Final Game Plan –

This is a dynamic plan so if you feel something is missing make sure you add it to this list.

**Stages of development:**

1. Writing all the systems + story / scripts in the game (ex. locomotion, ai, movement) – 4 months
2. Designing the world (World, Player, Enemies, Shaders, Materials, UV Maps, Normal Maps) – 3 Months
3. Animating and Stitching together with the scripts – 1-2 months
4. World Design (Placing and positioning everything and building the entire world from a map) setting up pathfinding, marking out locations where events occur, setting up the optimisation of the world, setting up perlin noise and world generation, setting up horde movement throughout the world + proper interactions … – 1 month
5. Lighting and Graphical Effects – encompass light probes, reflection probes, GPU Instancing
6. Adding the story and cut scenes to the end result (all event systems all dialogue systems) implementing the story and adding gameplay cores such as missions and directives. So basically the game is constructed in this phase. Until before all the game was just gathering bones now we will throw it together. – 1-3 (Communication and dialogue systems) months
7. Making the game work from start to finish (Event Systems and Spawning Management) – 2 months
8. Post Processing and Particle Effects + Touch-ups – 2 weeks
9. Making the starting scene and setup of the game scene. Beginning title screens.
10. Optimising the entire game – 1 month
11. Music and SFX implementation (player’s walking, sound effects make sure they’re not choppy and they have blended together) … Don’t over crowd the sound system, decrease insignificant sounds etc.… – 1 month
12. UI Menus and Steam Overlays + Steam Achievements etc.. – 1 month
13. Finalising + Releasing Blog – 2 months
14. Testing phase (Friends, Family) – 2 weeks
15. Post Production – 1 month
16. Publishing – 1 month

During the system writing, it is 100% needed to plan out each system before carrying it out.

**Writing all BASE systems:**

* Editor Scripting
  + *Journal System*
* Story Development
  + Writing the whole story line and a massive document of the outline of the story and the events that will occur.
  + Possible endings and how you will make the player buy the next game
  + Fleshing out the story and making the characters full of emotion
  + Motivations and Backstories that you will tie in
  + Write the different creatures and hordes in the games and how they play a part in the story and tie in
  + Write about the antagonist and her role.
  + Write Easter eggs that can be found about the game and some things that people can discover about the forest.
  + How the story affects the forest right now and how the current story is affecting the movement and power of the creatures.
  + List the different bosses you will encounter if you go in a certain direction etc... In addition, how you will defeat them. (How will it affect the story)
  + List the different clans, leaders, friends, traitors and all the aspects throughout the game.
  + Plot twists and Cinematic Cut-scenes
  + Story / Game Integration
* Base Player Functionality
  + Player Controller w/ all features needed (responsive and powerful movement w/ procedural forces)
  + Camera Dynamic Movement (Camera collision, movement)
  + Over the arm arrow shooting (Arrow curve and bend when you shoot, wind accounting, different bow powers). Smooth and aiming.
  + Optimising the code
* Base NPC Functionality
  + Behaviour Editor
  + Custom Regional Path finding
  + Friend NPC
  + Build upon dialogue system
  + Locomotion system (will include IK, climbing and foot placement etc..)
    - Anticipation
    - Mass Consideration…
    - Read the Game design document to know what to add for IK.
  + Designing the AI States and beginning proceduralised states
  + Writing the complex + dynamic combat system.
  + Realistic NPC (Friend)
  + Writing the communication system what each hand signal means and how your friend will react to each one.
* Player world relations
  + Player and world Interaction (Refer to sheet)
  + Realism and Co-Existing World
  + Realistic sense of time (Time manager and day management + recording)
  + Event system and triggers
  + Proper ledge climbing
  + Regional Movement System (Optimisation)
* World systems
  + Auto segmenting and LOD tool (Sebastian Lague)
  + Placement of objects in scene
  + Create a perlin editor where the texture is created and a seed can be changed and modified until a desired result is given then a perlin reader script can be made to read it.
  + Paining objects onto scene
* Survival systems
  + Dynamic and Sleek Inventory System
  + Crafting System
  + World Destruction (UE) and forces when breaking
  + Breaking objects and object life + cracking
  + Life Meters and their impact (Properly measured)
  + Health and Damage system
  + Map System
* Final Vertical Slice Components
  + Saving and loading user data
  + Writing the camera effects
  + Writing UI Effects
  + Release assets that you made on the asset store
* Optimising all code
  + Going through and multithreading code where It can be done
  + Optimising all scripts based on video and implement the C# Job system

During this stage there will be ABSOLUTELY NO MODELLING. Everything will be done through cubes and blank terrain objects to test all the elements, maybe some cliffs may be added but apart from that nothing more.

By the end of this stage all the scripts needed for the rest of the game should be ready so everything can be easily implemented with the graphics. But more graphically oriented scripts will be added later including shaders and scattering.

Base Systems is to get all the hard coding out of the way, which is basically all of the systems which are dynamic and can be re-used. Now we have a small framework on which we can build more and complex things / designing.

