

For many years, teachers have had the tedious task of manually keeping track whether students have attended their classes at university. Some of the most common methods include students writing their name on a piece of paper or a professor filling out spreadsheet cells one by one. Not only are these methods time consuming and old-fashioned, they create additional work for the professor. Our idea intends to change all that!

Our idea came up by basically combining 2 things that already exist. First is a simple barcode scanner app that anyone can download (Gamma Play, 2022). The second is the method used by SSICA, which provides service to many universities by enabling them to scan student cards with a phone or PC (SSICA, 2022). We have combined those in to one! By using barcodes that are generated and printed on our ID cards, which represent our student ID number, we are able to create a modern system which would solve the aforementioned problems. We intend to create a web application that can use the camera of a device to scan the barcode on the student card, therefore being able to recognize the student ID. As each student has a unique ID, all their other information like name, surname, age, etc., is attached to the ID number inside a database. This way, we not only prevent fraudulent attempts for a student to fake his/her attendance, but also we digitalize everything, which prevents wasting paper sheets. On top of all that, the professors are freed from any additional responsibilities. All they would need to do is log in with their created personal accounts, select the course they are currently teaching and let students scan their cards. To achieve our goals, we planned to use the React library for front-end development, the Node.js environment for back-end development and MongoDB database program.

The users will be able to take advantage of the following features:

- View all courses they are assigned to teach (This will be achieved by fetching all courses assigned to the professor inside of a database)
- Register students as present in a class (Their student cards will be scanned using the aforementioned method and it will be stored inside a database which will be visible)
- See whether each student has a satisfactory attendance record (Percentage of attended classes will be calculated for each student individually by taking the number of times a student attended class and divided by the total number of classes, which will be gathered from the student database where attendance is recorded)
- Some other features include: a drop-down panel containing information about the course (class time, room), manual entry of a student in case of damaged card using the students ID number and a full list of present and absent students for a particular day.

References:

- Gamma Play. (2022, February). *QR & Barcode Scanner*. Retrieved from <https://play.google.com/store/apps/details?id=com.gamma.scan&hl=en&gl=US>
- SSICA. (2022). Retrieved from Scan Student Identification Card Authorization: <https://www.drssica.com/>