My project idea is a 3D first-person game made in the Unity Engine. The game will be a stealth game, the main goal is to sneak behind enemies and around levels to obtain gold and valuable items. Sneaking consisting of keeping a distance away from enemies, using shadows in the level to refrain from letting the enemies see the player and making as little sound as possible. Enemies consisting of human guards walking around the level, doing patrols, keeping watch, and if they are alerted, see or hear the player they will try alert other guards and try to peruse and find the player. The game will consist of individual levels, and my initial plan is to have 3 levels including one tutorial level.

Each level will be the size of a bank or small hotel the player should be able to walk across an empty level without enemies within 2 minutes. Each level will have a starting point, where the player begins the level, and an exit point where the player will end the level. Each level may have keys for the player to be able to pick up and unlock locked doors. Each level will also have loot for the player to steal. The objective of each level is to steal gold and valuable objects worth certain amount of gold (Jewels, Rings, Necklaces, Vases, small statues) to reach a certain threshold of gold, which will be around 70-90% of all total value, all while trying to be detected as few times as possible by guards or enemies and to reach the exit point.

To accomplish this, I’ve deemed necessary the 6 main pillars of my project that need to work in order to make it successful, as follows:

1. Shadow Detection
   * Used to detect how far away the player is from a light based on the light’s range and intensity, to see how much the player is in the light (0% completely in shadow, 100% completely visible)
   * Used to determine if enemies are able to see the player
2. Sound Detection
   * Be able to detect how much sound a player is making (0% no sound, 100% running on marble or metal floors) based off of how fast the player is moving and what type of surface they are walking on (Marble floors are louder then grass or carpet)
   * Used to determine if enemies can hear the player
3. Enemy Detection

* First, enemies have “sight” to try and detect the player. First we start by seeing if the enemy has a clear line of sight to the player and then if we can see the player we use shadow detection to see if the player is “visible” enough to the enemy. Visible being determined by how much the player is in light plus how far away the player is to determine if the player is detected.
* Second, enemies have “hearing” to try and detect the player’s movement and location. Enemies try to “hear” the player by seeing how much sound the player is making plus how far away the player is to determine if the player is detected.
* Third, enemies have proximity detection. Enemies can detect if a player is to close based on how close the player is (in arms reach) and how fast the player is moving to determine if the player is detected.
* Fourth, enemies have the ability to alert and be alerted by other guards. When the player is detected by an enemy, that enemy will try to alert other nearby guards that they have found (seen or heard) the player. When a guard is alerted by other guards they will move away from where they are and try to find the player.

1. Enemy Movement, Navigation, and Interaction

* Creating and moving enemies around a level to patrol the level, find the player when they are alerted, or when the player is detected, to chase the player
* Allowing enemies to unlock, open and close doors.
* Turn on and off lights

1. Player Movement

* Creating fluid and responsive actions to move the player:
  + looking around
  + walking and running in 8 directions (North, East, South, West, North East, etc.)
  + crouching down to half the player’s height and to walk slower
  + jumping
  + climbing ladders, ropes, and chest high objects (walls, fences, windows).

1. Player Interaction

* Player Inventory
* Creating player interactions with each level:
  + opening doors
  + picking locks and safes
  + stealing gold and valuable objects (Jewels, Rings, Necklaces, Vases, small statues) in the level and off of enemies
  + being able to walk up behind non alerted enemies and when within arms reach press a button to knock out enemies
* being able to put out light sources
* being able to use switches (light switches or switches that can open and close doors, bridges, safes)

My plan for the database is to store a player score for each level. The score is made up of how much gold value that they have stolen, the time it took to complete the level (the timer starting at the beginning of a level and ending when the player has enough gold and has reached the exit point), the times alerted enemies, times knocked out an enemy. For the internet connection, I would like to host the game on a web server so that the game can be played in a web browser, as well as hosting and connecting to the database.