Requirements Specification

Requirements each have a priority listed as (x) at the beginning of the requirement. Priority can range from 1-10 with 10 being the highest priority.

* Functional requirements:
  + Mobile Interface
    - (10) The system shall have an interface accessible through an application available on mobile Android platforms.
    - (10) The mobile interface shall have 3 account options: guardian, teacher, and student.
    - (10) Guardian accounts shall be able to read school data, modify parental controls, and read student tracking.
    - (10) Teachers shall be able to read and write school data.
    - (10) Students shall be able to read school data.
  + Web Interface
    - (10) The system shall have an interface accessible through any common web browser.
    - (10) The web interface shall have the same capabilities as the mobile interface.
  + School Data
    - (10) School data shall contain grades, assignments, tests, classes, attendance, students, and guardians.
      * (10) Grades shall be correlated with assignments and tests.
      * (10) Assignments shall have a grade and a due date.
      * (10) Tests shall have a grade and a date.
      * (10) Classes shall have a teacher and a list of students.
      * (10) Students shall have a list of classes and a list of guardians and their attendance record.
  + Notifications
    - (9) The system shall have the ability to send emails to guardians.
    - (9) Emails shall automatically be sent to guardians when students fail assignments or tests, are tardy, or absent.
    - (6) Guardians shall be able to configure or disable the automatic email system.
    - (6) Teachers shall be able to manually send an email to a given student’s guardians.
  + Student Tracking
    - (10) The system shall automatically record the longitude and latitude coordinates of the student’s device every 15 minutes.
    - (10) The coordinates shall be stored for future access.
  + Parental Control
    - Guardians shall be able to view and manipulate settings on their student’s Android device, if the student also has the mobile application installed.
      * (10) Guardians shall be able to view their student’s past and current location using the Student Tracking.
      * (8) Guardians shall be able to view their student’s text messages.
      * (6) Guardians shall be able to disable applications for given time frames.
    - Levels of Student Behavior
      * (8) The guardian’s application shall be granted access to the student’s device at preset behavior levels.
      * (7) These levels shall be configurable by the guardian.
      * (8) The preset levels shall have defaults depending on the student’s grades, absences, and tardiness.
    - (10) The student’s application shall have a secondary password to prevent uninstallation of the application without the guardian’s consent.
* Non-functional requirements:
  + (10) Data storage
    - All persistent data shall be stored in SQL databases on an IBM cloud machine.
    - Types of data:
      * School data
        + Classes
        + Students
        + Guardians
        + Teachers
        + Grades
        + Absences
        + Tardiness
      * Communications between guardians and teachers
      * Students’ locations
  + (10) The response time shall be low enough to not affect the user experience detrimentally.
  + (9) The system shall securely communicate personal information between the server and clients.
  + (6) The system shall locally store messages to the server while disconnected from the server.
  + (5) The system shall cache data from the server for viewing while disconnected from the server.
* Business Requirements:
  + Need to do these
* Business Process
  + Need to do these
* Technological and Architectural requirements:
  + The mobile interface shall require an Android operating system.
  + The web interface shall require a web browser.
  + All interfaces shall require an internet connection to fully function.
  + The data storage shall require SQL.
  + The server shall require the .NET framework.
  + Any more?