GOOGLE DEVELOPER STUDENT CLUBS

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING

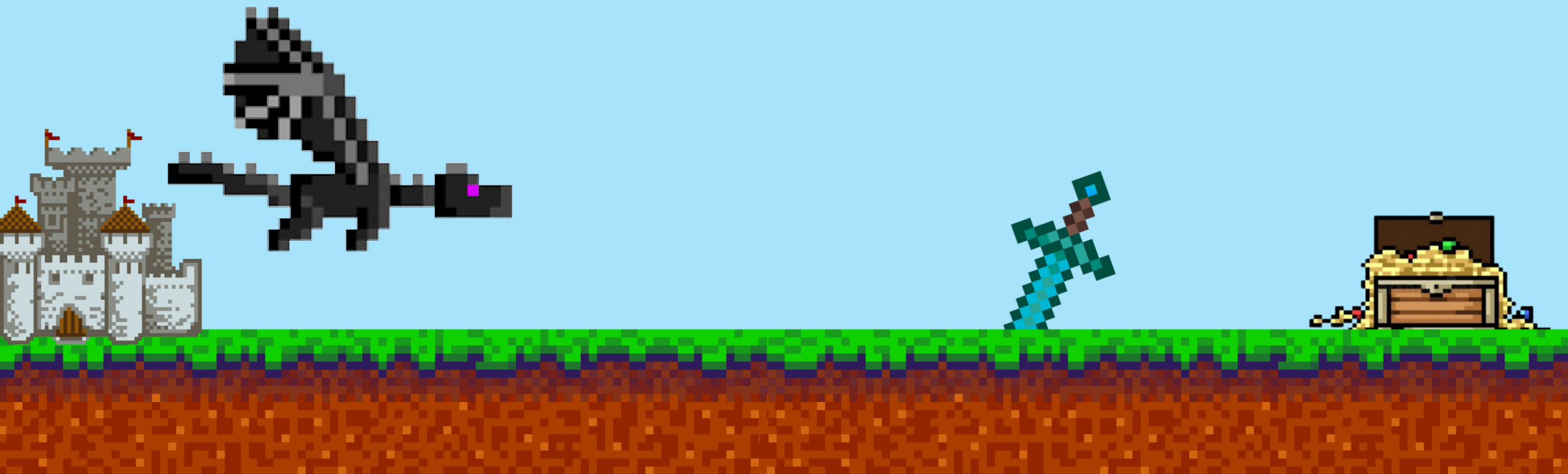
PRESENTS

BIT N BUILD

AROUND THE WORLD!

