Tracking The Attendance of Students: The Class Monitor

by Ashton Zac de Veyra and Sean Lester Villarin

Problem Statement:

Manual attendance tracking is **time-consuming, error-prone, and disrupts teaching flow.**

Teachers spend valuable instructional time recording and managing attendance data, often using paper logs or spreadsheets that are easily lost, inconsistent, or difficult to analyze.

As a matter of fact, a study shows that: ***"manual attendance tracking processes have error rates ranging from 1-3%, leading to discrepancies in records that demand additional resources for correction"*** *(Paul Organ, 2024)*

Not only is it tiresome for schools, it is also bad for business!

"Manual attendance systems has led to 30% more time spent on payrolling processes, and 1-3% of total payroll is erroneous" (Tarkie, n.d.)

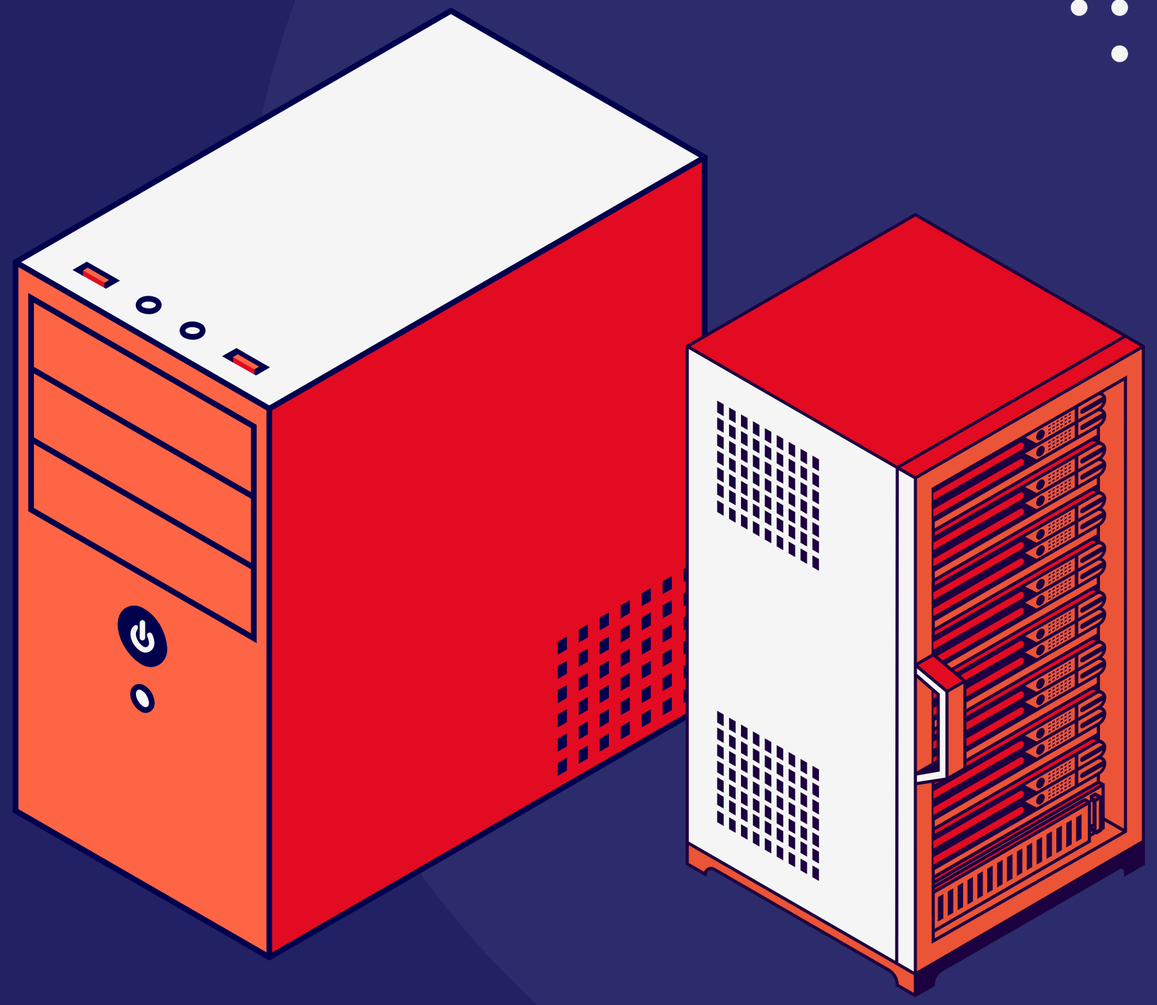
Problem Statement:

That is why we came up with a program that automates the tracking of attendance, which we call as the “Class Monitor”

Objectives

Our programs aims to complete the following objectives:

- **Automate the tracking of attendance, making manual tracking unnecessary**
- **To improve the accuracy and reliability of attendance records**
- **To enhance transparency and tracking of student participation**
- **To automate the storage and organization of attendance data.**
- **Keep inputs and outputs clear, for a friendly user-interface**



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Features

We plan to have the following features in our program:

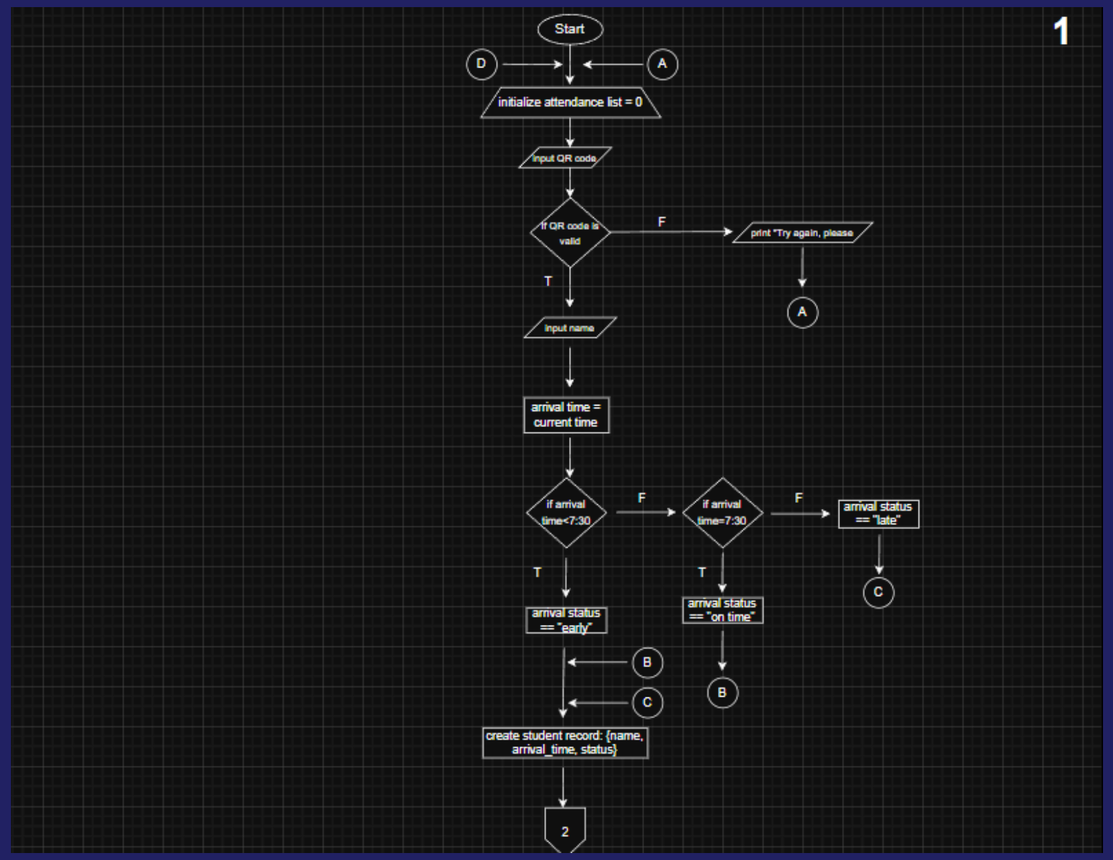
- **Let the student scan a QR code via a scanner that will be implemented**
- **Determine the nth position of the student**
- **Compare time of arrival with the set time of 7:30**
- **Determine arrival status (early, on time, late)**
- **Store attendance records**

