
Scale	X	1	Y	1	Z	1

**Building Manager (Script)**

Script	# BuildingManager
Base Prefab	BaseTest
Barrack Prefab	Barrack
Base Ghost Prefab	BaseTest
Barrack Ghost Prefab	BarrackGhost
Ground Layer	Ground
Building Layer	Mixed...
Base Gold Cost	100
Base Gems Cost	50
Base Alchemical Gas	20
Barrack Gold Cost	200
Barrack Gems Cost	100
Barrack Alchemical G	40

Add Component

Building Layer: where the building can not be placed.

Cost: Amount of resources needed to build a building.

Attach Barrack script to Barrack prefab. (Final project might be different)

**Inspector**

**Barrack**  Static

Tag Barrack Layer Barrack

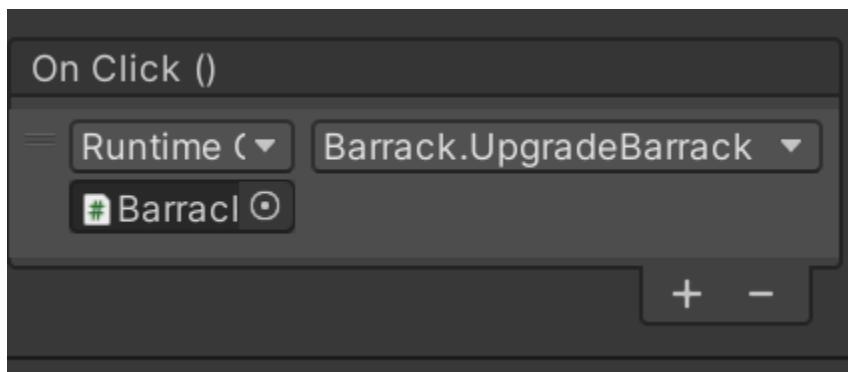
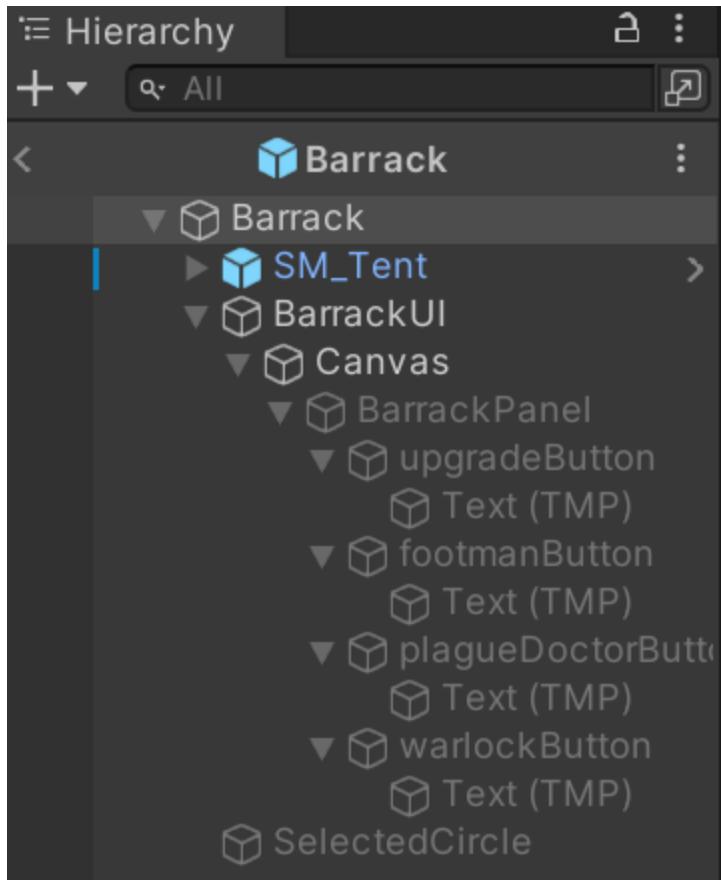
**Transform**