PROBLEM STATEMENTS

Pick one scenario and choose one problem statement

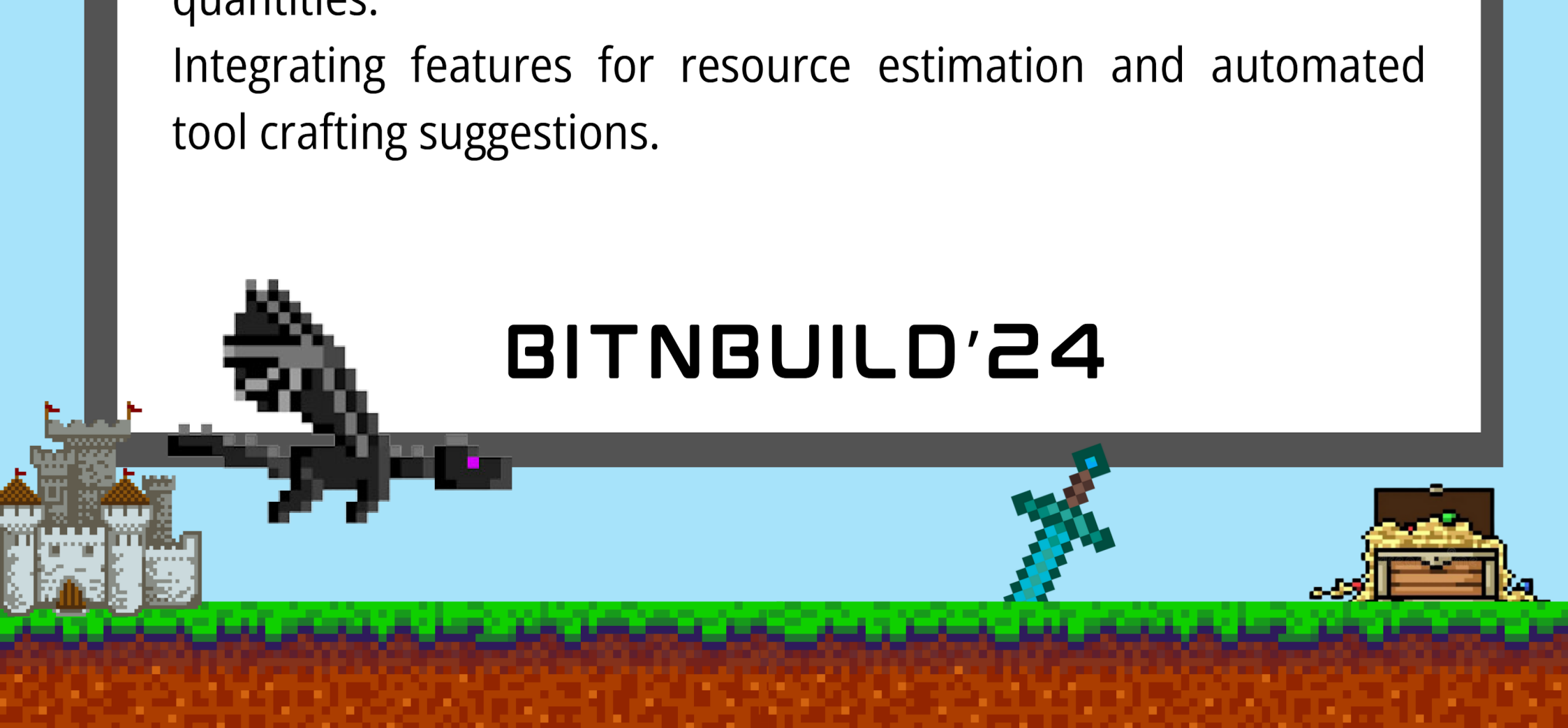


Steve has defeated the EnderDragon and now is in the Overworld (Earth) and is a Farmer and a Trader

a) Smart Inventory System

Problem Statement:
Steve desires a comprehensive Smart Inventory System to optimize his farming activities. The system must include an intelligent inventory management solution for seeds and tools required for farming. Additionally, it should keep track of the resources needed for crafting tools and other farm-related items.

Key Challenges:
Designing an intuitive and user-friendly interface for Steve to manage his inventory efficiently.
Implementing real-time tracking and updates for seed and tool quantities.
Integrating features for resource estimation and automated tool crafting suggestions.

