

**California State University San Bernardino  
School of Computer Science & Engineering  
Masters Project Presentation**

**Date/Time  
Spring 2020**

**Location  
<https://youtu.be/GewPO3ZJcWI>**

**Topic  
Bubble-In Testing System**

**Candidate  
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**Abstract**

Bubble-In is a cloud-based test taking system build for students and teachers. The Bubble-In system is a test taking application which interfaces with a cloud server. The mobile applications have been built for Android and Apple devices and the web server is hosted on Digital Ocean VPS run with Nginx. The Bubble-In application is equipped with anti-cheating mechanisms such as question-answer key scrambling, not allowing screen shots, screen recording or leaving the application. The tests students take are sent to the web server to be graded and have statistics calculated and displayed in easy to use format for the test creator. Instructors can use the web server to create exams or modify existing exams. This application was developed in Android Studio and XCode. These features were built using Java, Swift, Obj-C, PHP, HTTP requests and MySQL. The application interacts with the database through Nginx web server.