**Box Collider**

**Barrack (Script)**

Script	# Barrack
Upgrade Panel	BarrackPanel
Upgrade Button	upgradeButton (Button)
Footman Button	footmanButton (Button)
Plague Doctor Button	plagueDoctorButton (Button)
Warlock Button	warlockButton (Button)
Footman Prefab	Footman
Plague Doctor Prefab	Hero
Warlock Prefab	FemaleCharacter
Instance ID	0
Upgrade Cost Gold	200
Upgrade Cost Gems	100
Upgrade Cost Alcher	50
Footman Cost Gold	50
Footman Cost Gems	25
Footman Cost Alcher	10
Plague Doctor Cost G	75
Plague Doctor Cost G	40
Plague Doctor Cost A	20
Warlock Cost Gold	100
Warlock Cost Gems	60
Warlock Cost Alcher	30

**Nav Mesh Obstacle**

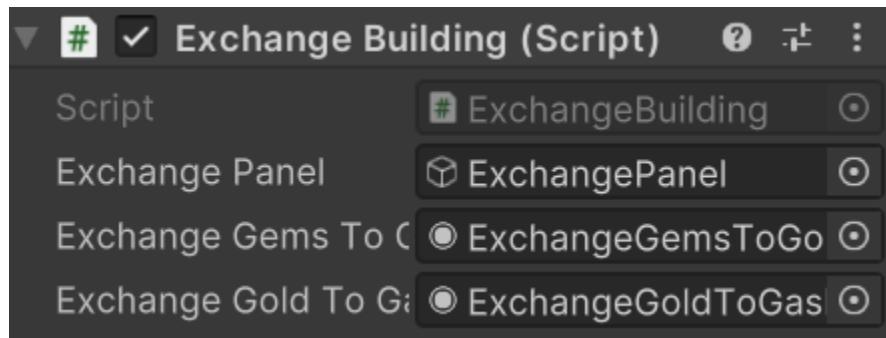


Combine upgrade function with upgrade button. Other buttons are similar.

Exchanging building:



Left click Exchanging building, click the button to exchange. The structure is similar to Barrack.



#### Resources:

Manage resources in game.

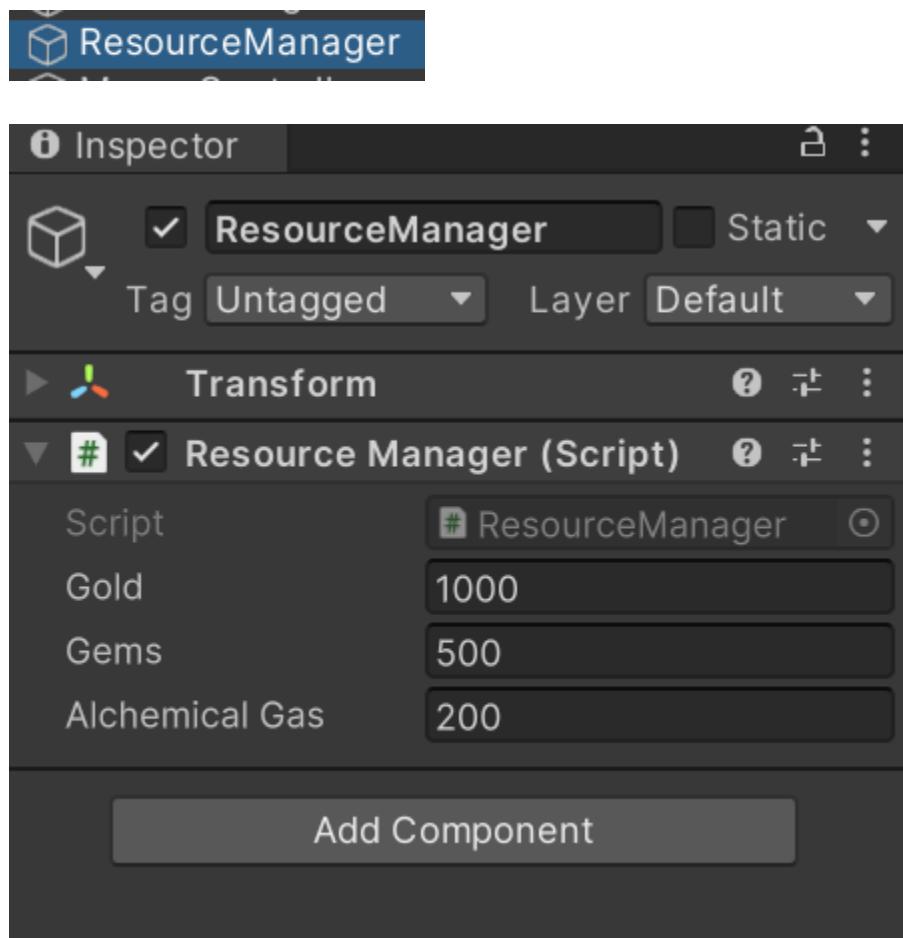
Scripts are in Scripts -> Controller folder, ResourceDisplayController.cs and