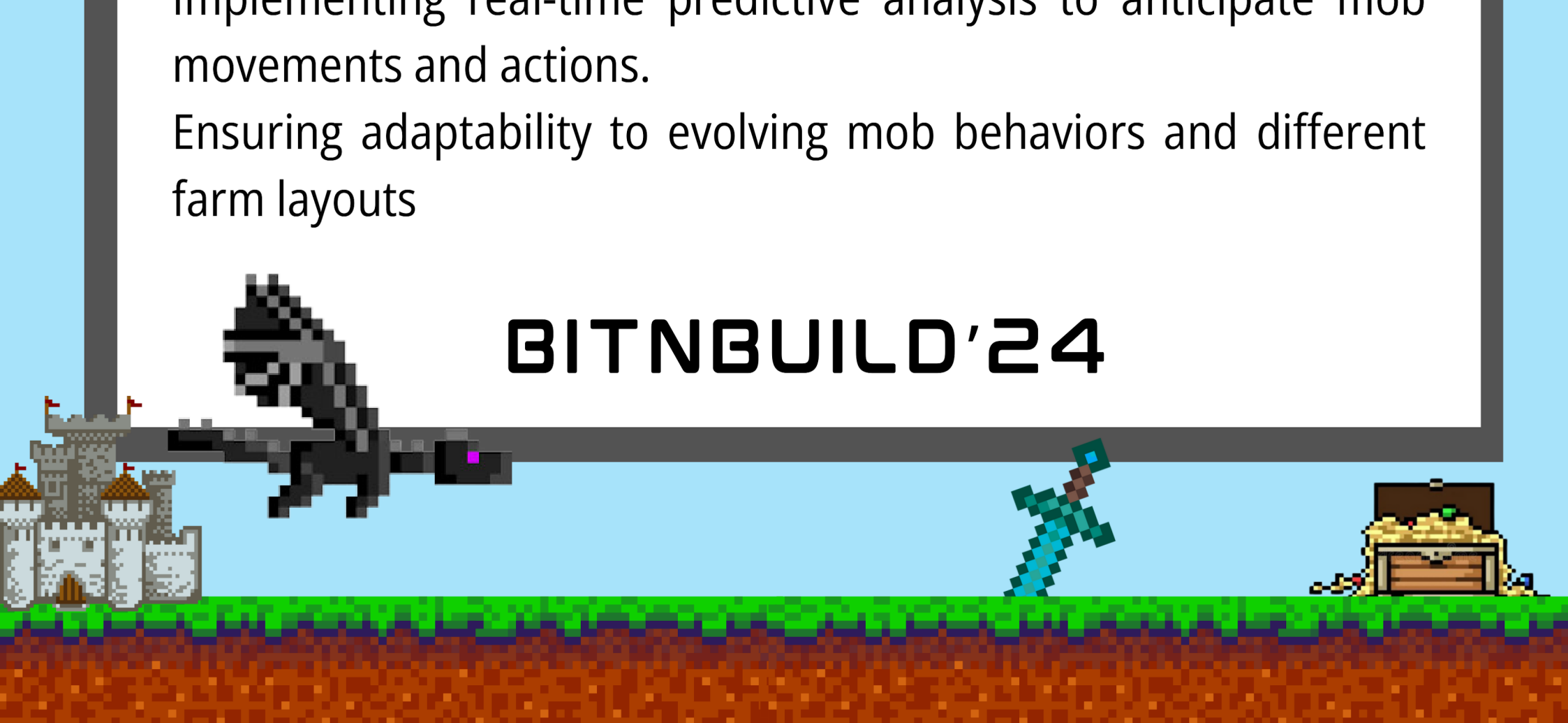


Steve has defeated the EnderDragon and now is in the Overworld (Earth) and is a Farmer and a Trader

b) Predictive Mob Behavior Analysis and Farm Defense Optimization

Problem Statement:
Hostile mobs in Minecraft exhibit varying behaviors and attack patterns. Steve wishes to implement Predictive Mob Behavior Analysis to foresee how different mobs might interact with his farm during the night. The objective is to go beyond simple alerts and proactively optimize farm defense mechanisms based on anticipated mob behaviors.

Key Challenges:
Developing Intelligent algorithms for analyzing historical mob behavior data.
Implementing real-time predictive analysis to anticipate mob movements and actions.
Ensuring adaptability to evolving mob behaviors and different farm layouts

