***Breakdown Document***

***Required Feature Breakdown, Detail and Priority***

* Player Movement – High Priority
  + Basic Top Down Controls
  + Movement should be as firm as possible (no gliding after key release)
* Class for Book data – High Priority
  + Must contain genre of book for comparison against section
  + Potential for random name selection
* Book Spawning – High Priority
  + Must create a desired number of book objects
  + Must assign book objects random genre for desired list
  + Must add book to a stored list for the player to collect
* Player able to collect books from location – High Priority
  + Player must only be able to collect when near specific locations and left mouse pressed
  + Player collects 1 book per click
  + Book is always taken from top of list
  + Player must only be able to take a limited number of books
* Player able to deposit books in correct zone – High Priority
  + Zone must scan books in player inventory
  + Any books of correct genre are to be removed from Player inventory
* Guest enter timer – Medium Priority
  + After a random interval (between 2 fixed times) a random number of guests will enter the library
  + Guests will only spawn if a seating position is available for them to take
* Guest Movement to seat – Medium Priority
  + Guests will move to their assigned seat from the entrance they spawn at
* Guest Task Chance – Medium Priority
  + Upon arrival at seat at random intervals the guest will take a “Task Opportunity”.
  + “Task Opportunity” generates a number between 1 and 20.
  + If number is < Current level difficulty then no task is generated
  + If number is > level difficulty Guest will send a “task request” to the player for a specific book to be delivered to them.
  + While task is incomplete a guests “Dissatisfaction meter” will begin to rise
  + If meter gets too high Guest will leave a complaint and leave the library
  + Guest tasks will not trigger once all return trolleys are empty
* Guest Leave Level – Medium Priority
  + If no task is generated after a set time the guest will automatically move for the nearest exit and despawn
* Display key info to player – High Priority
  + Genre of books held
  + Zones for depositing books
  + Guest Tasks
  + Guest Locations for those with tasks
  + Time remaining to empty trolleys
  + Number of books in trolleys to return
* Level Complete and Failure states – High Priority
  + Level is complete when all books are returned, and no Guest Tasks remain
  + Too many complaints will cause Game Over
  + If player takes too long to empty trolleys, Game Over is Triggered
* Save System – Medium Priority
  + Game will save the level number upon completion
  + Players will be able to select the current level from the main menu
* Level Design – Medium Priority
  + Level will be split between shelf area where books will be returned to and sitting area where guests will be
  + Return Trolly’s will be stationed at easy to access locations
* Difficulty Balance – High Priority
  + Difficulty will increase in later levels, making guests more likely to trigger tasks, increasing the number of books to return and increasing the number of tasks a guest can spawn before leaving.
* Sprites – Medium Priority
  + Player
  + Guest
  + Level
  + Props
  + Menu
* Sound Effects – Medium Priority
  + Book Collect
  + Book Return
  + Task Created
  + Task Complete
  + Task Failed
  + Level Complete
  + Level Failed
  + Button Pressed
* Particle Effects – Low Priority
  + Determine where needed or if better without
* UI Design – Low Priority
  + Player HUD must show key info
  + Robotic design to match player
* Main Menu – Low Priority
  + Level Select Screen
  + Reset save data button
  + Quit Button
  + Controls Screen
  + Settings Screen
* Pause Menu – Low Priority
  + Resume Button
  + Return to Menu Button
  + Settings Screen
* Settings features – Low Priority
  + Change Resolution
  + Toggle Fullscreen
  + Change Sound Volume
  + Change Music Volume
  + Reset Values

***Expected Obstacles and solutions***

* AI Navigation
  + Unity has no inbuilt 2D pathfinding system for guests to use for movement to the assigned seat
  + Several externally created systems exist which I have used in previous projects
* Save System
  + Unity’s inbuilt “save system” does not save to game folder and stores data elsewhere on PC
  + Save data will instead be written to an external file and read from file where needed
* Balancing difficulty
  + Balancing many different gameplay elements to feel fair and still increase difficulty overtime
  + Extensive playtesting and feedback should solve problem as tweaking regularly based on feedback will help refine gameplay experience