ResourceManager.cs.

All resources are displayed on screen. Can be updated when resources are added or consumed.

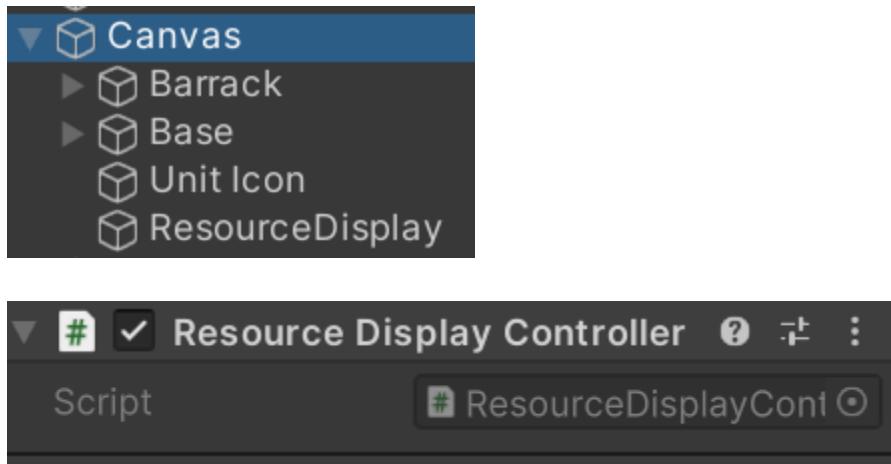
Gold: 1000	Gold: 500
Gems: 500	Gems: 240
Alchemical Gas: 200	Alchemical Gas: 70

Attach Resource Manager to ResourceManager object.



Initial resources can be edited in inspector.

Attach ResourceDisplayController to ResourceDisplay text mesh.

