

**BITS Pilani PS1 2024**

**Initiatives' Project Scopes,  
Available Roles & Responsibilities**

Chakravue

Stormfront Rivals



Project Name	Stormfront Rivals
Description	<p><b>Stormfront Rivals is a game designed to incorporate advanced artificial intelligence to create a competitive and engaging environment for players. The game focuses on strategic gameplay where players must adapt to dynamically changing conditions and compete against intelligent, learning adversaries in a fantasy world.</b></p> <p><b>The technical assets for Stormfront Rivals include a dynamic weather system that affects gameplay, an AI tactical system for NPC behaviors, and a procedural map generation tool to ensure every game experience is unique. These assets are crucial in creating a challenging and varied gameplay environment that keeps players engaged and constantly adapting their strategies.</b></p>
Project Scope for BITS PS-1	Dynamic Weather Simulation: Create a real-time weather system that affects gameplay, where weather conditions like rain, fog, or wind influence the game's environment and strategy requirements.
	Procedural Map Generation: Implement a system that generates maps dynamically, ensuring that each game session presents a new terrain, which requires players to constantly adapt their strategies.
	Multiplayer Synchronization Framework: Ensure robust and reliable real-time multiplayer experiences with a system that efficiently handles player actions, game state updates, and network latency.

# StormFront Rivals

## 1. Dynamic Weather Simulation

Week	Responsibility	Tools Used	Role Fulfilled
1	Research existing weather simulation systems; identify key features and challenges.	Online journals, game development forums, Unity or Unreal Engine documentation	Junior Game Developer
2	Develop prototypes of weather effects using Unity.	Unity Engine, C# scripting	Junior Game Developer
3	Integrate weather effects with the game environment and test initial compatibility.	Unity Engine, version control systems (Git)	Junior Game Developer
4	Design and code the impact of weather on gameplay mechanics and strategies.	Unity Engine, C# scripting, game design documents	Gameplay Programmer
5	Optimize weather system performance and refine impact on gameplay based on feedback.	Unity Engine, performance profiling tools	Gameplay Programmer
6	Conduct final testing and document the weather system for integration.	Unity Engine, testing frameworks, documentation tools	Junior Game Developer

# StormFront Rivals

## 2. Procedural Map Generation

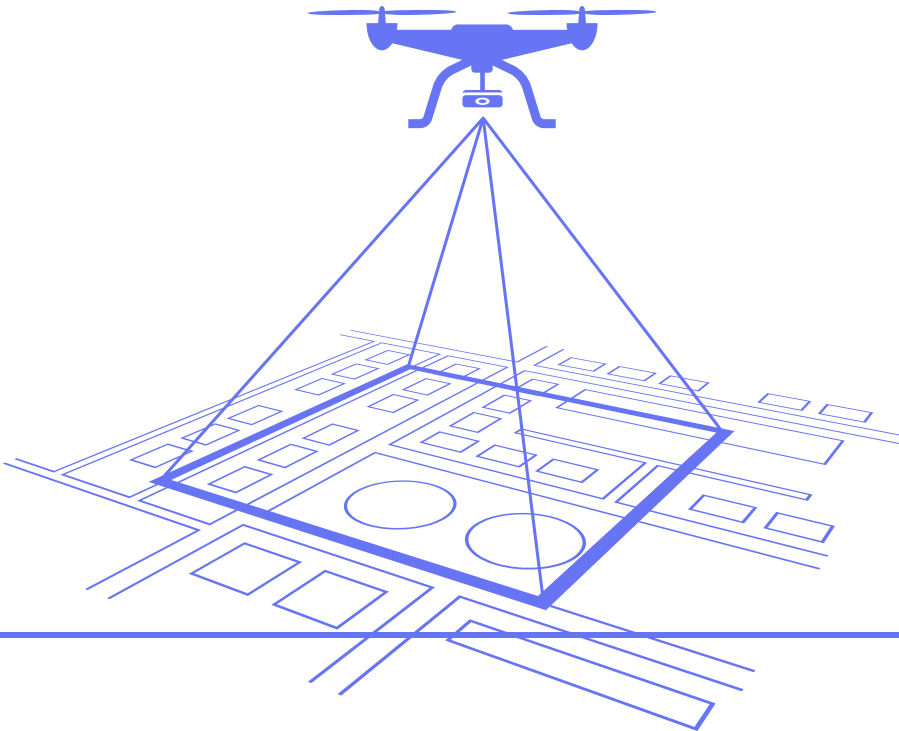
Week	Responsibility	Tools Used	Role Fulfilled
1	Study procedural generation algorithms and select suitable ones for terrain and features.	Research papers, procedural generation blogs, Python	Systems Developer
2	Develop initial versions of procedural algorithms for terrain generation.	Python, simple visualization tools	Systems Developer
3	Integrate algorithms with the game engine to generate basic maps.	Unity or Unreal Engine, C++ or C#	Systems Developer
4	Enhance maps with additional features like rivers and forests.	Game development environment, advanced algorithmic tools	Systems Developer
5	Optimize map generation for speed and diversity; test for repetition or pattern issues.	Profiling tools, Unity or Unreal Engine	Systems Developer
6	Document the procedural generation system and integrate it fully with the main game development branch.	Documentation software, version control systems like Git	Systems Developer

