**Project Backlog – Barrel Hopper**

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| **Date** | **Task** | **Actions** | **Decisions** | **References** | **File Name** | **Status** |
| 2022.02.06 | Project creation | UE4 project created. | N/A | N/A | Barrel\_Hopper | Completed |
| 2022.02.06 | Create Character | 1. A new blueprint class created. 2. A side scroller project created to migrate their mannequin assets. 3. Materials, Mesh, and Textures folders in the mannequin folder are moved to Character folder. | N/A | N/A | BH\_Character | Completed |
| 2022.02.06 | Giving our character a mesh | 1. Skeletal Mesh is brought into our character blueprint. | N/A | N/A | N/A | Completed |
| 2022.02.07 | Creating the character’s camera | 1. A **Camera** and a **SpringArm** components are added to the character blueprint. 2. Target Arm Length increased to 550cm, Socket offset is set to 75cm and Y value of Rotation is set to -2.5 in the SpringArm’s Details Panel. 3. Under the Camera Settings section, the property : inherit yaw, inherit pitch, inherit roll are all unchecked. 4. Use Controller Rotation Yaw property unchecked. BH\_Character(Self) Components panel -> Pawn section. | 1. Camera and SpringArm components are child of the Capsule component as we wish their positions to update relative to the capsule component. 2. Camera component is a child of the SpringArm component, as we will be using the spring arm to position and rotate the camera. 3. Camera Settings unchecked to ensure the camera does not rotate with the character. 4. Character property changed to ensure the character does not inherit its rotation from its owning controller. | N/A | N/A | Completed |
| 2022.02.07 | Creating Game mode | 1. A game mode blueprint is created. 2. BH\_GameMode(Self) -> Classes section -> Details -> Default Pawn Class -> BH\_Character selected. 3. BH\_GameMode selected in the Default Game Mode field. | Created a game mode that informs the engine that when a controllable player is spawned into a world to use our BH\_Character object by default | N/A | BH\_GameMode | Completed |
| 2022.02.08 | Creating and receiving input events | 1. Created an action mapping for jumping. 2. Created an axis mapping for movement. | N/A | N/A | N/A | Completed |
| 2022.02.09 | Character movement component settings modified. | Gravity Scale, Rotation Rate, and Jump Z velocity increased. | To give our character a better movement feel, the jump and fall speed is increased.   1. Gravity Scale is increased to make the character accelerates downwards faster when falling. 2. Z value of rotation rate is increased to make our player rotate much faster when moving from left to right. | N/A | N/A | Completed |
| 2022.02.09 | Building the level | 1. A new level created. | N/A | N/A | Barrel\_Hopper\_Map | Completed |
| 2022.02.11 | Blocking geometry | Placed a box brush for the floor. | Deleted static mesh actors titled Floor to replace them with a box brush. | N/A | N/A | Completed |
| 2022.02.11 | Converting a geometry brush to a static mesh | 1. Placed a box brush and converted it to a static mesh. 2. Placed another box brush for the walls. | The converted static mesh will be sued as an approximation volume when building the rest of the level. | N/A | N/A | Completed |
| 2022.02.11 | Applying materials to geometry brushes | A material applied to all surfaces of the walls and floor brushes. | N/A | N/A | N/A | Completed |
| 2022.02.11 | Level building and trigonometry | Created 6 ramps, a roof and a back wall using geometry brushes. | Ramps are sloped at an angle of 15 degrees so the barrels can roll down. | N/A | N/A | Completed |
| 2022.02.14 | Getting our barrels rolling | 1. A new blueprint class created. 2. Physics applied to the blueprint component. | 1. Simulate Physics option ticked in the Physics section of the Details panel. 2. Because we are creating a side scroller, the movement of the barrels is limited to the YZ plane. | N/A | BH\_Barrel | Completed |