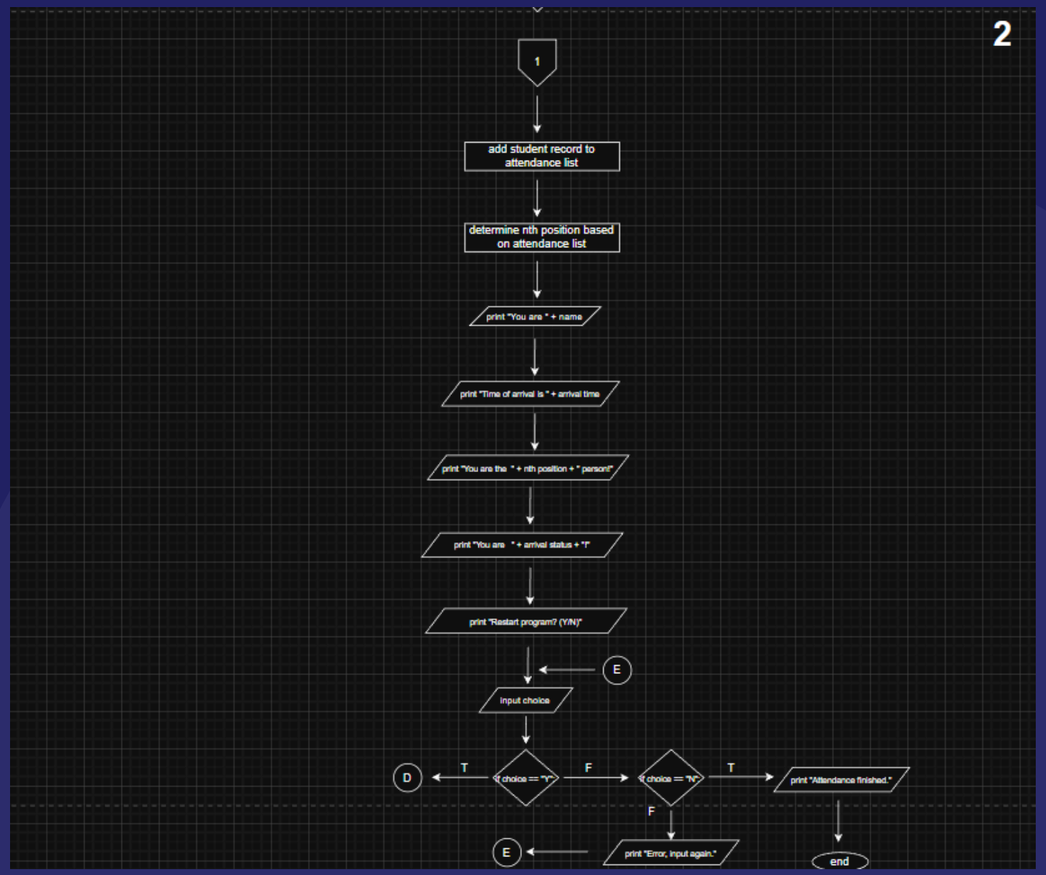
Inputs and Outputs

Students will use a **QR code**, that will be scanned to begin the tracking of their attendance. Afterwards, it will ask for your name.

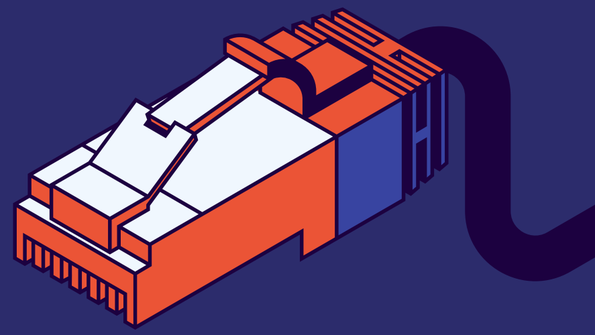
Based on previous students' check-ins, it will display your nth position in line, with the 1st being the earliest and first tracked attendance. Finally, it will display whether you are early, on time, or late using the datetime module to compare the current time with the set time of 7:30

Logic Plan: Process Flow Diagram





Logic Plan: Pseudocode



START

Initialize attendance_list as
empty

Display "Scan QR Code"
Wait until QR code is scanned

If QR code not valid:
  DISPLAY "Invalid QR Code"
  GO BACK to "Scan QR Code"

Display "Enter name:"
Input name

arrival_time = current time
_
If arrival_time < 7:30:
  arrivall_status == “early”
Else if arrival_time = 7:30 THEN
  arrival_status == “on time””
Else
  arrival_status == “Late”

length(attendance list) = attendance list + 1

record = {
  name: student_name,
  time: arrival_time,
  status: status,
  position: position
}

Add record to attendance_list

Display "You are " + name
Display “Time of arrival is: “ + time
Disply "You are the" + position + “ person”
Display"You are " + status