# StormFront Rivals

## 3. Multiplayer Synchronization Framework

Week	Responsibility	Tools Used	Role Fulfilled
1	Research existing frameworks and design the initial architecture for the multiplayer synchronization framework.	Research papers, online multiplayer development communities	Network Programmer
2	Develop foundational elements of the synchronization framework, focusing on player movement synchronization.	Programming languages for network coding (C++, Python), network simulation tools	Network Programmer
3	Implement state management for game objects in networked environments.	C++, Unity or Unreal Engine	Network Programmer
4	Conduct stress tests to identify and refine synchronization bottlenecks.	Network stress testing tools, game engines	Network Programmer
5	Implement security measures and optimize the framework for low latency.	Security tools, optimization algorithms	Network Programmer
6	Finalize documentation and integrate the multiplayer framework into the main game project.	Version control systems, documentation tools	Network Programmer

# Drone Wars



Project Name	Drone Wars
Description	<p><b>Drone Wars aims to offer a realistic and immersive drone piloting experience, focusing on the precision and dynamics of drone flight. The game seeks to not only entertain but also educate players on the nuances of drone operation, making it an ideal tool for both enthusiasts and aspiring drone pilots.</b></p> <p><b>For Drone Wars, the assets to be developed include a realistic drone physics engine, a drone customization toolkit, and an AI competition system to simulate realistic drone races and missions. These features are intended to simulate real-world drone behavior as closely as possible, providing a practical and educational experience that transcends simple gameplay.</b></p>
Project Scope for BITS PS-1	Realistic Drone Physics Engine: Develop a physics simulation that mimics the actual behavior of drones, considering factors like wind resistance, lift, and drag.
	Real-World Scenario Simulator: Design missions based on real-world applications, such as search and rescue, surveillance, or delivery tasks, to give players a sense of the practical utility of drones.