| 2022.02.16 | Barrel spawners and Blueprint timers | 1. A new blueprint class created that spawns barrels. 2. Two float variables and a branch node is created in the event graph of the barrel spawner blueprint class. 3. Event tick node is used to spawn barrels. | Barrels set to be spawned for every 3 seconds. | N/A | BH\_Barrel\_Spawner | Completed |
| 2022.02.19 | Trigger volumes and destroying Actors | 1. A trigger volume is created that will destroy any barrel that enters its bound. 2. A blueprint added for the trigger volume. | A Box Trigger is used for the trigger volume. | N/A | BH\_BarrelKiller\_Blueprint | Completed |
| 2022.02.19 | Masking our destruction with particles | An explosive particle effect created for the destruction of the barrel. | N/A | N/A | N/A | Completed |
| 2022.02.21 | 1. Respawning the player. 2. Hit Events. | 1. Character respawn custom event is created and bound to OnDestroyed event of the character. 2. Event Hit in BH\_Character is utilized to detect collisions with barrels. | Character respawn event is a delegate of the OnDestroyed event of the character. | UnrealEngine-4※ByExample  Page. 111 | N/A | Completed |
| 2022.02.23 | Using a sequence to group the functionality of respawning character and camera. | 1. A sequence node is created and connected to the Character\_Respawn event. 2. Then 1 execution path of the sequence node is connected to the Delay node created for character respawning functionality. 3. A camera actor, which owns a camera component, is created to set the target view fo the camera when respawning our character. | N/A | N/A | N/A | Completed |
| 2022.02.24 | Creating the Blueprint function | A blueprint function is created for the character respawn functionality to keep the functionality following our sequence tidy. | N/A | UnrealEngine-4※ByExample  Page. 124 | N/A | Completed |
| 2022.03.01 | Creating first animation Blueprint | 1. Created a new animation blueprint. 2. Created a new state machine for the animation blueprint. 3. Animations for Idle, JumpStart, JumpLoop and JumpEnd are created and transitions created between them. | N/A | N/A | BH\_Character\_AnimBP | Completed |
| 2022.03.21 | The Animation Blueprint Event graph | Associated our character with our custom Animation Blueprint | 1. Event graph of animation blueprint modified. | N/A | N/A | Completed |
| 2022.03.21 | Getting our character running | 1. A 1D Blendspace created for the transition of idle, walk and run animation. 2. Play idle animation in our idle state of the locomotion state machine is replaced with the Blendspace. | N/A | N/A | BH\_Idle\_Run\_BS1D | Completed |
| 2022.03.28 | Creating first sound scape | 1. Two sound que objects created for footstep and death sound. 2. Animation notifies placed for walk, run and jump start animation. 3. BH\_Barrel blueprint event graph modified to play the explosion sound when barrels explode. 4. BH\_Character blueprint event graph modified to play the death sound que created earlier when the player is destroyed. 5. An ambient sound object is placed in the scene to play a persistent background sound. | N/A | N/A | BH\_Footstep  BH\_Death | Completed |
| 2022.04.03 | Ragdolls and Event dispatchers | 1. Created an event dispatcher. 2. Created a custom event called ‘Kill’. 3. Event Destroyed node and functionality removed and replaced with the Kill event. 4. BeginPlay event node bound to the Event to Death Dispatcher and the event dispatcher is joined with the Kill event. 5. Destroy call in the Event Hit functionality replaced with a call to Death Dispatcher. 6. In the event graph of BH\_GameMode, Bind Event To On Destroyed replaced with 7. Enabled ragdoll on the character mesh. | N/A | N/A | DeathDispatcher | Completed |
| 2022.04.12 | Creating a basic HUD + Project Completed. | 1. Created a HUD object that is responsible for drawing the in-game HUD and the end game screen. 2. Created a font object. 3. BH\_Winner object created which informs players when the player reaches the end of the game. | N/A | N/A | BH\_HUD  BH\_FONT  BH\_Winner | Completed |