# Emoji Checker System

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## Introduction

Our project is a collaborative effort between three software engineering teams that implemented a backend RESTful API system, an administration application, and a frontend Android application to record and monitor students' emotional responses towards the course content. It represents a simulation of real-world software development practices as fifteen CS students worked together to accomplish a large software project with a bigger scope than any individual teams. This project is a key part of the Software Engineering course and takes an innovative approach to development compared to the other software engineering groups, which are responsible for creating stand-alone software rather than a system of applications that is a product of teamwork and collaboration.

Together, we created the Emoji Checker System, which allows professors to monitor students' responses at various times to keep track of their emotions throughout the duration of the class. Student emotions are an important piece of information to understand the effectiveness of course content and curriculum and students' understanding of their material. According to Thomas Goetz, "recordings of student emotions are important because it is directly related with students' well-being, and it is directly related with students' learning and achievement." [1] The system, therefore, serves as a powerful data analysis tool for professors to enhance the learning experience of their students and provides them with the ability to schedule and monitor student responses and notify students through an SMS message to submit their responses.

## Individual System Components

**Administration Team**

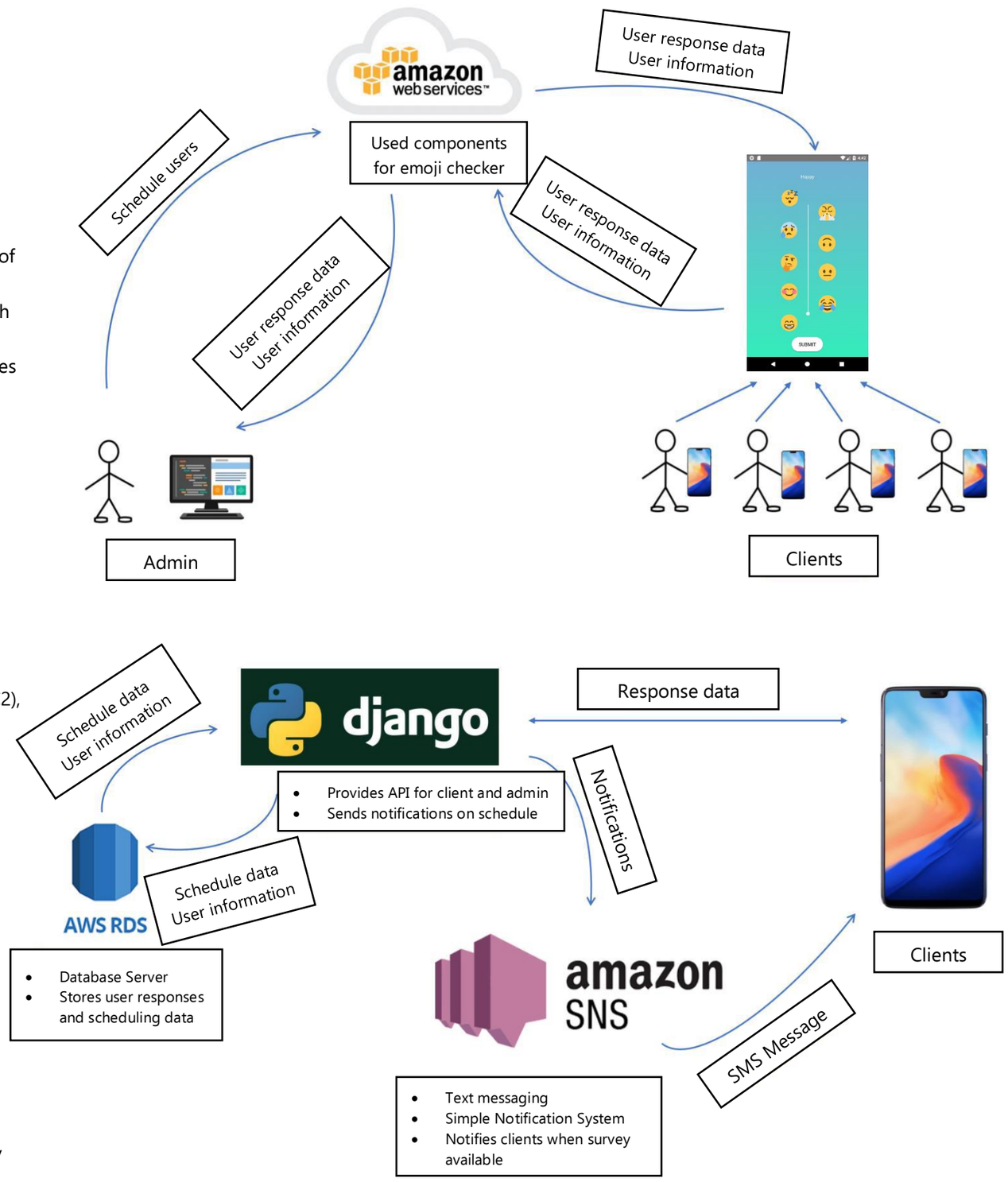
- Developed the administration app, which allows admins to view users' data added through the Android app, schedule a list of users for specific times, and export the data into a CSV file
- Programmed in Java using JavaFX to create simple, single stage table view
- Implemented a slightly modified Model-View-Controller architecture (MVC) allowing efficient parallel development within the team

**Backend Team**

- Implemented the backend portion using Amazon Web Services (AWS), specifically Elastic Compute Cloud (EC2), Relational Database Service (RDS), and Simple Notification Service (SNS), which use the Django REST Framework to interact with other parts of the system
- Currently hosts and manages the database and all other server-side processes that the front-end and administration teams interact with
- Enabled communication for frontend and backend teams through HTTP requests made to Django's REST framework, which interact with the various AWS components of the system

**Front-End Team**

- Developed the Emoji Checker Android application using Android Studio with Java and XML, which allows students to record and logs their emotions towards the course content by selecting an emoji that best describes their feelings/attitude
- Established a connection to the database using Android Studio's Volley Library as the communication link to the back-end RESTful API on Django
- Integrated additional features, such as View Previous Emojis, that allows students to view their previous responses to better prepare for their course and upcoming exams




## References

[1] Goetz, Thomas, et al. "Academic emotions from a social-cognitive perspective: Antecedents and domain specificity of students' affect in the context of Latin instruction." *British Journal of Educational Psychology* 76.2 (2006): 289-308.