CMSC 190-2

SP2 PRESENTATION

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SP TITLE

CaveIS: A Culture Collection Information System for Cave Microorganisms in CALABARZON, Philippines

Introduction

Caves

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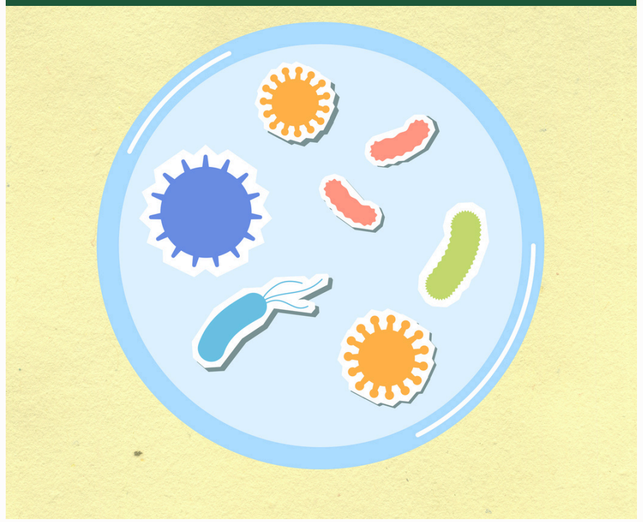
Cave Microorganisms



Cave microorganisms play a crucial role in shaping their habitat's distinctive ecological dynamics.

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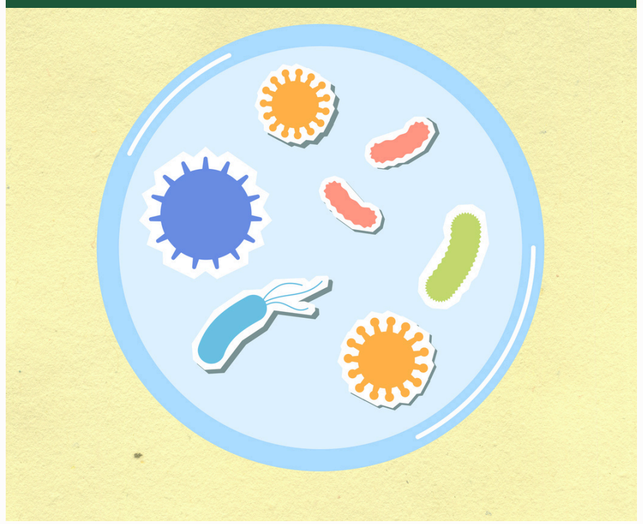

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genetic makeup

metabolic processes

interactions with other organisms

Introduction

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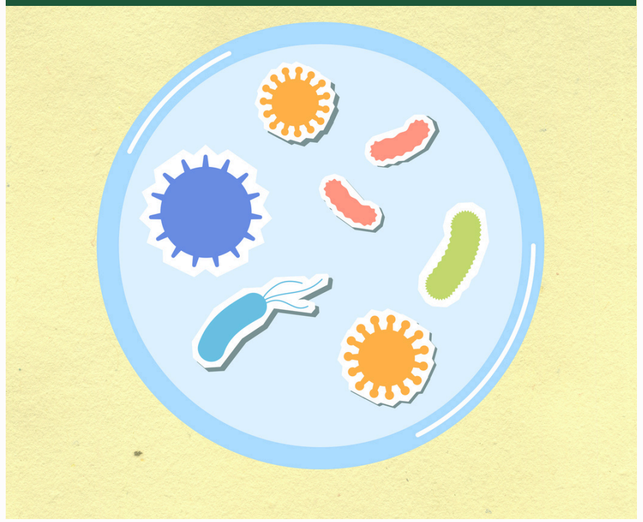
Cave Microorganisms



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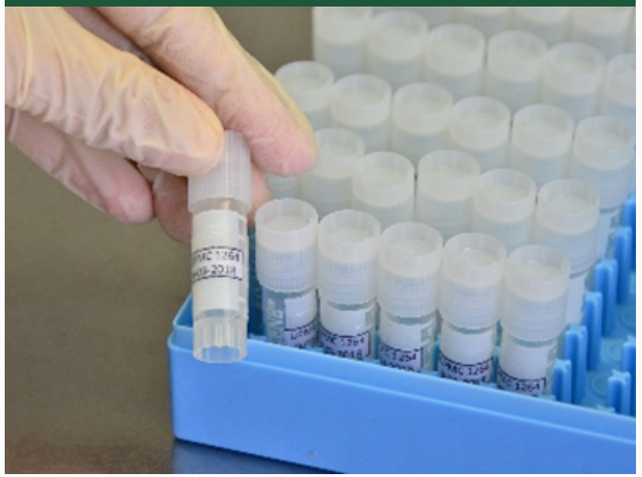
Microbial Culture Collections



Microbial culture collections help preserve knowledge on various cultures and advance microbial research.

