**UI:**

* Basic “Menu UI” usage
  + Create UI blueprint
    - Right click->User Interface->Widget Blueprint
    - Prefix – WB (e.g. WB\_Menu)
  + Add border, vertical box (which aligns items vertically…), some buttons, text as child of buttons
  + Make buttons use “fill”, and add some padding (in details).
  + Add some variables in event graph to bind the button text to
  + Use button events onClicked to set the vars
  + Can place in world using any blueprint (just use world)
    - Create widget
    - Add to viewport
* VR \_UI:
  + As previously mentioned, UI needs to be a 3D object
  + Very easy to go from 2D “screen space” UI to 3D “world space” UI
  + Create a blueprint (VR\_UI), that is an actor
  + Add widget component
  + Details->user interface-> widget class -> set to be your widget blueprint
  + Details-> user interface-> draw at desired size
    - This might not be necessary; but it can help with weird size issues
* Editing the VRPawn:
  + Add widget interaction components to both motion controllers
    - Already present in vr template in UE5
  + On both widget interactions, change details->interaction->trace channel to ‘World Dynamic’
    - Otherwise, ui collision won’t work
    - Also click change debug
    - Pointer indexes need to be different (should already be different in the template)
  + In event graph, need to set interactivity for the menu
    - In VR, would be “input action trigger left/right”
    - Feed into “press pointer key”
    - Change key to left mouse button
    - Feed release into “release pointer key”
    - Target would be the widget interaction components
* VR HUD:
  + Material stuff **(proceed with caution — was bugged. Not sure if my editor settings or if the source I followed was wrong. You can create a UI by simply ignoring the widget material steps. It might disappear behind some scene objects, but such is working in VR).**
    - Create a new material M\_HUD
      * Material->blend mode-> translucent
      * Shading model -> unlit
      * Disable depth test -> true
        + Should help UI sit on top of everything
    - Create node textureSampleParameter2D
      * Sample source -> shared wrap
      * Need to add a white square as the texture
        + Double click on the texture on the textureSampleParameter2D node
        + In the textureSampleParameter2D node details, Param-> white square texture
      * RGB -> emissive colour
      * A -> opacity
  + For the actual HUD
    - Create widget blueprint
    - Add canvas panel, progress bar
    - Progress bar has scale 0.0-1.0
  + Set player health (using health bar) in pawn blueprint
    - Setup input event (input action)
    - Modify health var in character, set it
      * If health = 100 at start, may need to divide by 100 to fit progress bar range…
    - Grab reference to our hud widget
    - Pass reference into “get user widget object”
    - Now cast it to the name of our UI widget (probably HUD or VR\_HUD)
    - Can now set the variable in the HUD blueprint
  + Add a HUD widget to the VR player
    - Set widget class to our UI
    - Will need to edit transform – 100 out on the X is generally good
    - Make draw size 1920 \* 1080?
    - Set scale to 0.1???
    - Set material to M\_HUD
    - Collision ->collision preset -> no collision.

Sources/some help:

* <https://www.youtube.com/watch?v=H5nVjSwM_Uk>
* <https://www.youtube.com/watch?v=5q-bIUTOsQM>
* <https://docs.unrealengine.com/5.0/en-US/design-user-interfaces-for-xr-experiences-in-unreal-engine/>