# Drone Wars

## 1. Realistic Drone Physics Engine

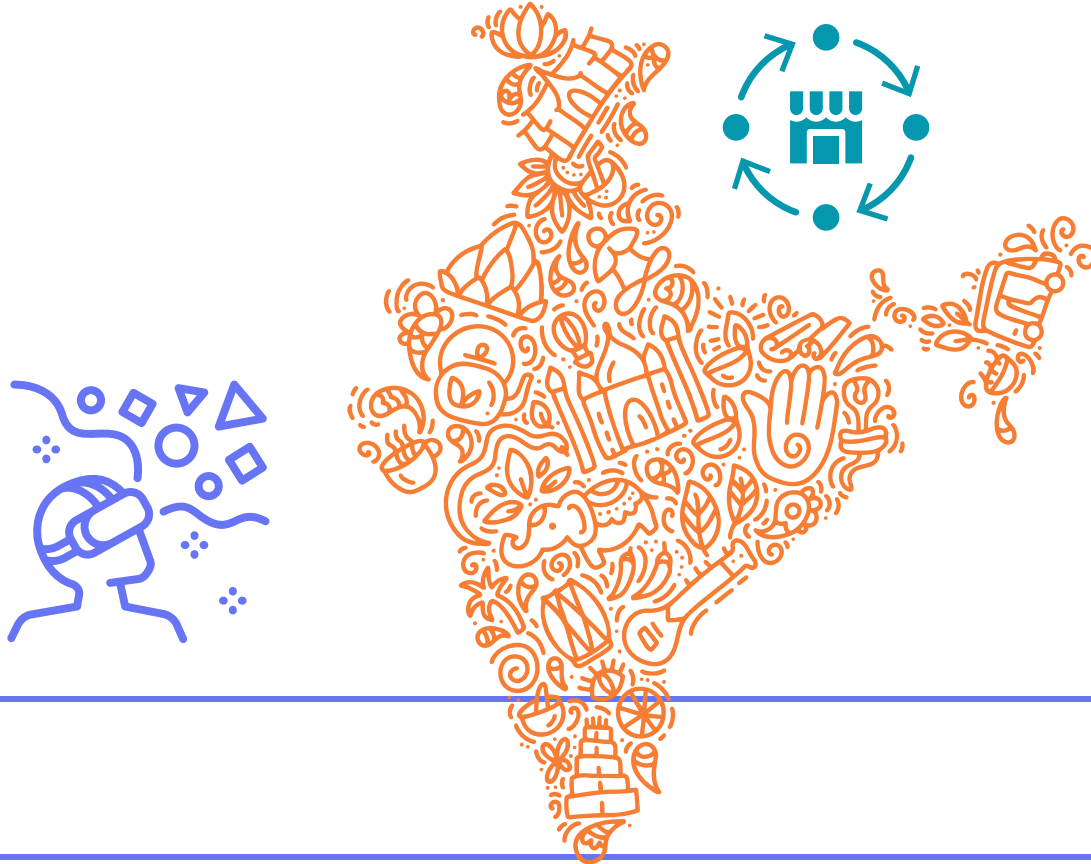
Week	Responsibility	Tools Used	Role Fulfilled
1	Research and understand the physics of drone flight, including wind resistance, lift, and drag.	Research papers, physics simulation software	Physics Programmer
2	Develop basic physics models for drone behaviors and interactions with environmental factors.	Physics engine software, C++ or Python	Physics Programmer
3	Integrate the basic physics model with the game engine and simulate simple flight scenarios.	Game development environment (Unity, Unreal Engine)	Physics Programmer
4	Refine the physics model to incorporate advanced flight dynamics and environmental interactions.	Advanced physics simulation tools, game engine	Physics Programmer
5	Conduct testing with different drone models to ensure accuracy and realism in various flying conditions.	Testing frameworks, game engine	Physics Programmer
6	Optimize the physics engine for performance and finalize integration with the main game development branch.	Performance optimization tools, version control systems	Physics Programmer

# Drone Wars

## 2. Real-World Scenario Simulator

Week	Responsibility	Tools Used	Role Fulfilled
1	Research real-world drone applications like search and rescue, surveillance, and delivery.	Online resources, interviews with industry experts	Game Designer
2	Design initial mission concepts and scenarios that replicate real-world drone uses.	Design software, storyboard tools	Game Designer
3	Develop mission prototypes and integrate basic scenarios into the game environment.	Game development environment (Unity, Unreal Engine)	Game Designer
4	Refine scenarios, adding complexity and varying objectives to enhance educational and practical relevance.	Advanced design tools, game engine	Game Designer
5	Test missions with potential players, gather feedback, and iterate on scenario design.	User testing frameworks, feedback collection tools	Game Designer
6	Finalize and document scenarios, ensure they are ready for full integration into the game.	Documentation software, version control systems	Game Designer





