



BALL ISLAND

Final report:
Client-server game architecture



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Unity
MongoDB

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Database &
Storage



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Video Demo



Member



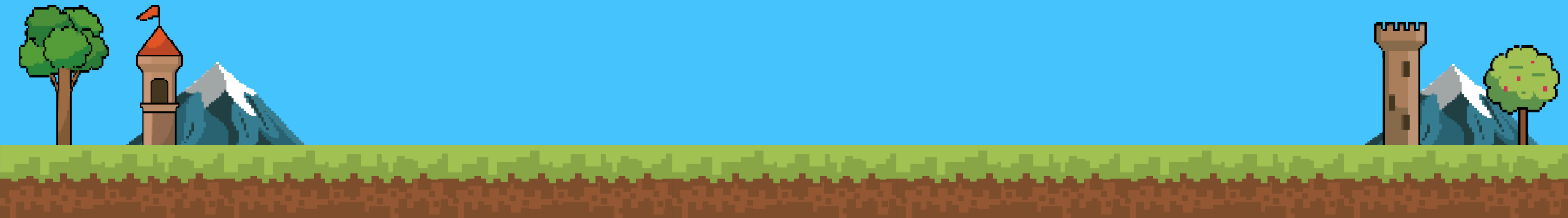
Tran Thanh Loi
21522296



Huynh Dinh Khai Minh
21521123



Nguyen Nguyen Duy An
21520546



A pixel art landscape featuring a bright blue sky with two white, pixelated clouds. In the center, a large white rectangular sign with a black border and a slight 3D effect displays the word "Software" in a black, monospaced, pixelated font. The background consists of three blue mountains with white, pixelated snow on their peaks. In the foreground, there is a green grassy field and a brown dirt ground. On the left, a brown stone tower with a red conical roof and a small orange flag on top stands next to a green tree. On the right, another brown stone tower with a crenelated top stands next to a smaller green tree.

Software

Advantage



01.

Language support

Unity support C#.
With C# .NET library

03.

Multi-Platform

The game developed can run on most OS
as Desktop or Mobile or Web.

02.

Editor

Developer can drag and drop, change
the position of each
Objects in the Game directly on the
Editor

04.

Free😊



Advantage

01.

NoSQL

03.

Cloud Database



mongoDB

02.

Bson structure object

Binary type of Json

=> Storage more data than JSON

04.

Free😊

A pixel art illustration of a landscape. In the center, a white rectangular board with a black border and a drop shadow contains the word 'Overview' in a black, monospaced font. The background features a bright blue sky with two white, pixelated clouds. Below the sky are blue mountains with white snow-capped peaks. In the foreground, there is a green grassy field and a brown dirt ground. On the left, a brown castle tower with a red conical roof and a small orange flag on top stands next to a green tree. On the right, another brown castle tower with a crenelated top stands next to a smaller green tree.

Overview



Compete with other player

Pick ability object on map and push another player to ocean

Reach to the top of the rank

Top 5 player that have the most point will honored on leaderboard

01.

Idea

Inspired by Snake, Bounce
from Nokia

03.

Gameplay

02.

Game Element

04.