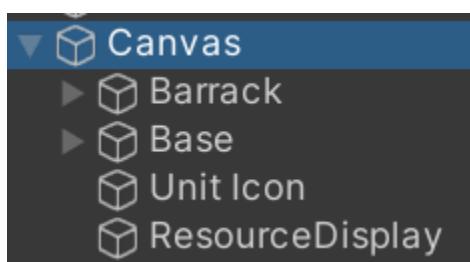


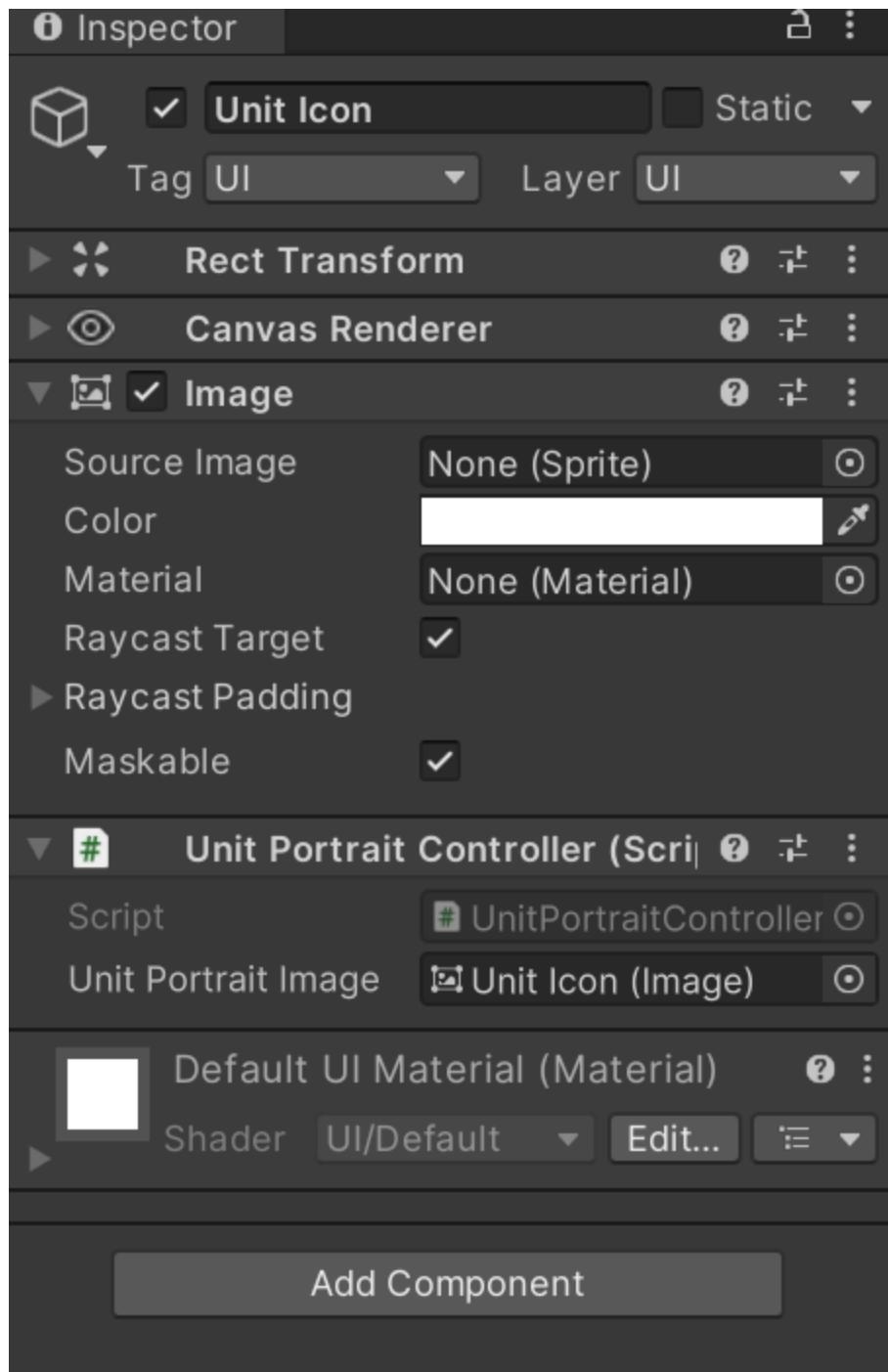
UI:

Left click a unit, The portrait will be displayed on screen.

