Hitting Play in UE4

1. Unreal loads the Map (ue central concept)
2. The Map Specifies the game Mode
3. World and Map are basically the same thing
4. The PlayerController joins the map.
5. It asks the GameMode to spawn a Pawn
6. The Pawn is linked to the PlayerController
   1. This link happens over the network when playing in Mult-player games.

Types of multiplayer games

1. Turn-Based
   1. asynchronous.
   2. Session Length – Variable
   3. Indie Suitability – Excellent
   4. Unreal Support – Minimal
2. MMO and Persistent World
   1. Synchronous
   2. Session Length – Potentially Infinite.
   3. Indie Suitability – Poor
   4. Unreal Support – Minimal
3. Real-Time Session based
   1. Synchronous
   2. Session Length < 1 hour
   3. Indie Suitability – Good
   4. Unreal Support – Excellent
   5. Stages
      1. Discovery – Finding who is online/ finding games to join
      2. Connection – Joining session and hooking up from client to server
      3. Synchronization – Synchronizing what players see over network connection.
4. Peer-to-peer
   1. Inputs are broadcast to all other player
   2. All player’s states are updated according to updates
      1. Must wait for slowest connection to update before next tick.
   3. Players can cheat and send out false inputs.
   4. Changes can compound from slight differences
   5. Fixed by connecting to server.
5. Client-Server model
   1. State – The entire state the game is in.
   2. Actions – Inputs from players.
   3. During Tick() Current state is combined with current actions which result in state 2 which is rendered and shown to user

Actors and Replication

1. Actors are the key component of replications that the server tries to keep up to date between client and server
2. **Replicated properties on replicated objects** will replicate