END

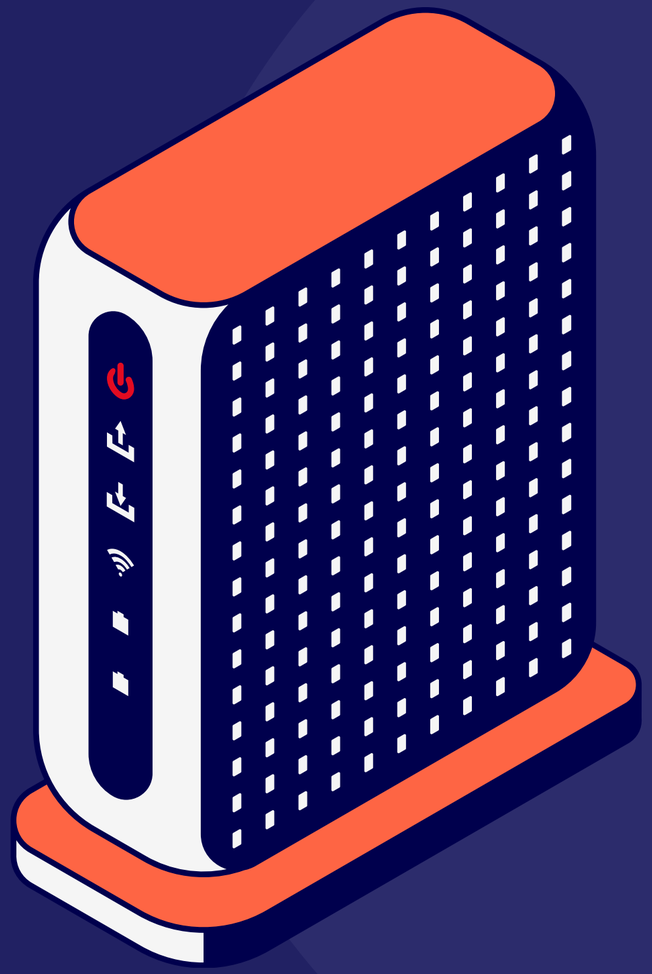
Example Input

Please scan QR code

**QR Code scanned*

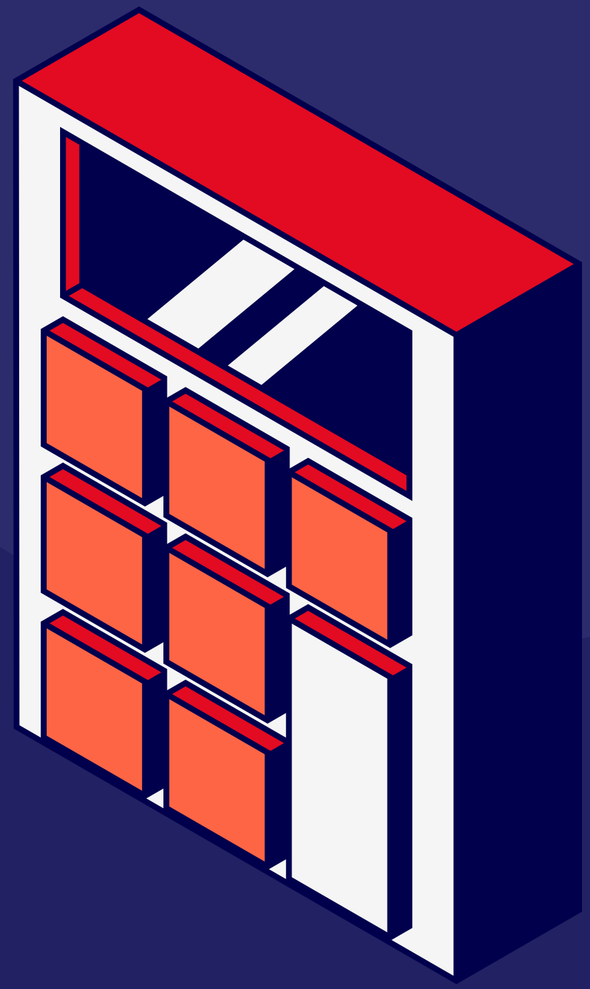
Enter your name: Lester

You are Lester.
Time of arrival is 7:05.
You are the 1st person.
You are early.



Conclusion

In conclusion, this program will overall help decrease the mistakes done in manual tracking, therefore making it unnecessary. We look forward to finishing this program, and we hope it meets the right expectations.



Thank you!