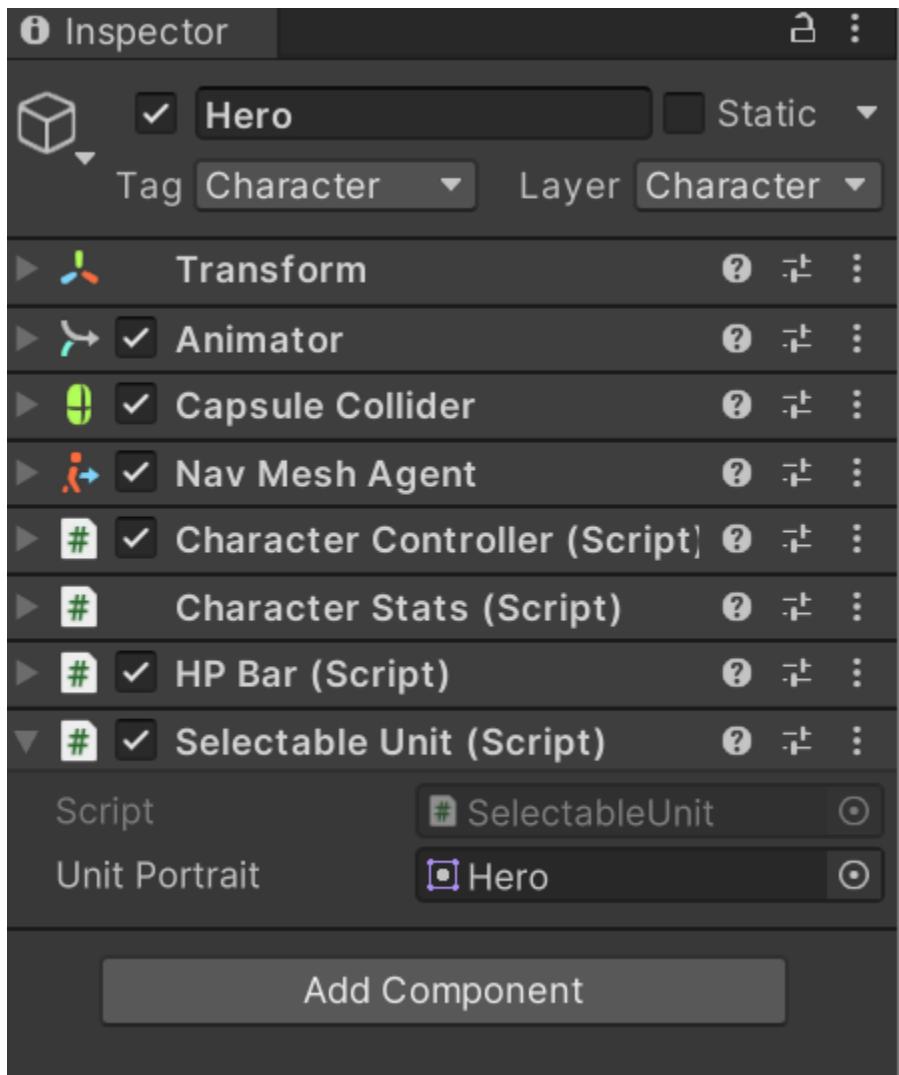
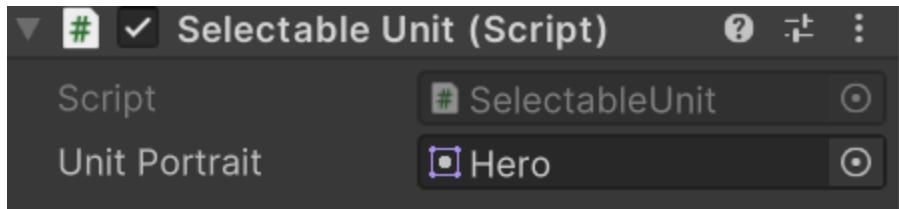


Attach Selectable Unit to Unit Icon image UI.





Attach SelectableUnit script to Unit prefab. Change Portrait sprite in Unit Portrait.



# Method reference

<https://www.youtube.com/watch?v=pJQndtJ2rk0&t=1369s>

[https://www.youtube.com/watch?v=BLfNP4Sc\\_iA](https://www.youtube.com/watch?v=BLfNP4Sc_iA)

[https://www.bilibili.com/video/BV1X84y1F7aY/?spm\\_id\\_from=333.999.0.0](https://www.bilibili.com/video/BV1X84y1F7aY/?spm_id_from=333.999.0.0)

[https://www.bilibili.com/video/BV1Za411g7sf/?vd\\_source=4d1f41de674667d535107fe3d8b045f9](https://www.bilibili.com/video/BV1Za411g7sf/?vd_source=4d1f41de674667d535107fe3d8b045f9)

<https://www.youtube.com/watch?v=mvPRub-T2WM>