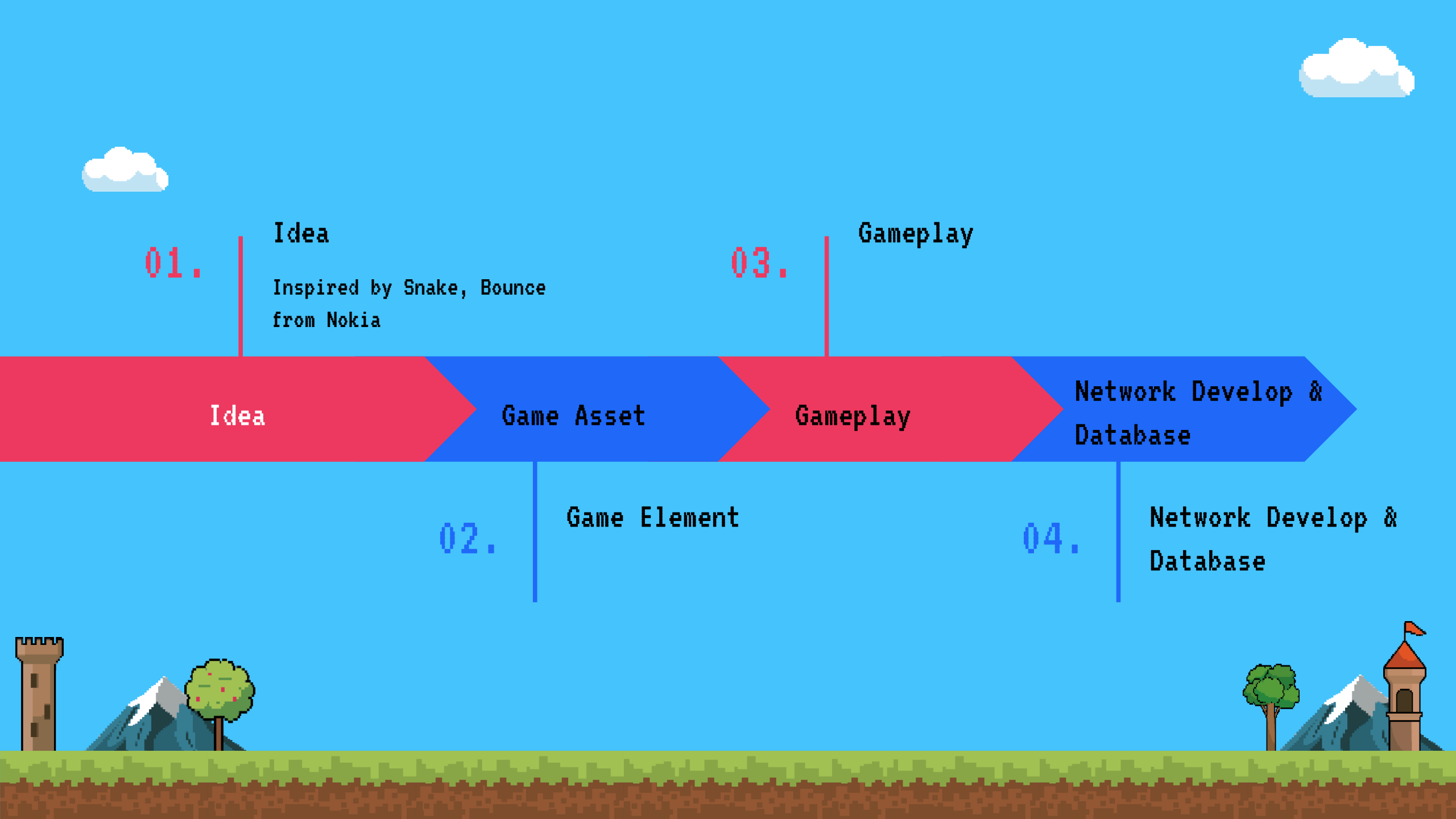
Network Develop &
Database

Idea

Game Asset

Gameplay

Network Develop &
Database

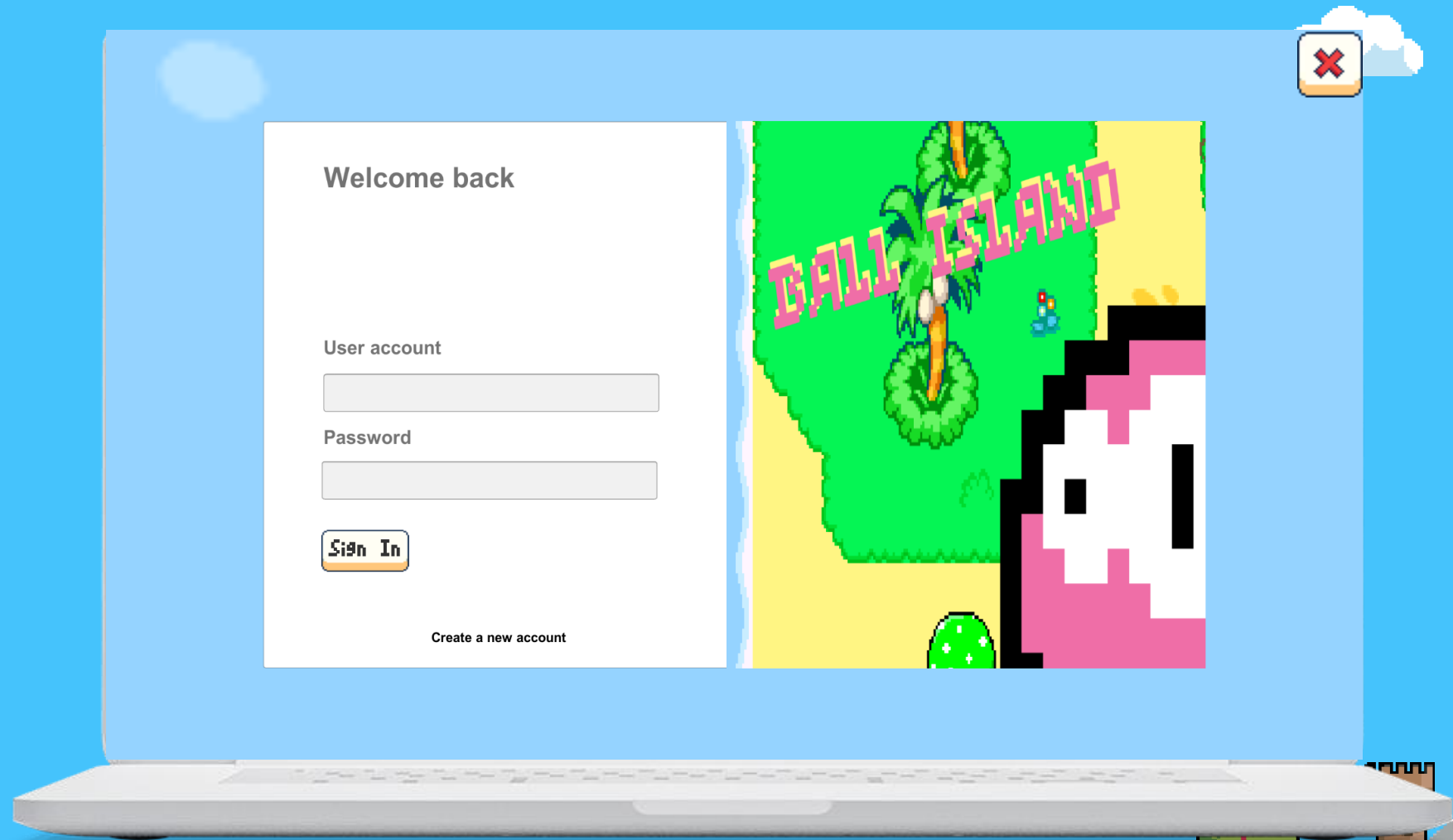


The background is a pixel art landscape. At the top, a bright blue sky contains three white, pixelated clouds. Below the sky, a range of blue mountains with white snow-capped peaks is visible. In the foreground, there is a green grassy field and a brown dirt ground. On the left, a brown castle tower with a red conical roof and a small orange flag on top stands. To its right is a green tree. On the right side, another brown castle tower with a crenelated top stands. A small green tree is also visible near the base of the mountains in the center.

Overview

User Interface

Log in & Register Interface





Join Server & Server
Available Interface

Join Server

IP Address:

Port:

Join game

Server Available

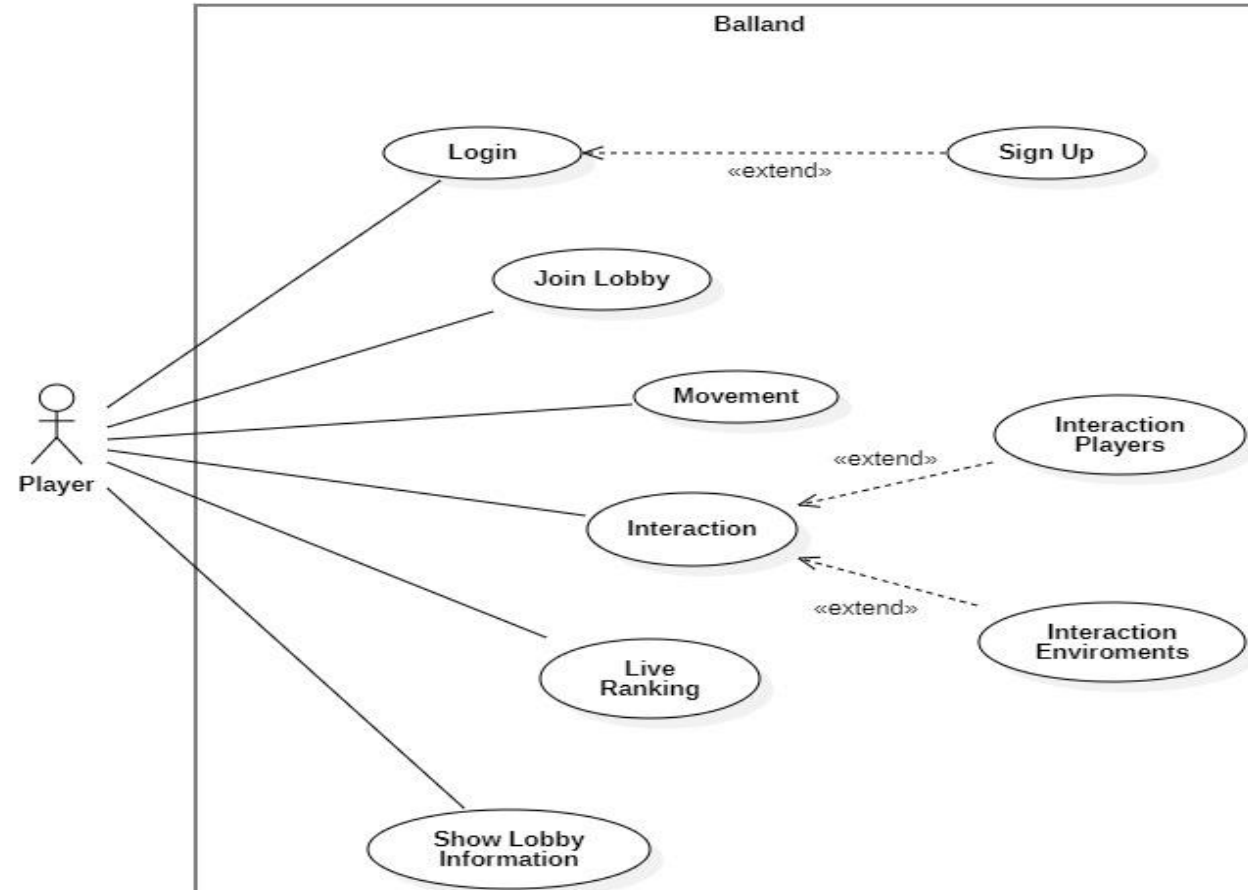
IP: 26.191.34.211

Port: 1604

Map



Game Use Case

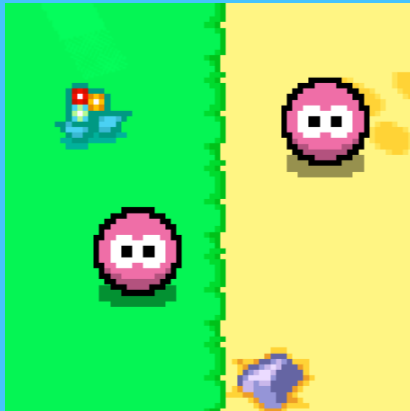




Overview

Game Element

Game Element



Player/Enemy



Ability Object



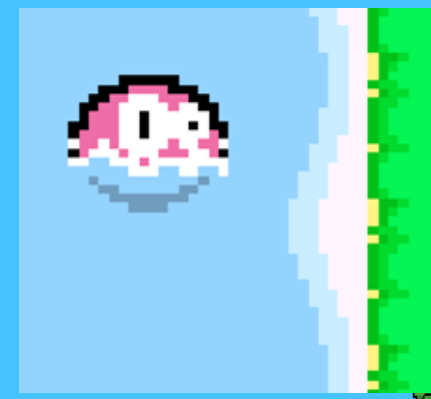
Bouncing Mushroom



Hide on bush



Bot Enemy

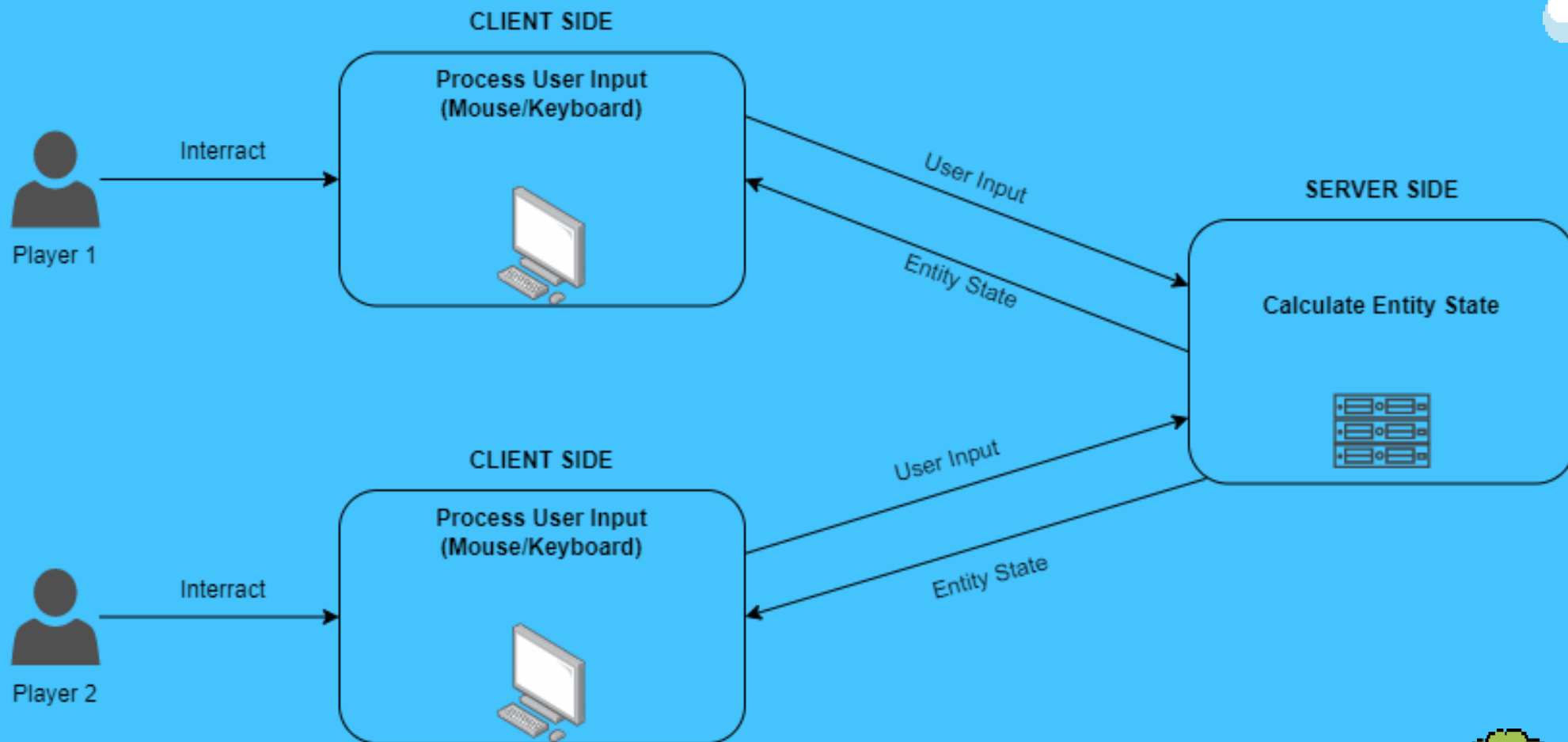


Drown

The background is a pixel art landscape. At the top, a bright blue sky contains two white, pixelated clouds. In the center, a white rectangular box with a black border and a slight drop shadow contains the text 'Network Architecture' in a black, monospaced font. Below the box, the landscape features a green grassy field and a brown dirt ground. In the background, there are blue mountains with white snow-capped peaks. On the left, a brown stone tower with a red conical roof and a small orange flag on top stands next to a green tree. On the right, another brown stone tower with a crenelated top stands next to a smaller green tree.