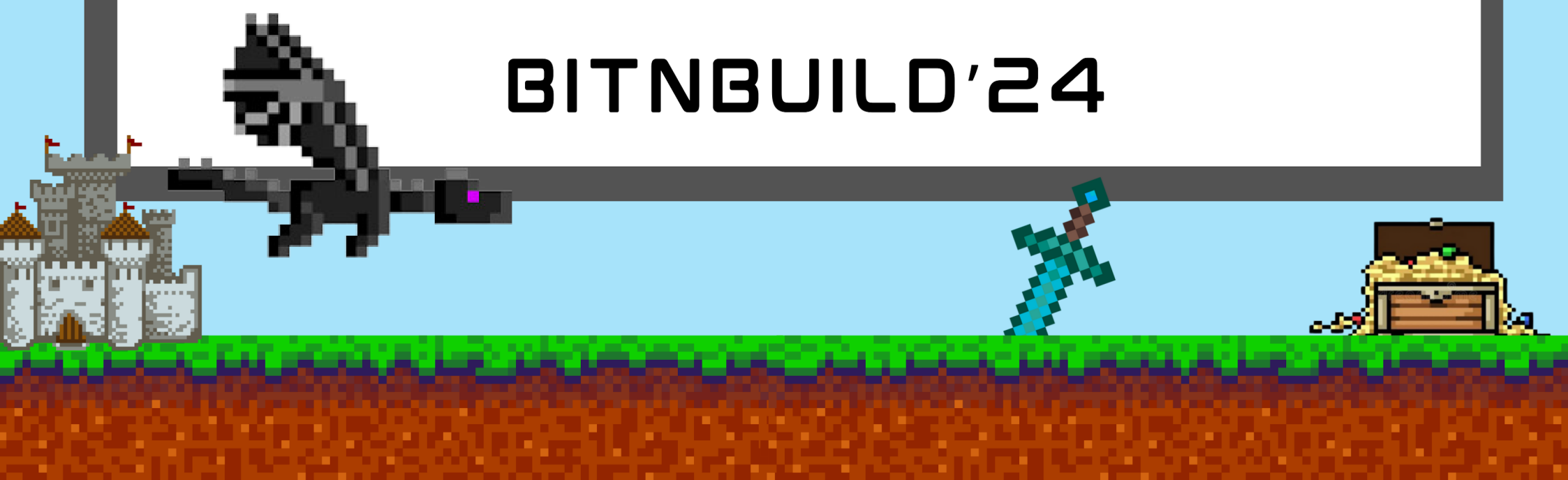


Steve has defeated the EnderDragon and now is in the Overworld (Earth) and is a Farmer and a Trader

c) Farm-to-Traders Tracking System

Problem Statements:
With a successful harvest, Steve aims to establish a transparent supply chain for his farm yields. Steve needs a Decentralized Farm-to-Traders Tracking System to track the journey of his produce from the farm to traders, ensuring transparency, and providing verifiable information about the origin and quality of the products.

Key Challenges:
Implementing a decentralized ledger for transparent and tamper-proof supply chain tracking.
Developing smart contracts to automate and secure the tracking process.
Ensuring the interoperability of the tracking system for seamless integration with traders and other entities in the supply chain.