Project Name	Inc Ultra
Description	<p><b>Inc-Ultra is a cultural preparation tool designed to help travelers understand and adapt to the diverse and rich culture of India. Through interactive modules and realistic scenarios, the game addresses common travel challenges and equips users with the necessary skills and knowledge for a safe and enjoyable visit to India.</b></p> <p><b>The key assets for Inc-Ultra include VR integration for immersive learning experiences, language learning modules, and a virtual navigation system mimicking local transportation options. Additional tools like a food safety education tool, a health risk management module, and a bargaining skill game enhance the practicality and educational value of the game.</b></p>
Project Scope for BITS PS-1	VR Platform Integration: Develop a virtual reality (VR) environment that immerses players in realistic Indian settings, enhancing the learning experience.
	Cultural Item Virtual Marketplace: Build a virtual marketplace where players can explore and purchase authentic Indian cultural items and handicrafts.

# Inc Ultra

## 1. VR Platform Integration

Week	Responsibility	Tools Used	Role Fulfilled
1	Research existing VR platforms and choose the best fit for immersive cultural environments.	VR development forums, VR hardware reviews	VR Developer
2	Develop initial VR environments that replicate key Indian locales for cultural immersion.	Unity or Unreal Engine with VR plugins, 3D modeling tools	VR Developer
3	Integrate environmental elements and cultural scenarios into the VR platform.	Advanced VR scripting, Unity or Unreal Engine	VR Developer
4	Test the VR environments with user groups to gather feedback on realism and immersion.	VR test rigs, user feedback forms	VR Developer
5	Refine VR settings based on feedback, focusing on enhancing user engagement and environmental interaction.	Unity or Unreal Engine, 3D modeling tools	VR Developer
6	Finalize VR integration, ensuring smooth operation and full immersion, and prepare documentation for deployment.	Performance optimization tools, documentation tools	VR Developer

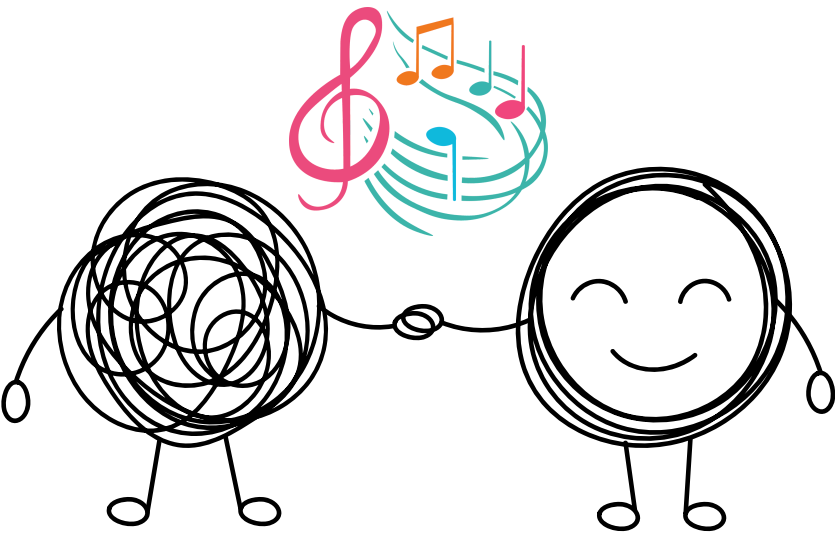
# Inc Ultra

## 2. Cultural Item Virtual Marketplace

Week	Responsibility	Tools Used	Role Fulfilled
1	Plan and design the layout and functionality of the virtual marketplace.	Wireframing tools, design software	Web Developer
2	Develop the frontend of the marketplace, focusing on user experience and visual appeal.	HTML, CSS, JavaScript	Web Developer
3	Implement backend systems to manage transactions, item listings, and user profiles.	Server-side scripting, database management systems	Web Developer
4	Populate the marketplace with a wide range of cultural items and handicrafts.	Content management systems, database tools	Web Developer
5	Test the marketplace with users to ensure functionality and user engagement.	Testing frameworks, user feedback forms	Web Developer
6	Launch the marketplace, monitor initial user interactions, and prepare for iterative improvements.	Analytics tools, server monitoring software	Web Developer

