Product backlog

ID	Feature/ Task	Description	Group
01	Project timeline and backlog	This task involves breaking down the project into features and creating a product backlog.The features in the product backlog are assigned to sprints creating sprint backlog. The timeline for the sprint is defined in the sprint backlog section.	Project management
02	Web socket prototype	The product involves communication over a web socket to support multiplayer games. The team has no previous experience with web sockets. So the team has decided to prototype the web socket communication first, to reduce risk. The task involves creating two players, each of whom have two boards (one is their board and the other is the opponent's board). A web socket communication will be set up so that the action of the first player is reflected on the second player's board.	Investigation
03	Entity relation diagram	The task involves creating an Entity relation diagram for the game data to be stored in the database.	Design
04	UI wireframe	The task involves creating a user interface wireframe for the game.	Design
05	Duck sprite sheet	The game requires ducks to be placed on the board. The ducks will be of different shape. Therefore, we need to create a duck image sprite for the game and this task represents this effort.	Design
06	Duck drag and drop feature prototype	The game has a NxN grid and ducks of various sizes. The first step in playing the game involves placing ducks on the NxN grid. Once both players place their ducks, the game of duck shooting can begin. The ducks can be placed in two ways: the game randomly places the ducks, or the player can place the ducks by dragging and dropping them on the NxN grid. This feature involves supporting the drag-and-drop feature to place ducks on the NxN grid. It is also noted	Investigation

		that the duck's size will be a multiple of K for both length and width, where K is the size of a cell in the NxN grid.	
07	OAuth for authentication	This task involves creating a login screen with OAuth support.	Core functionality
08	Homepage and game room	The home page should have the option to create and join a room. A host player creates a room and shares the room id. The guest player joins the room by entering the room id. Once both players have entered the room, the duck placement phase will begin.	Core functionality
09	Random duck placement feature	The game is divided into two phases: duck placement phase and duck shooting phase. Random duck placement is part of the duck placement phase. This task involves creating a board and placing the ducks randomly on the board. The game moves to the duck shooting phase when both the player clicks ready or the start timer runs out.	Core functionality
10	Duck shooting	In this phase both players can guess the opponent's duck position. The shooting will start once both players have selected a location on board or the selection timer runs out. A winner banner appears when a player wins.	Core functionality
11	Leaderboard	This feature displays the leaderboard, the leader board will be displayed on the game page. Additionally an option will be provided in the home page to see a longer version of the leaderboard.	Good to have feature
12	Chat	The feature involves providing an interface for the two players to chat. The chat need not be persistent across page reloads.	Good to have feature
13	UI and design polish	This task involves fine tuning the UI to look good, make it intuitive to use.	Quality assurance
14	Manual feature testing	The game will need to be tested end to end, this will involve playing games from start to finish, testing edge cases.	Quality assurance
15	Bug fixes from manual testing	This is a placeholder task to fix bugs which are detected in the manual feature testing.	Quality assurance

16	Player skills |Stretch goal		This feature provides players with the following skills that can strategically used to gain an advantage over their opponents: **Sonar:** This skill allows players to locate the approximate area where the enemy is present, helping narrow down the enemy location. **Larger hits or damage:** Increases the damage dealt by a player's attacks for a limited number of uses, making each hit more impactful. **Moving a duck:** This skill gives the ability to reposition a duck within the game. Each skill has a usage limit, requiring players to employ them thoughtfully to maximize their effectiveness.	Good to have feature
17	Deploy the game to the cloud.	The game will be deployed on AWS, this requires database setup, reverse proxy and hosting server.	Deployment

Sprint backlog

Sprint 1 [March 12 - March 18]

Product owner: Amith (amiths)

ID	Feature
01	Project timeline and backlog
02	Web socket prototype
03	Entity relation diagram
04	UI wireframe
05	Duck sprite sheet
06	Duck drag and drop feature prototype

Sprint 2 [March 19 - April 1]

Product owner: Andrew (actian)

ID	Feature
07	OAuth for authentication
08	Homepage and game room
09	Random duck placement feature
10	Deploy the game on the cloud
11	Chat
12	Model Implementation

Sprint 3 [April 2 - April 15]

Product owner: Gun (gkaewnga)

ID	Feature
13	Duck Shooting (Game logic)
14	Leaderboard
15	UI and design polish
16	Manual feature testing
17	Bug fixes from manual testing
18	Player skills