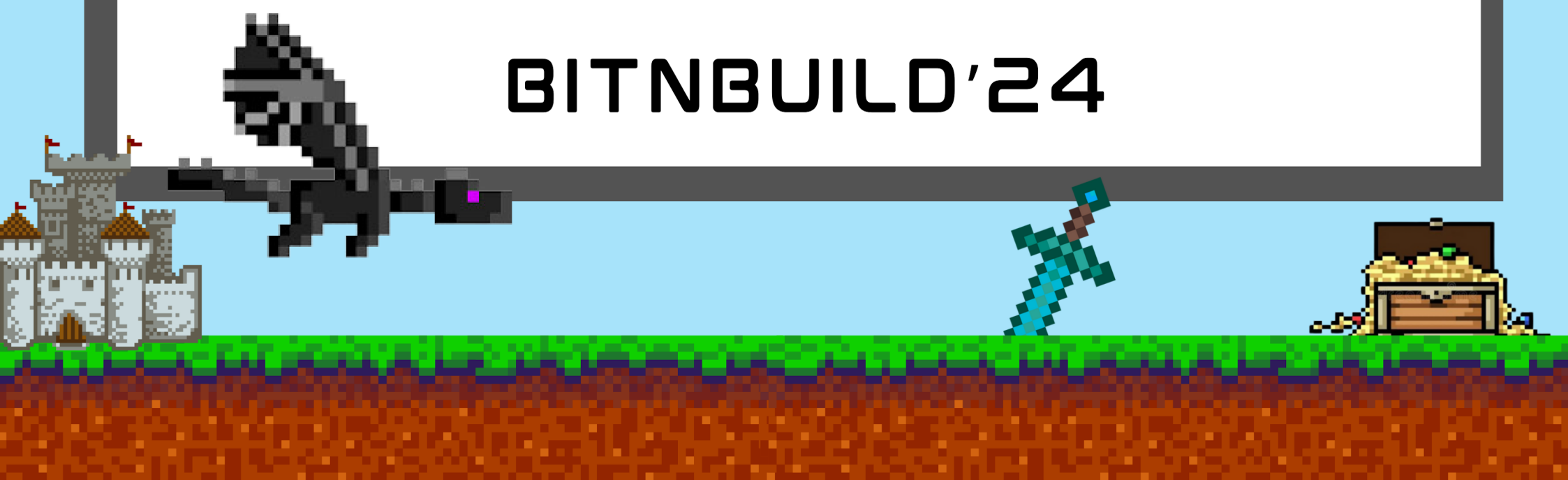


Steve wants to go mining for diamonds in a cave

a) Cave Exploration and Safety Monitoring System

Problem Statement:
Steve requires a dedicated system to aid in cave exploration and safety monitoring. The system should provide real-time information on cave terrain, potential dangers, and optimal paths to maximize resource extraction while minimizing risks. It should also include safety alerts for environmental threats and hostile mobs.

Key Challenges:
Designing a user-friendly interface for efficient cave navigation and exploration.
Implementing real-time safety monitoring features for environmental hazards.
Integrating algorithms for detecting and alerting Steve about the presence of hostile mobs in the caves.



Steve wants to go mining for diamonds in a cave

b) Resource Extraction Optimization System

Problem Statement:
To enhance resource extraction efficiency, Steve needs a system that optimizes the mining process. The system should analyze geological data, predict resource concentrations, and suggest optimal mining techniques to maximize yield and minimize tool wear.

Key Challenges:
Developing Intelligent algorithms for analyzing geological formations and identifying resource concentrations.
Implementing real-time resource extraction optimization based on predictive modeling.
Ensuring adaptability to different cave structures and varying resource distributions.

Steve wants to go mining for diamonds in a cave

c) Resource Tracking and Verification System

Problem Statement:
To establish the legitimacy and provenance of extracted resources, Steve requires a Resource Tracking and Verification System. This ledger will provide a tamper-proof record of each mined resource, ensuring transparency, authenticity, and facilitating secure trading or crafting.

