Sample Question 1 Solution

1. Add HP to the player class

```
51    protected:
52        virtual void BeginPlay();
53
54    public:
55        UPROPERTY(BlueprintReadOnly)
56        float HP = 1.0f;
```

2. Create PlayerHPWidget class (parent is UserWidget)
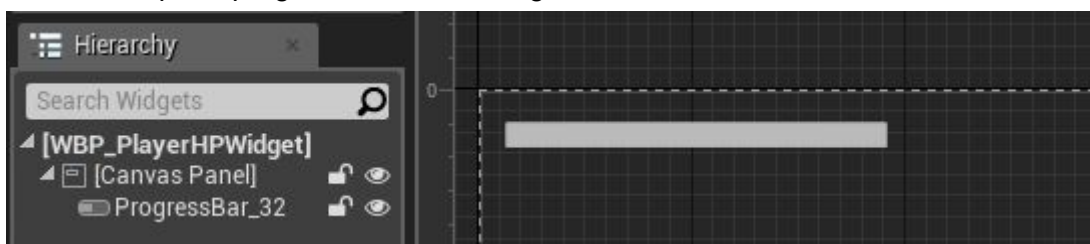
3. Add a player property in the widget

```
13    class SAMPLEFINAL_API UPlayerHPWidget : public UUserWidget
14    {
15        GENERATED_BODY()
16
17    public:
18        UPROPERTY(BlueprintReadOnly)
19        class ASampleFinalCharacter* Player;
20    };
```
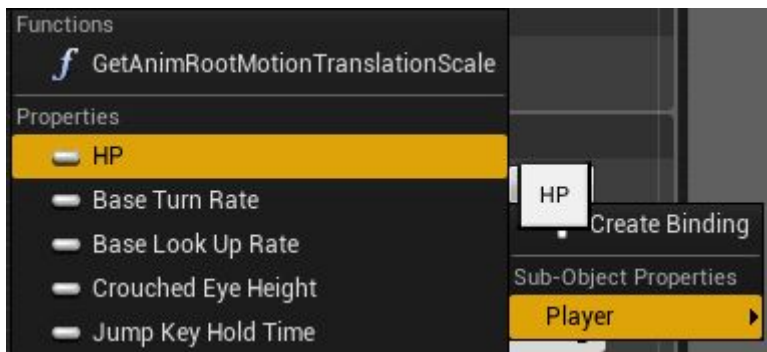
4. Create WBP_PlayerHPWidget through the editor
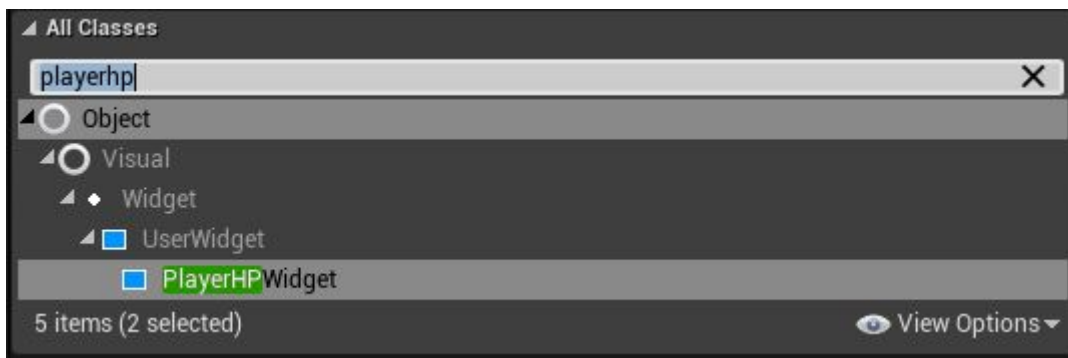
5. Setup the progress bar in the widget

6. Create a binding to the Player's HP

7. Add this widget subclass property to the player's header file

```
58          UPROPERTY(EditAnywhere)
            ...
59          TSubclassOf<class UPlayerHPWidget> WidgetClass;
```

8. Add code to create the widget and add it to the viewport in the implementation file

```
89    ⊟void ASampleFinalCharacter::BeginPlay()
90     {
91          // Call the base class
92          Super::BeginPlay();
93
94          auto widget = CreateWidget<UPlayerHPWidget>(UGameplayStatics::GetPlayerController(this, 0), WidgetClass);
95          widget->Player = this;
96          widget->AddToViewport();
```

9. On the player BP, choose the WBP_PlayerHPWidget
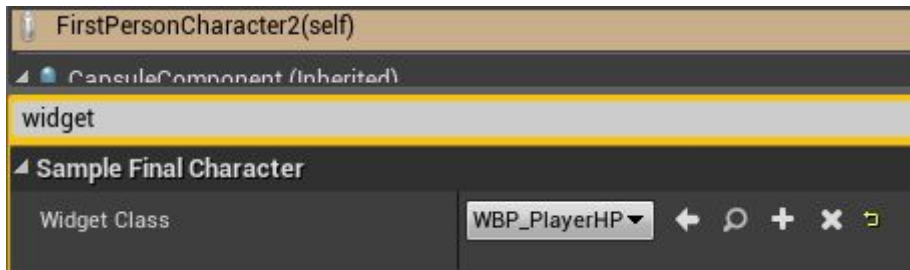
10. To test the widget, we can decrement the player's HP on gun fire

```
147    ⊟void ASampleFinalCharacter::OnFire()
148     {
149          HP -= 0.1f;
```

11. If you did the setup correctly, the player loses health when firing