Network Architecture

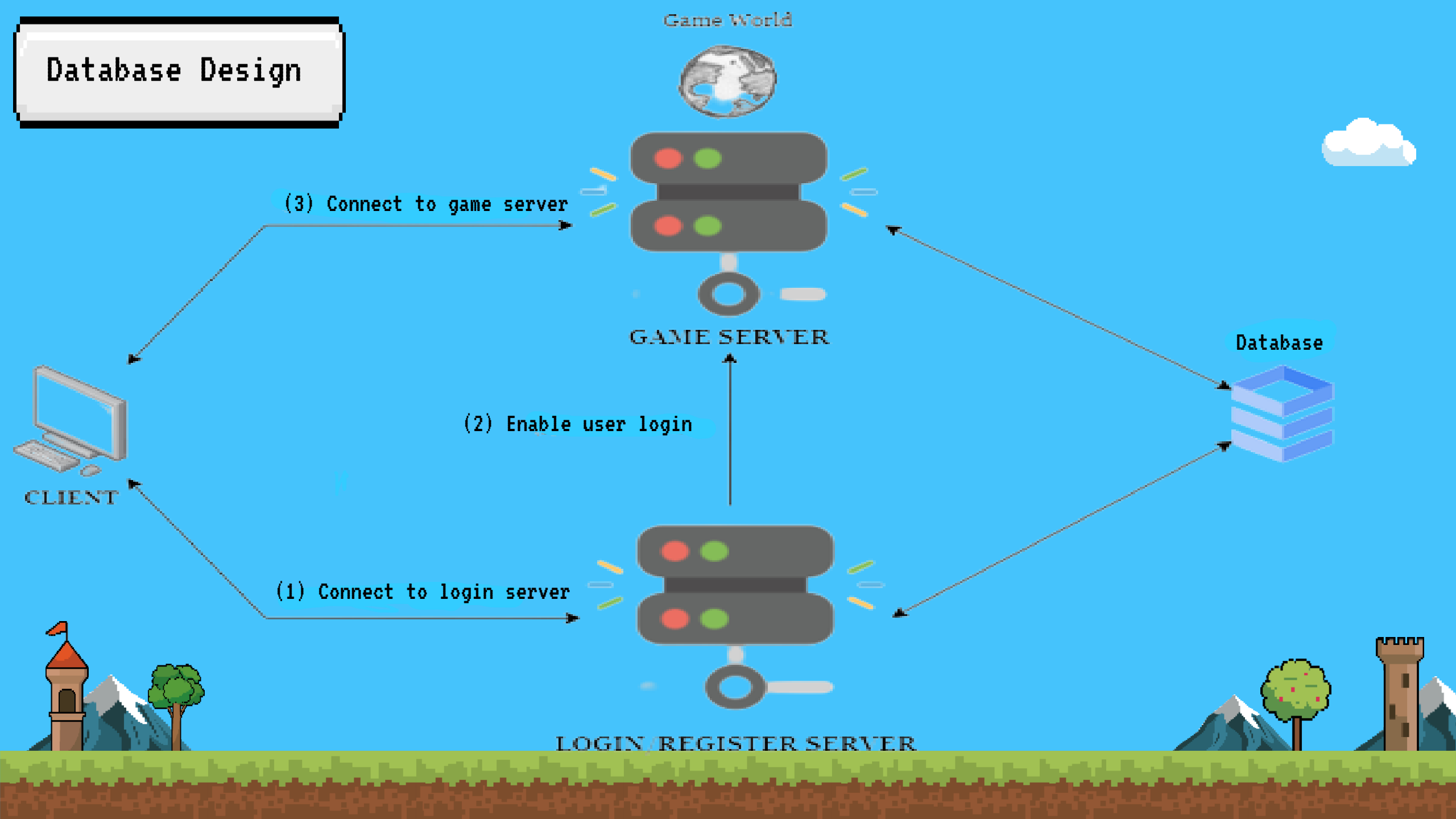
Client - Server Communicate



A pixel art background featuring a bright blue sky with three white, pixelated clouds. In the center, a large white rectangular sign with a black border and a slight 3D effect contains the text 'Database & Storage' in a black, monospaced font. The sign is positioned in front of a range of blue mountains with white, pixelated snow on their peaks. In the foreground, there is a green grassy field and a brown dirt ground. On the left, a brown stone tower with a red conical roof and a small orange flag on top stands next to a green tree. On the right, another brown stone tower with a crenelated top stands next to a smaller green tree.

Database & Storage

Database Design



The background is a pixel art landscape. It features a bright blue sky with three white, pixelated clouds. In the foreground, there is a green grassy field above a brown dirt ground. To the left, a brown castle tower with a red conical roof and a small orange flag on top stands on a hill. To the right, another brown castle tower with a crenelated top stands on a hill. In the background, there are blue mountains with white snow-capped peaks. Two green trees are also visible: one to the left of the central text box and one to the right of the bottom text box.

Database &
Storage

User Account

“

```
_id: ObjectId('646f1bcd3dbacf2aacd75d4e')  
username: "kaimink"  
password: "57484F150FF9D26EA0549E31CF2F5C1767E351BDACA9B554BB530089A1031808"  
salt: "5/25/2023 3:26:53 PM"  
isOnline: "false"  
Point: 2  
Death: 6
```

”

- KaiMink



Database & Storage

Server Management

“

```
_id: ObjectId('646c74c6cca217246c849516')  
IP: "26.191.34.211"  
port: "7777"  
status: "offline"
```

”

- Duukie

The background is a pixel art landscape. At the top, a bright blue sky contains three white, pixelated clouds. Below the sky, a range of blue mountains with white snow-capped peaks is visible. In the foreground, there is a green grassy field and a brown dirt ground. On the left, a brown castle tower with a red conical roof and a small orange flag on top stands. To its right is a green tree. On the right side, another brown castle tower with a crenelated top stands. A small green tree is also visible near the base of the mountains on the right.