Accenta

Radiant Harmony



Project Name	Radiant Harmony
Description	<p><b>Radiant Harmony is a web platform designed to offer music therapy sessions to users dealing with various health conditions. The platform aims to provide therapeutic benefits through music, helping improve conditions such as depression, anxiety, and chronic pain, accessible to anyone without requiring a musical background.</b></p> <p><b>The platform will feature a personalized therapy management system, a real-time feedback system, and a library of therapeutic music sessions tailored to different needs and conditions. These assets are designed to make music therapy accessible and effective, providing users with a tool to manage and improve their mental and physical health.</b></p>
Project Scope for BITS PS-1	Accessibility Features: Ensure the platform is accessible to all users, including those with disabilities. This includes audio descriptions, closed captions for videos, and a screen reader-friendly design.
	Appointment Scheduling System: Integrate an appointment scheduling system that allows users to book sessions with music therapists easily and receive reminders.
	Community Engagement Tools: Build tools that allow users to participate in community activities, such as group therapy sessions or forums where they can share experiences and support each other.

# Radiant Harmony

## 1. ~~Accessibility Features~~

Week	Responsibility	Tools Used	Role Fulfilled
1	Research best practices for web accessibility, focusing on audio descriptions, closed captions, and screen reader-friendly designs.	Web content accessibility guidelines (WCAG), online forums	Accessibility Developer
2	Develop initial implementations for key accessibility features such as text-to-speech for audio descriptions and captioning systems for videos.	HTML5, JavaScript, accessible media tools	Accessibility Developer
3	Integrate these features into the existing platform design and ensure compatibility across different devices and browsers.	CSS, ARIA, cross-browser testing tools	Accessibility Developer
4	Conduct user testing with individuals who have disabilities to gather feedback on the usability of the accessibility features.	User testing protocols, feedback forms	Accessibility Developer
5	Refine and optimize the accessibility features based on user feedback, focusing on ease of use and effectiveness.	JavaScript, CSS, user feedback tools	Accessibility Developer
6	Finalize and document the implementation of all accessibility features, ensuring full compliance with international standards.	Documentation tools, compliance checklists	Accessibility Developer

# Radiant Harmony

## 2. Appointment Scheduling System

Week	Responsibility	Tools Used	Role Fulfilled
1	Research and select a suitable framework or tool for developing a robust appointment scheduling system.	Online research, scheduling APIs	Web Developer
2	Design the user interface for the scheduling system, ensuring it is intuitive and integrates seamlessly with the existing platform.	UI design software, HTML5, CSS	Web Developer
3	Develop the backend for the scheduling system, including database management for appointments and user accounts.	Server-side languages (e.g., Python, Node.js), database management systems (e.g., MySQL, MongoDB)	Web Developer
4	Integrate the scheduling system into the platform and ensure it supports sending automated reminders to users.	Integration tools, email and SMS APIs	Web Developer
5	Test the system with users to ensure it is functioning correctly and is user-friendly.	Testing frameworks, user feedback forms	Web Developer
6	Deploy the scheduling system and monitor its performance, making adjustments based on initial user interactions.	Deployment tools, performance monitoring tools	Web Developer

# Radiant Harmony

## 3. ~~Community Engagement Tools~~

Week	Responsibility	Tools Used	Role Fulfilled
1	Plan and design features for community engagement such as forums, group therapy sessions, and user interaction platforms.	Design software, online community management resources	Community Manager Developer
2	Develop the initial versions of community tools, ensuring features like forums and group chat functionalities are included.	Web development technologies (e.g., JavaScript, PHP)	Community Manager Developer
3	Integrate these tools into the existing platform, ensuring smooth interaction and data flow between components.	Web integration tools, APIs	Community Manager Developer
4	Conduct beta testing with select users to refine the usability and functionality of the community tools.	Beta testing tools, feedback collection systems	Community Manager Developer
5	Optimize and secure the community features, focusing on user privacy and data security.	Security tools, optimization software	Community Manager Developer
6	Finalize the deployment of the community engagement tools, document the features, and prepare for public launch.	Deployment tools, documentation software	Community Manager Developer



