

### Solo Group:

- Application:
  - User can specify the map size and their name.
  - Snake moves at a constant speed of 1 square per second.
  - Snake cannot pass through walls.
- Database Information:
  - Stores user's name, map size, and points earned (1 point for each lengthening of the snake).
- Testing:
  - Basic unit tests for core functionalities ensuring the snake's movement, collision detection, and score calculation.
- Deployment with Containerization:
  - Basic deployment setup without containerization, allowing users to play the game via a web browser.

### Two-Person Group:

- Addition to Solo Group:
  - Snake can pass through walls.
  - Snake's speed increases by 7% after each food consumption.
- Database Information:
  - Option for database initialization: empty or CSV data check.
  - Data dumping to CSV upon application closure, ensuring data persistence.
- Testing:
  - Expanded unit tests covering additional functionalities like snake's ability to pass through walls and speed increment after food consumption.
- Deployment with Containerization:
  - Basic Docker setup for deployment, facilitating easier deployment and management of the application.

### Three-Person Group:

- Addition to Two-Person Group:
  - New obstacle appears on the screen every 4 moves, adding complexity to the gameplay.
  - Player can choose between standard square maps or 5 different irregularly shaped maps, offering varied gaming experiences.
  - Player can pause the game, allowing for breaks during gameplay.
- Database Information:

- Records the map selected by the player and the start/end times of the game, aiding in analyzing player preferences and session durations.
  - Records how many times the game was paused during the session, providing insights into player engagement.
- Testing:
  - Comprehensive integration tests to validate new features like obstacle generation and map selection.
- Deployment with Containerization:
  - Docker Compose integration for managing multiple containers, ensuring a smoother deployment process.

#### Four-Person Group:

- Addition to Three-Person Group:
  - Includes 24 maps categorized as Easy, Medium, and Hard, offering a wide range of challenges for players.
  - Random appearance of bonuses during gameplay, such as slowing down or shortening the snake, adding unpredictability and excitement.
  - Option for users to play in two modes: with or without logging in, catering to different user preferences.
  - If logged in, users have access to their previous game results, fostering a sense of progression and achievement.
- Database Information:
  - Stores user profiles and their game history, allowing for personalized gaming experiences and tracking of player performance.
- Testing:
  - Full end-to-end testing to ensure seamless functionality across all features, including map variety, bonus mechanics, and user authentication.
- Deployment with Containerization:
  - Advanced CI/CD pipelines using GitHub Actions for automated testing and deployment, ensuring high-quality releases and efficient deployment cycles.
  - Docker swarm for orchestrating container clusters, providing scalability and reliability for handling increased user traffic.