Valpo Rocks: Geological Specimens Database Project

Daniel Hautzinger, Samuel Gilfillan, Aaron Jaraczewski, Jonathan Robledo, Garrett M. Scheiber

Abstract

This project tasked us with creating a high-usability web application for the Valparaiso University Department of Geography and Meteorology and its geological collection. The application is made using HTML/CSS, PHP, and SQL to hold and display geological specimen data collected by the professors within the Geography Department. The purpose of this application is to allow students and professors to easily store and access data on the rocks and minerals that they collect. The students can input a unique code or keyword into a search bar within the application, or scan a unique QR code to search specimens of minerals within the collection. Once queried, the application displays the mineral’s name, date of collection, whom it was collected by, the region of collection, a description of the mineral, as well as photos of the specimen(s).

Search Features

Users can search using:
- Names
- Types of minerals
- Identification Numbers

Type an ID to search for the Specimen

Valpo Rocks!
Search for an ID

X2020

Future Features

- QR Code functionality
- Embedded reference images
- Google Sheet auto-sync capability
- 3D Model compatibility

Acknowledgements & Tools

Jon-Paul McCool, Assistant Professor of Geography
Geography & Meteorology (Client)

Nick Rosasco, Computing & Information Sciences
(Advisor)

The Specimens

Geography and Meteorology

The University Rock and Mineral Collection, as stored in the Department’s Kallay-Christopher facilities.

Full Stack Software Architecture (“LAMP”)

Database (MySQL) queried by PHP; output as HTML with CSS formatting.
Content presented by Apache 2 webserver running on Ubuntu GNU/Linux version 20.04

screenshots of running application

The University Rock and Mineral Collection, as stored in the Department’s Kallay-Christopher facilities.

Type an ID to search for the Specimen

Valpo Rocks!
Search for an ID

X2020

Future Features

- QR Code functionality
- Embedded reference images
- Google Sheet auto-sync capability
- 3D Model compatibility

Acknowledgements & Tools

Jon-Paul McCool, Assistant Professor of Geography
Geography & Meteorology (Client)

Nick Rosasco, Computing & Information Sciences
(Advisor)

The Specimens

Geography and Meteorology

The University Rock and Mineral Collection, as stored in the Department’s Kallay-Christopher facilities.

Full Stack Software Architecture (“LAMP”)

Database (MySQL) queried by PHP; output as HTML with CSS formatting.
Content presented by Apache 2 webserver running on Ubuntu GNU/Linux version 20.04

screenshots of running application

Type an ID to search for the Specimen

Valpo Rocks!
Search for an ID

X2020

Future Features

- QR Code functionality
- Embedded reference images
- Google Sheet auto-sync capability
- 3D Model compatibility

Acknowledgements & Tools

Jon-Paul McCool, Assistant Professor of Geography
Geography & Meteorology (Client)

Nick Rosasco, Computing & Information Sciences
(Advisor)