Now we go to the asset development and designing the game assets + linking them with my scripts:

**Stages of Designing:**

When modelling life things these things will be done in order:

* Concept sketching
* Defining how the player looks verbally + gathering concept photos
* Tireless modelling + SCULPTING to add detail
* UV Unwrapping
* Rigging the character
* Adding tonnes of shape keys for every aspect
* Then adding proper IK targets to make it easy for me
* Weight painting
* Recording myself in poses of walking etc…
* Animating from live video footage.

1. Designing all characters
   1. The player model
      1. Various tools and weapons + an extensive look into the suit and how to make it more dynamic looking
   2. The friend model
   3. The enemies
      1. Their various weapons and tools + clothes
   4. NPC’s
2. Designing the world elements **Make sure appropriate items are marked as static.**
   1. The major assets
      1. Terrains (Integrated with terrain system + LODs)
      2. Clouds (A & S) – Movement integrated + Fading in the distance (shaders).
      3. Lakes (A & S)
      4. Rivers (Animated and shaded)
   2. Automatic Prefab Generation Tool
      1. Drag and drop models for automatic prefab generation + LOD’s + Auto colliders + Scripts needed and GPU Instancing if required.
   3. The minor assets
      1. All world environmental spread assets (trees, rocks, grass) etc.. w/ shape keys on all of them to create a WIDE variety of prebaked land using perlin noise.
      2. Base objects such as tables, tools, etc… All the items needed for the inventory + crafting system.
   4. World Relevance Objects
      1. Houses, Castles, Forts, Defence Systems…. Based on the story (will be described in the story)…
      2. Easter eggs objects, things that explain some backstory which make the audience go ‘aaaahh’ wow!
   5. Decorative Objects
      1. Such as statues, fountains, temples, shrines, vines, flower gardens.

**Animating and Stitching together all the elements**

* Animating the living things based on recorded footage of me.
* Keep in mind the principles of animations when animating, anticipation is important + mass consideration using sliders?
* **Procedural animations, using the procedural character controller data to modify the animation based on the data.**
* Using neural networks and IK to retarget the bones to the world
* Creating responsive IK to make the models interact with the world in a natural way using Ubisoft technology.
* Combat systems with the Animations to make it feel realistic and powerful.
* Character movement, uncertainty, emotion and IK foot placement.
* Animate the characters communication and the movement and make sure it is dynamic using curves.

Remember, stitching also revolves around adding features + scripts that you may need.

**World Design and World Setting Up**

* Map Design
  + Design the actual map and make sure it is properly designed to give the user some challenge.
  + Annotate the map to display all the regions, what story segment will occur here and how it will impact the game. How will this region look etc.
* Terrain + Pathfinding
  + Creating the terrain and setting up terrain LOD systems + world optimisation and map door systems.
  + Setup pathfinding regions inside the terrain, split based on region and avoid obstacles by auto baking static objects into the nav mesh.
* Asset Placement
  + Begin placing all of ‘major assets’ then add all the ‘World Relevance Assets’.
  + Use the perlin system to spread out all the ‘minor details’.
  + Use the perlin system to add decorative features (or do this by hand, anything is fine).
  + Creating markers for locations and setting up regions where events occur.
* Horde movement + NPC Navigation
  + Make sure the hordes are moving in a natural way
  + World navigation smooth and optimised
  + Hordes move relative of player position + time
* Optimisation
  + Make sure the world is loading smoothly and running as it should, collisions are working fine and the IK system is interacting with the world in a natural way.

**Lighting and Graphical Effects:**

* Watch loads of tutorials on how to make nice lighting in Unity
* Adding light probes throughout Unity.
* Adding reflection probes throughout the scene which will be enabled and disabled along side the optimisation system.
* Making soft shadows and baking light maps and get comfortable with the lighting settings, get the most performance + beauty.

**Story and Cut scene Integration**

* Plan when and where inside the world different aspects of the cut scenes are going to occur.
* Plan where the different spawning locations are where the game will end and how it will end.
* Then plan where the minor aspects of the story are and dialogues and references needed for that.
* Making sure that time is working appropriately throughout the game and horde movement is affecting your dialogue and the cinematics.
* Different bosses throughout the game.
* Write all the dialogue and appropriate NPC’s communication
* Every way that the player takes should bring a subset of challenges.
* Create event systems to every region (optimised using some collider) and add dialogue options, dialogue from your friend, NPC showing up.
* Create the cut scenes at all of the cut scene locations, and make sure they are beautiful and smooth.
* Every event can be triggered only once, the trigger may change based on the **story stage. This is to prevent looping.**
* Make sure there is no event overlapping each other and they are queued up.
* Re-test and make sure all of the events are working as they are supposed to.
* Add mission directives at locations and hints of what to do if the player looks lost or he is going in the wrong direction etc…
* Give them missions at major story points.
* Setup achievement points (for future integration with Steam)

**Making the game work from start to finish**

* Making sure spawning is working correctly from start to finish.
* Making sure the game is ending smoothly no matter where you are.
* Adding the death scene and cut scene, when you die before the end of the game.
* Make sure the player cannot go too off track and end up at a boundary.
* Re-test and make sure the events are all safe and nothing is breaking.
* The entire story is being played.
* The story is making sense from all different ways I go.
* Is the story interesting and is the friend NPC and you emotional enough?
* Linking the ending cut scene to some credits.
* Making credits scene and linking it to the menu.
* If it is interesting enough, how can you add a twist at the end?