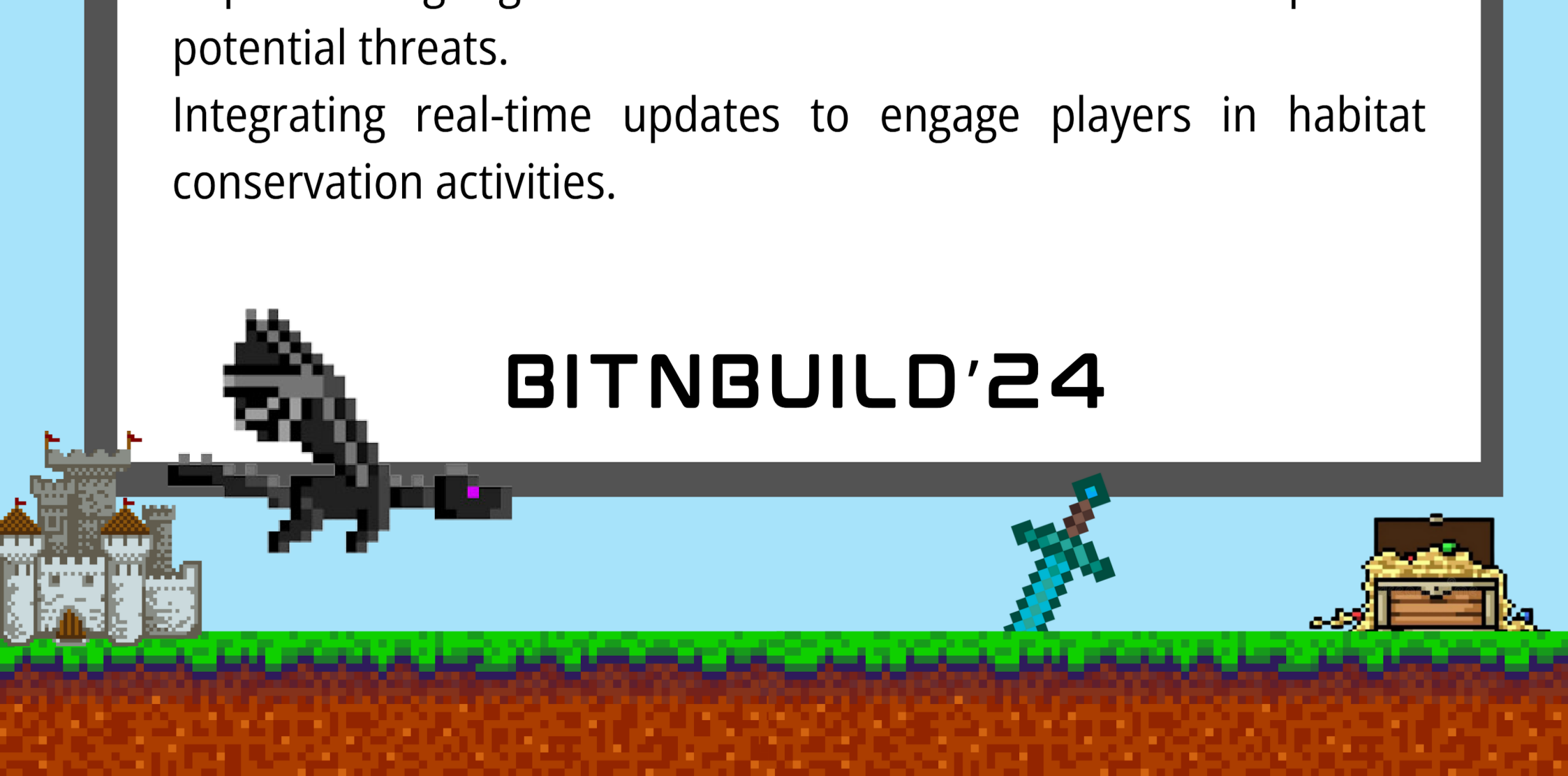
Key Challenges:
Designing a decentralized ledger system for transparent and verifiable resource tracking.
Implementing smart contracts to record and validate each mined resource.
Ensuring the interoperability of the ledger for seamless integration with trading platforms and crafting systems.

Wildlife of Minecraft

a) Virtual Wildlife Habitat Monitoring System

Problem Statement:
The once-thriving virtual wildlife habitats in Minecraft are facing degradation due to changing terrain and hostile mob activities. Steve needs a Virtual Wildlife Habitat Monitoring System accessible through a intuitive interface. This system should provide real-time data on wildlife populations, habitat health, and potential threats, allowing players to actively participate in conservation efforts.

Key Challenges:
Designing an intuitive interface for monitoring virtual wildlife habitats.
Implementing algorithms to assess habitat health and predict potential threats.
Integrating real-time updates to engage players in habitat conservation activities.



Wildlife of Minecraft

b) AI-Powered Wildlife Protection Rangers

Problem Statement:
Hostile mobs and unintentional player actions pose threats to virtual wildlife in Minecraft (Iron Golem). Steve aims to implement AI-powered Wildlife Protection Rangers – autonomous entities within the game that actively patrol and protect endangered species. These Rangers should intervene to prevent aggressive mob attacks and player actions that endanger wildlife.

Key Challenges:
Developing Intelligent algorithms for Wildlife Protection Rangers to recognize threats.
Implementing real-time intervention strategies to deter hostile mobs.
Ensuring Rangers' adaptability to different virtual landscapes and wildlife behaviors.

Wildlife of Minecraft

c) Virtual Wildlife Census and Conservation Rewards System

Problem Statement:
To encourage active player participation in wildlife conservation, Steve envisions a Virtual Wildlife Census and Conservation Rewards System. This system will incentivize players to contribute to wildlife protection by conducting virtual censuses, reporting threats, and actively participating in habitat restoration initiatives.

Key Challenges:
Designing a decentralized ledger for transparent and tamper-proof wildlife census data.
Implementing smart contracts to reward players for positive contributions to conservation.
Ensuring the interoperability of the decentralized system for seamless integration with in-game rewards and achievements.