Significance

Target

Researchers at the Microbial Culture Collection, Museum of Natural History, University of the Philippines Los Banos (UPLB)

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CavelS

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Online information system containing their findings

Objectives

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Develop a secure and responsive web-based single-page application (SPA) using the selected technology stack

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Develop a secure and responsive web-based single-page application (SPA) using the selected technology stack

Objective 02
Implement an information management system for data collected from caves

Objective 03
Provide a dashboard view to display summary information from the cave study

Methodology

01

The development of the system utilized the following technology stack:

- MySQL for the database
- Express.js for back-end development
- React for front-end development
- NodeJS for server-side code execution

Methodology

02

The web application’s components were hosted across the following platforms:

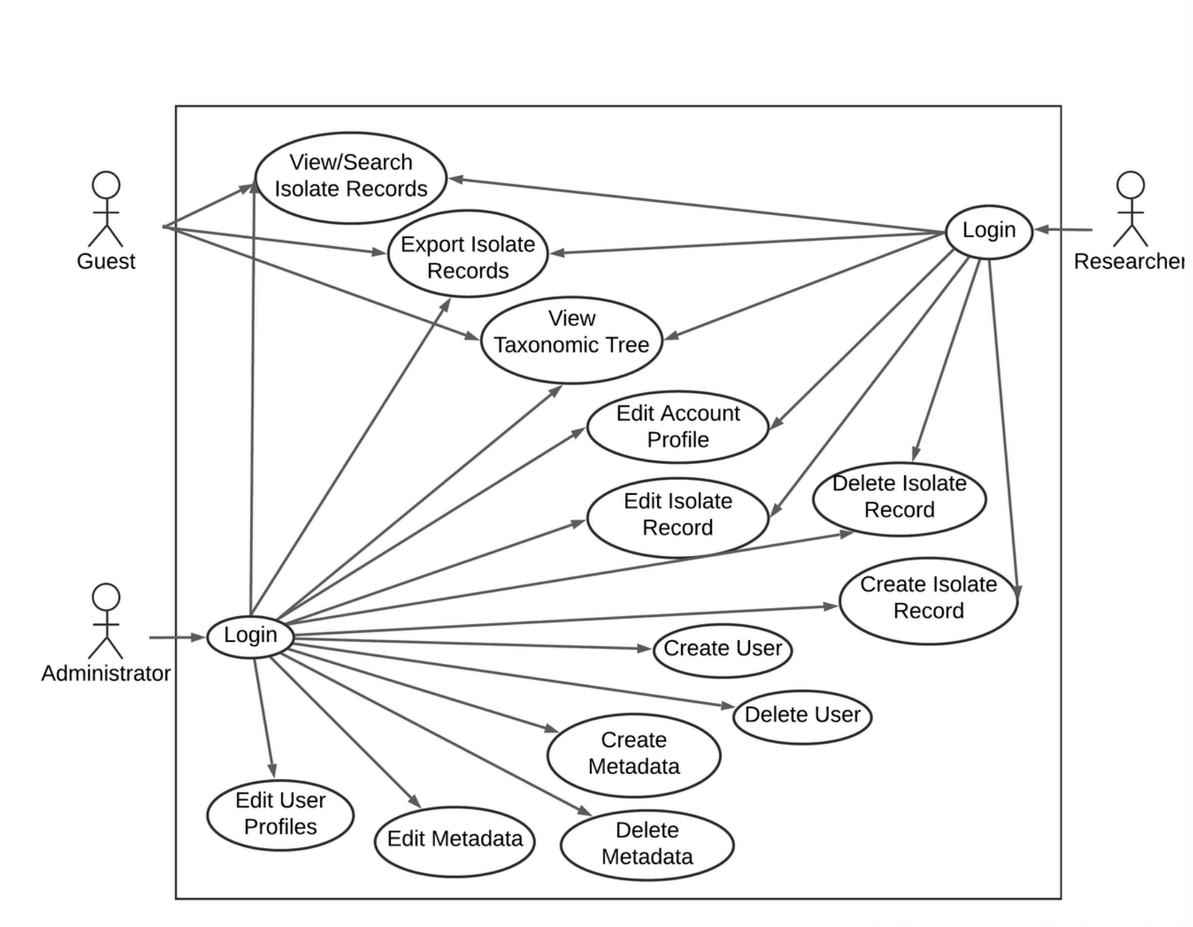
- Aiven for the database
- Render for the backend
- Netlify for the frontend

Methodology

03

The system employed a role-based access control mechanism, defining specific operations and management capabilities for three distinct user levels:

- Guest
- Researcher
- Administrator

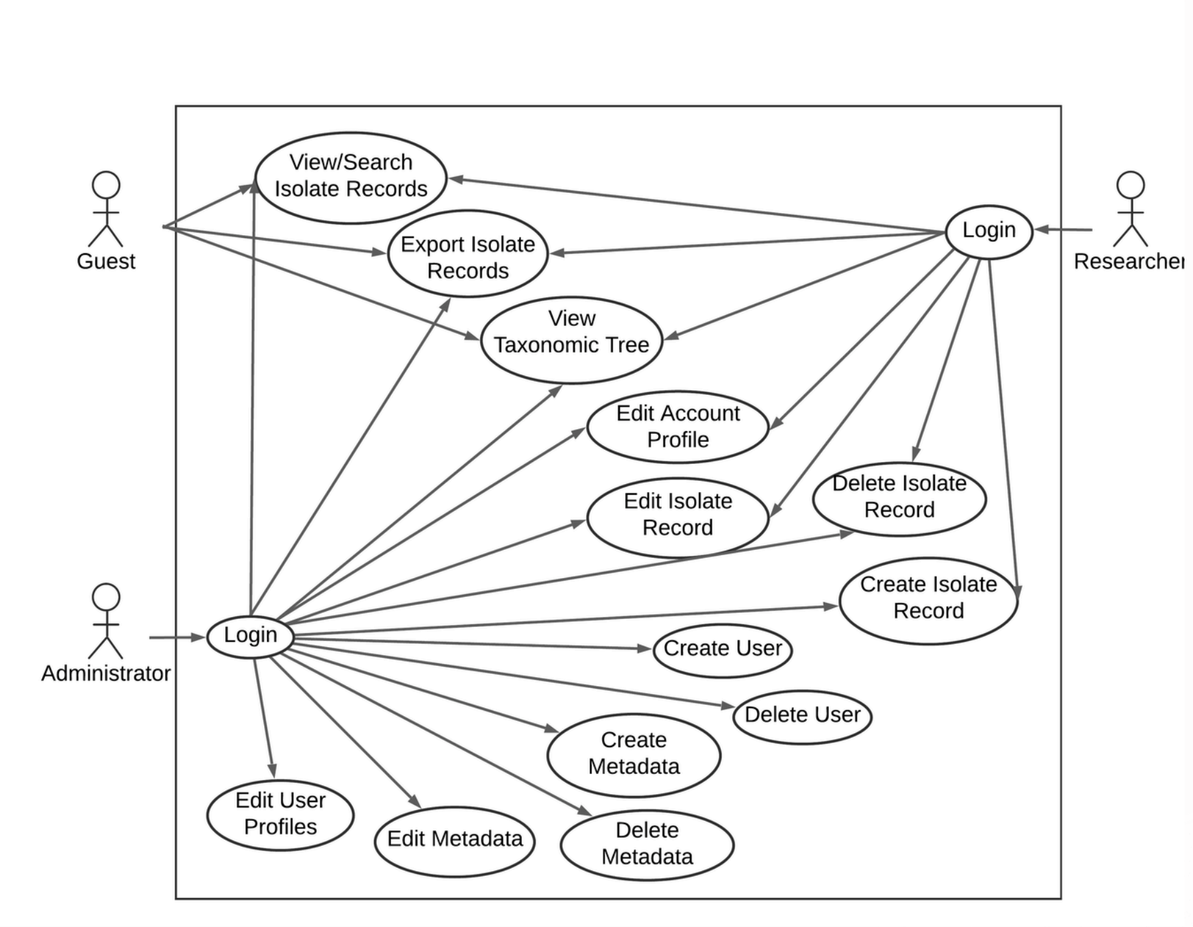


Methodology

04

The features of the application are grouped into three parts:

- User Authentication and Management
- Isolate Management and Exploration
- Isolate Metadata Management



DEMONSTRATION

Results

The testing pool consisted of 8 individuals, including BS Biology students from UPLB and members of the NICER Program: Center for Assessment of Cave Natural Resources (CAVE) in CALABARZON, affiliated with the Microbial Culture Collection, Museum of Natural History, UPLB.

Resp.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Individual Score
1	4	2	5	1	5	1	5	1	4	1	92.5
2	4	1	5	1	4	1	5	1	5	1	95
3	3	1	5	2	5	2	5	1	5	3	85
4	5	1	5	1	4	1	4	1	4	1	90
5	4	1	5	2	5	1	4	1	4	2	87.5
6	4	3	4	2	3	2	3	2	4	3	62.5
7	4	1	5	1	5	1	4	1	5	1	90
8	5	5	5	3	5	3	5	1	4	5	67.5
Mean											83.75

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Average SUS

CONCLUSION

Objectives Satisfied

The study successfully developed a web application that serves as a culture collection information system for cave microorganisms, offering researchers and microbiologists a way to collate their findings on cave microorganism research.

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Successful Test Results

Successful results from the SUS survey and positive feedback from the testers indicate that CaveIS will prove to be useful for both researchers and students in the field of microbiology, facilitating more efficient data management and potentially aiding in the discovery and study of new cave-dwelling microorganisms locally.

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SP PROPOSAL PRESENTATION

Presented by
Keith Florence C. Martin