Stone Identification App
High-Level Architectural Design

Genevieve Okon (okong), Sydney Lieng(liengsn),
Niko Savas(savasn), Nick Lago(lagond),
Eric Le Fort(leforte)

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1 Introduction

This document will explain the design of the Stone Identification App using, Use Case Diagram, Analysis Class Diagram, Architectural Design and Class Responsibility Collaboration Cards.

1.1 Purpose

The purpose of this document is to describe the design architecture of the Stone Identification App. This will be achieved through a series of different diagrams and analysis techniques. The indented audience for this document is the software implementation team as well as the client.

1.2 System Description

The system that will be discussed in this report is that of the Stone Identification App. The system will be composed of multiple expert classes. Each of these classes will have access to a database containing a list of rocks and the details pertaining to those rocks. When a customer inputs information about a rock the system will use these experts to give a list of possible rocks they may have found. The user will be able to keep information on rocks they have found on a separate database held on local storage devices. The system will be designed as an android application. It will be able to be used on any android devices and will be purchased through the android app store.

1.3 Overview

This document has 4 sections not including this one. Each section either contains design diagrams or an explanation that will further describe the architecture of the Stone Identification App. Each section will provide insight into a key aspect of design with the goal of preparing the software team to implement the design.

- **Use Case:** This document will show who interacts with the system as well as the intended results of those interactions through Use Case Diagrams
- **Analysis Class Diagram:** The Analysis Class Diagram will outline which classes will be a boundary, controller or entity class and show their connections to one another
- **Architectural Design Class:** This section will show the overview of the overall design, and justification for the choice of this design
- **Class Responsibility Collaboration Cards** The use of these cards will show what the classes that make up the Stone Identification App key responsibilities are and what other classes they interact with

2 Architectural Design

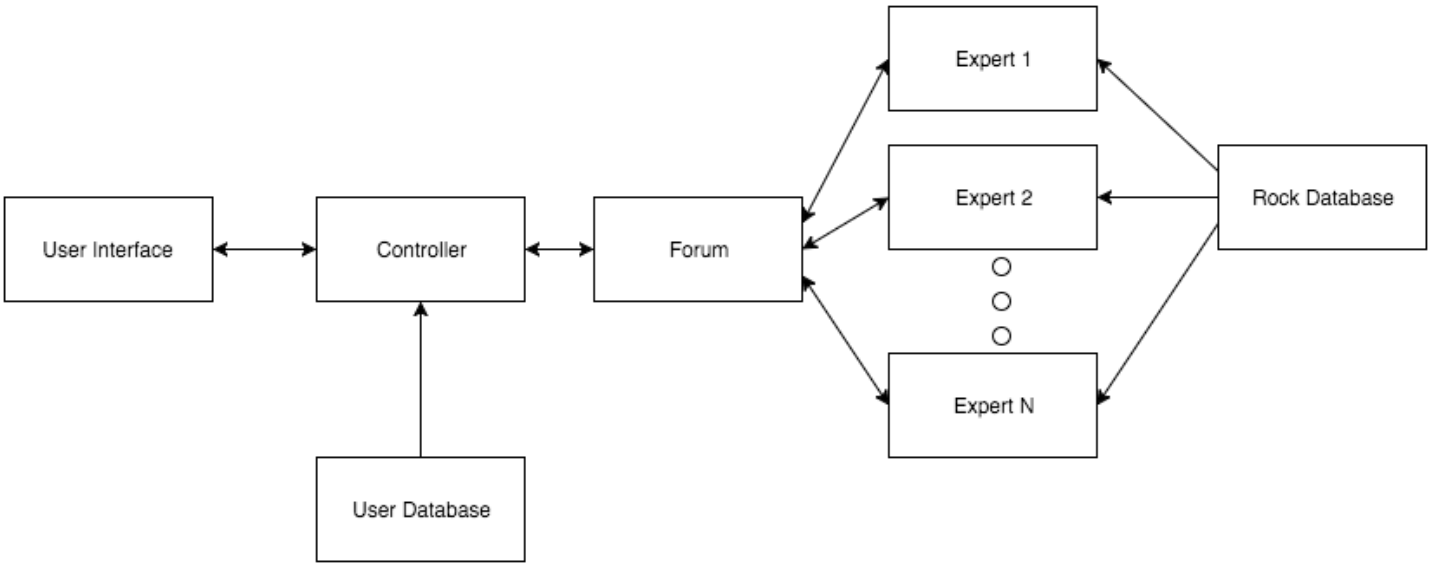
This system will implement a blackboard architecture

2.1 System Architecture

There will be a series of experts that will post the results of their findings to the forum. This forum will be used to consolidate the results. The best rock or rocks will be picked according to how many experts say they are a potential match and then showed to the user.

This blackboard architecture model was originally designed as a way to handle complex, ill-defined problems, where the solution is obtained using the sum of its parts. This model is the best choice for this task since it is designed to handle multiple sources of data and determine its results based off those streams.

The following diagram illustrates the proposed architecture for this system:



2.2 Subsystems

Expert - The experts will take in a criteria such as colour, texture or hardness and return a list of rocks that match that criteria.

Forum - The forum will receive the lists generated by each of the experts and retain those that are common to all lists.

Interface - The interface will be used to provide information to, and receive commands from, the user. This system will also

Rock Database - The database will be used to store essential data as well as providing tools to access that data.

User Information Database - The database will be used to store information pertaining to the user as well as providing tools to access that data.

Control - The control will grab data from the forum, clear data on the forum and alter what the forum is asking for.

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Team Member	Task
Nick	Introduction
Niko	Use-Case Diagrams
Genevieve	Analysis Class Diagram
Eric	Architectural Design, creation of final document
Sydney	CRC Cards