Project Name	PlayPro
Description	<p><b>PlayPro is envisioned as a player transfer market for esports, providing a platform for gamers to showcase their skills and for teams to scout for talent. It aims to streamline the process of player transfers and contract negotiations, making it easier for new talent to find opportunities and for teams to secure the right players.</b></p> <p><b>Technical assets for PlayPro will include a real-time transfer market dashboard, a player profile management system, and a contract negotiation simulator. These tools are designed to enhance the visibility of players, provide valuable market insights, and facilitate secure and fair negotiations, promoting a more organized and professional esports environment.</b></p>
Project Scope for BITS PS-1	Player Profile Management System: Develop a comprehensive system for players to create, update, and manage their professional profiles, including game stats, achievements, and multimedia content like videos and images.
	Community and Networking Features: Include social networking functionalities, like messaging, forums, and connection recommendations, to foster a community of players, teams, and industry stakeholders.
	Mobile Compatibility and API Integration: Ensure the platform is mobile-friendly and provide APIs for integration with other esports services and platforms, enhancing usability and accessibility.



# PlayPro

## 1. Player Profile Management System

Week	Responsibility	Tools Used	Role Fulfilled
1	Research and plan the database structure for storing player profiles, including game stats and multimedia content.	Database design tools, SQL	Backend Developer
2	Develop the database and APIs for profile creation, updating, and management.	SQL, RESTful API development tools	Backend Developer
3	Design and implement the user interface for profile management, ensuring ease of use and responsiveness.	HTML, CSS, JavaScript, frontend frameworks (e.g., React, Angular)	Frontend Developer
4	Integrate the frontend with the backend APIs, allowing seamless data flow for profile management.	Integrated development environment (IDE), API testing tools	Full Stack Developer
5	Conduct extensive testing across different devices and user scenarios to ensure functionality and security.	Testing frameworks, security testing tools	Quality Assurance
6	Deploy the profile management system, monitor its performance, and make necessary adjustments based on user feedback.	Deployment tools, monitoring tools	DevOps Engineer

# PlayPro

## 2. Community and Networking Features

Week	Responsibility	Tools Used	Role Fulfilled
1	Plan and design community features such as forums, messaging systems, and networking recommendations.	Wireframing tools, design software	Web Developer
2	Develop the backend for messaging and forums, ensuring data integrity and user privacy.	Server-side languages (e.g., Node.js), database systems	Backend Developer
3	Implement the frontend for the community tools, focusing on user engagement and interactive elements.	HTML, CSS, JavaScript, frontend frameworks	Frontend Developer
4	Integrate all community features into the main platform, ensuring seamless interaction between different components.	Full stack development tools, integration testing tools	Full Stack Developer
5	Test the community features with real users to collect feedback and refine usability.	User testing frameworks, feedback collection tools	Quality Assurance
6	Launch the community tools, monitor initial engagement, and plan for future enhancements based on user activity.	Social media monitoring tools, analytics software	Community Manager

~~3. Mobile Compatibility and API Integration~~

Week	Responsibility	Tools Used	Role Fulfilled
1	Research and design a mobile-friendly version of the platform, ensuring accessibility and usability.	Mobile design guidelines, prototyping tools	Mobile Developer
2	Develop mobile-specific functionalities and optimize existing features for mobile use.	Mobile development environments, responsive design tools	Mobile Developer
3	Develop and document APIs for integration with other esports services and platforms.	API development tools, documentation tools	API Developer
4	Test API integrations with third-party services to ensure compatibility and security.	API testing tools, security testing frameworks	Integration Specialist
5	Conduct extensive mobile usability testing to ensure a seamless user experience across all devices.	Mobile testing frameworks, usability testing tools	Quality Assurance
6	Deploy the mobile-compatible platform and APIs, monitor integration points, and adjust based on feedback.	Deployment tools, monitoring software	DevOps Engineer