Database & Storage

Security



“

```
_id: ObjectId('646f1bcd3dbacf2aacd75d4e')  
username: "kaimink"  
password: "57484F150FF9D26EA0549E31CF2F5C1767E351BDACA9B554BB530089A1031808"  
salt: "5/25/2023 3:26:53 PM"  
isOnline: "false"  
Point: 2  
Death: 6
```

”

- Aku





password

strawberry



hash function

SHA-256



hashed password



5e737f891db1175442a39fd...

password

banana



hash function

SHA-256



hashed password

b493d48364afe44d11c016...

password

kiwi



hash function

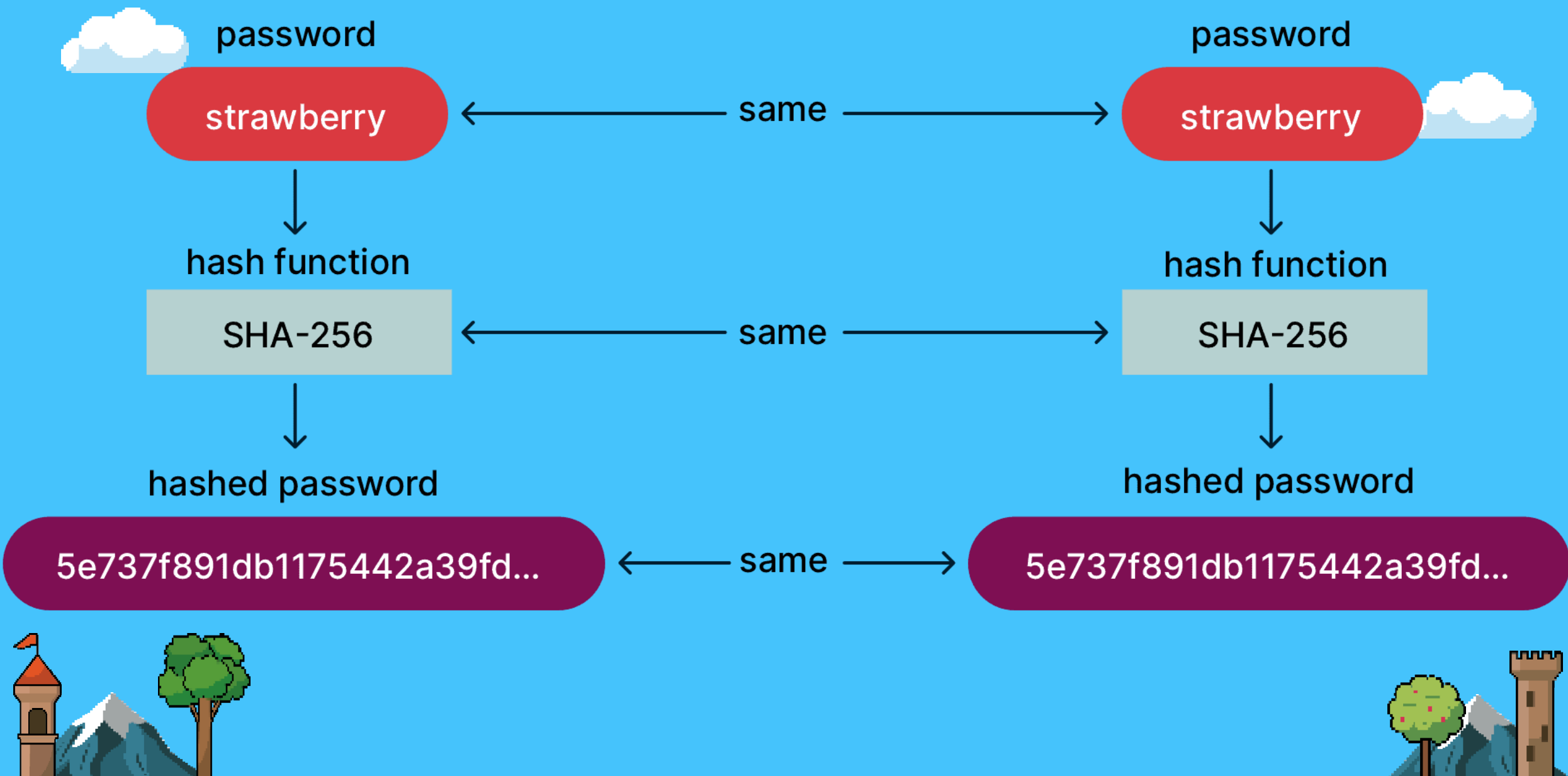
SHA-256

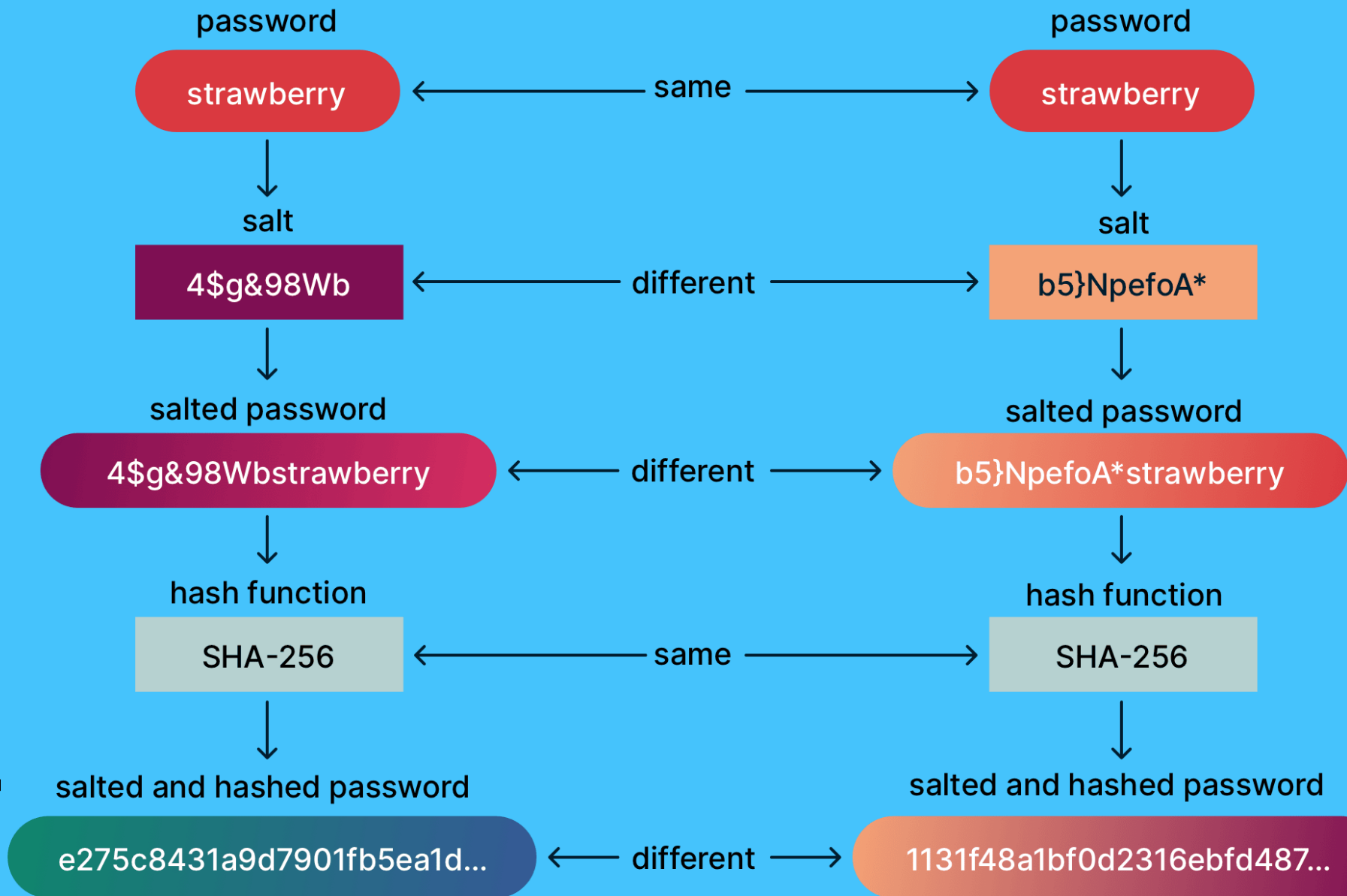


hashed password

1a5afeda973d776e31d1d72...







A pixel art illustration of a landscape. In the center, a large white rectangular sign with a black border and a slight 3D effect displays the word "Thanks!" in a black, pixelated font. The background features a bright blue sky with two white, pixelated clouds. Below the sky, there are blue mountains with white snow-capped peaks. In the foreground, there is a green grassy field and a brown dirt ground. On the left, a brown stone tower with a red conical roof and a small orange flag on top stands next to a green tree. On the right, another brown stone tower with a crenelated top stands next to a smaller green tree.

Thanks!