Database Normalization

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Project Description

In the 2014-2015 school year, Stockbridge Valley Central Schools (S.V.C.S.) rolled out a pilot 1:1 Google Chromebook initiative for the freshman class of 2018. This initiative has shown limited success in all subject areas with the exception of the Spanish department. Because of the high level of integration of the Chromebooks demonstrated in Spanish coursework, the district decided to purchase multimedia headsets with headphones for the Spanish department in order to support student audio recording and listening activities using the Chromebooks.

However, because these headsets are now property of the S.V.C.S. Spanish department, it is the responsibility of the Spanish teacher to monitor and track these devices within the classroom. This includes monitoring which student uses which device, any issues that arise in use of the devices, communicating repair needs and status with the technology department, and carrying out any necessary disciplinary action if device issues arise as a result of student misuse.

The following database was created using Microsoft Access in order to facilitate the tracking of these devices within the Spanish department. This database will associate specific devices with specific student users, keep track of check-in and check-out dates and times, and compile data with regards to the repair needs and status of each device. Finally, the database will also serve as a documentation tool for disciplinary action taken, if necessary, as pertaining to student use and possible misuse of the devices. Therefore, it is the goal of the Spanish department to use the database in order to facilitate effective communication between teachers, the technology department, students, and administration regarding the multimedia headsets, while also ensuring that the devices are properly handled.
Normalization

The database will be titled “Spanish Department: Multimedia Headphones Database.” The database will have four categories: Contact, Devices, Issues, and Help. There will be a table for each category, and fields within each table will vary in number depending on the information required.

The Contact table will have four fields: ID, Student Name, Student ID, and Student Email. This will allow the Spanish teacher, Technology Coordinator, and Administrators to access student information with regard to headset use and misuse. The Student ID field will provide ease of access to student information within the school’s Student Information System, SchoollTool, in order to pull up any prior information recorded by teachers. For example, it could be possible that if a student has misused technology devices in another course, the teacher may have recorded that information in SchoollTool previously. This will therefore open up effective communication between all faculty and administration regarding each student in the district. The Student Email serves the purpose of allowing the teacher to send a reminder or communicate with the student if there is a question regarding a device outside of class. The data type for ID will be an automated number, whereas the data type for Student Name will be text. Also, the data type for Student ID will be number, and the data type for Student Email will be text.

The Device table will have four fields: ID, Device ID, Check-In, and Check-Out. This table will allow for tracking of the specific device used by the student. The data type for ID will be an automated number. The Device ID data type will be number, which will correspond to the number on the headset. The data type for both Check-In and Check-Out will be date/time, so that a specific time frame is recorded in which students are using the devices.
The Issues table will have four fields: ID, Problem Description, Repair Status, and Date/Time. This table will allow for open communication and documentation of the measures taken to address any possible issues or damage to the devices. The data type for ID will be an automated number. The data type for Problem Description will be text. The data type for Repair Status will be yes/no, based on whether or not the repair has been completed. Finally, the data type for Date/Time will be date/time in order to document exactly when the issue was resolved.

The Prevention table will have four fields: ID, Student Conference, Student Warning, and Disciplinary Action. This table will document the measures taken in order to prevent further issues with the devices as pertaining to the current issues. The data type for ID will be an automated number. Data types for the remaining three fields will be yes/no dependent on whether or not the specific intervention was necessary and carried out, or not needed for the specific situation.

Summary

Through the creation and implementation of this database, tracking of the new multimedia headsets with microphones for the S.V.C.S. Spanish Department will become much easier. Effective communication will be facilitated between teachers, technology staff, administration, and students in order to ensure that devices are handled properly, and that necessary interventions are conducted in a timely manner.
Appendix A

-Database-
Spanish Department: Multimedia Headphones Database

-Tables-
Contact
Devices
Issues
Help

-Contact Table -- Fields and Data Types --
ID (autonumber)
Student Name (text)
Student ID (number)
Student Email (text)

-Devices Table -- Fields and Data Types --
ID (autonumber)
Device ID (number)
Check-In (date/time)
Check-Out (date/time)

-Issues Table -- Fields and Data Types --
ID (autonumber)
Problem Description (text)
Repair Status (yes/no)
Date/Time (date/time)

-Prevention Table -- Fields and Data Types --
ID (autonumber)
Student Conference (yes/no)
Student Warning (yes/no)
Disciplinary Action (yes/no)