Project Name	GameBridge
Description	<p><b>GameBridge aims to connect the world of gaming with professional development by identifying and cataloging skills acquired through gaming that are applicable in the professional realm. The platform is designed to help gamers understand and articulate the value of their gaming experience in terms of transferable skills.</b></p> <p><b>For GameBridge, the development will focus on creating a skill identification engine, a professional development tracker, and a dynamic recommendation system. These assets are intended to help users measure and enhance their skills, link them to potential career opportunities, and provide a pathway for professional growth using gaming as a foundational tool.</b></p>
Project Scope for BITS PS-1	Resume Building Toolkit: Offer tools that allow users to create dynamic resumes that incorporate their gaming-derived skills. This could include templates and guidelines on how to effectively translate gaming skills into professional skills.
	Esports Role Analysis Module: Integrate a module specifically designed to analyze and document roles within the esports industry that are currently underrepresented in terms of skill breakdowns.
	Research and Development Portal: Establish a portal within the platform for publishing, sharing, and collaborating on research papers related to the findings about skill transfers from gaming to professional realms.

# GameBridge

## 1. Resume Building Toolkit

Week	Responsibility	Tools Used	Role Fulfilled
1	Research and design user-friendly templates for resumes that highlight gaming-derived skills.	Design software, user research tools	UX/UI Designer
2	Develop the user interface for the resume builder toolkit, focusing on simplicity and customization options.	HTML, CSS, JavaScript, frontend frameworks	Frontend Developer
3	Implement functionality for storing and managing user-created resumes and profile information.	Server-side languages (e.g., Python), database systems	Backend Developer
4	Integrate the front-end and back-end systems, ensuring smooth data flow and user experience.	Full stack development tools, API testing tools	Full Stack Developer
5	Conduct testing to ensure the toolkit is intuitive and meets the needs of diverse users.	User testing frameworks, feedback collection tools	Quality Assurance
6	Finalize the toolkit deployment, document the features, and launch the toolkit on the platform.	Project management tools, documentation software	Project Manager

2. ~~Esports Role Analysis Module~~

Week	Responsibility	Tools Used	Role Fulfilled
1	Research and identify key roles within the esports industry that lack detailed skill descriptions.	Research tools, industry reports	Data Analyst
2	Design the module architecture to analyze and display role-specific skills and requirements.	System design tools, software architecture models	Systems Architect
3	Develop the backend for the module, ensuring robust data handling and update capabilities.	Server-side programming, database management	Backend Developer
4	Implement algorithms to analyze and categorize esports roles based on skill data collected.	Data analysis tools, machine learning frameworks	Data Scientist
5	Test the module for accuracy and usability, ensuring the data presented is relevant and understandable.	Testing frameworks, user feedback systems	Quality Assurance
6	Integrate the module into the main platform, finalize documentation, and oversee the launch.	Project management tools, documentation software	Project Manager

3. ~~Research and Development Portal~~

Week	Responsibility	Tools Used	Role Fulfilled
1	Plan and design the layout and features of the research portal, focusing on collaboration and accessibility.	Web design tools, prototyping software	Web Developer
2	Develop the infrastructure for document management, submission, and peer review processes.	Server-side languages, database management systems	Backend Developer
3	Implement the user interface for the portal, ensuring ease of navigation and user interaction.	HTML, CSS, JavaScript	Frontend Developer
4	Integrate front-end and back-end components, test for functionality and seamless user experience.	Full stack development tools, integration testing tools	Full Stack Developer
5	Conduct usability and functional tests, collect feedback from potential researchers and developers.	Usability testing tools, feedback collection tools	Quality Assurance
6	Finalize the portal, ensure all functionalities are operational, document the system, and launch.	Project management tools, documentation software	Project Manager

