

CS206 – Database Development Plan

Contoso Database Group Project

-Columbia Basin College -

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1. Industry & Company Background

Background:

This relational database was developed for a small non-profit group, Contoso Donation Centers (CDC). CDC is seeking a more automated and efficient way to record volunteer, employee, bike and event information. CDC employees will be utilizing this database at two physical locations, Contoso Main Donation Center West and Contoso Donation Center East. Currently information is being stored using an Excel worksheet and I was informed the level of technological background amongst the employees is limited so they would appreciate an easy-to-use database.

Enhancements Provided:

This database will provide a user-friendly experience to track volunteer, employee and event information. The database will include pertinent employee and volunteer records, such as, personal and contact information, emergency contacts, as well as trainings and events each volunteer and employee has attended. Employee and Volunteer hours can be logged for each event attended and an employee can be assigned to training seminars. Detailed records for each bike can also be tracked with this database, such as, bike information, repairs needed, safety inspections, and event notes.

2. Requirements

Objective:

The objective of this project is to give CDC employees the ability to easily and efficiently maintain records including but not limited to:

- Volunteer Information
- Employee information
- Restoration Event Information
- Bike Information and Maintenance
- Training Seminars
- Employee and Volunteer hours logged for each event.

Database Size:

- There can be an infinite number of Volunteers.
- There can be an infinite number of Employees.
- There can be an infinite number of Events and an infinite number of employees and volunteers attending events.
- There can be an infinite number of Bikes.
- There can be an infinite number of Training Seminars, but only one employee will oversee a particular training.
- There can be an infinite number of logged hours.

3. Conceptual and Logical Designs:

Entities & Tables:

| | |
|-----------------------|--|
| tblAddress | Will keep track of volunteer and employee addresses. One address can be shared by many volunteers or employees. |
| tblEmergencyContact | Will keep track of emergency contacts for each volunteer. One emergency contact can be shared by many volunteers. |
| tblVolunteers | Will keep track of basic volunteer information such as name, date of birth, address, and contact information. In addition, place of employment, medical concerns, liability form signed and other notes. |
| tblRestorationEvents | Will keep track of all event information including its location, date and time of event, and event notes. |
| tblEmployeeEvents | Will keep track of all hours logged by employees per event. |
| tblEmployees | Will keep track of basic employee information such as name, address, and contact information. |
| tblEmployeeTraining | Will keep track of the employee in charge of a training session. Will maintain a record of one and only one employee responsible per training. |
| tblTrainingAttendance | Will keep track of volunteers who attended training. Many volunteers can attend one or more sessions. |
| tblTraining | Will keep track of each training session, its type, date of training, and notes. |
| tblHoursPerEvent | Will keep track of all hours logged by volunteers per event. |
| tblBikes | Will keep track of all bikes and its type, what needs to be repaired, safety checks, and other notes. |
| tblBikeAttendance | Will keep track of all events a bike attends and specific event notes. |

Relational Schema Mapping Normalized:

Jared Yearsley

Jorael Jamison

BOLD Underlined = PK

BOLD Slashed = FK

Address (**AddressID**, Address, City, State, Zip)

EmergencyContactID (**EmergencyContactID**, FName, LName, Relationship)

Volunteers (**VolunteerID**, **AddressID**, **EmergencyContactID**, FName, LName, DOB, EmailAddress, Notes, DateEntered, PreferredContactMethod, Employment, MedicalConcerns, MedicalComments)

HoursPerEvent (**VolunteerID**, **EventID**, TimeIn, TimeOut)

RestorationEvents (**EventID**, EventName, Location, DateOfEvent, Notes, StartTime, EndTime)

EmployeeEvents (**EventID**, **EmployeeID**)

Employees (**EmployeeID**, FName, LName, Address, City, State, Zip)

TrainingAttendance (**SessionID**, **VolunteerID**)

Training (**SessionID**, SessionType, TrainingNotes, TrainingDate)

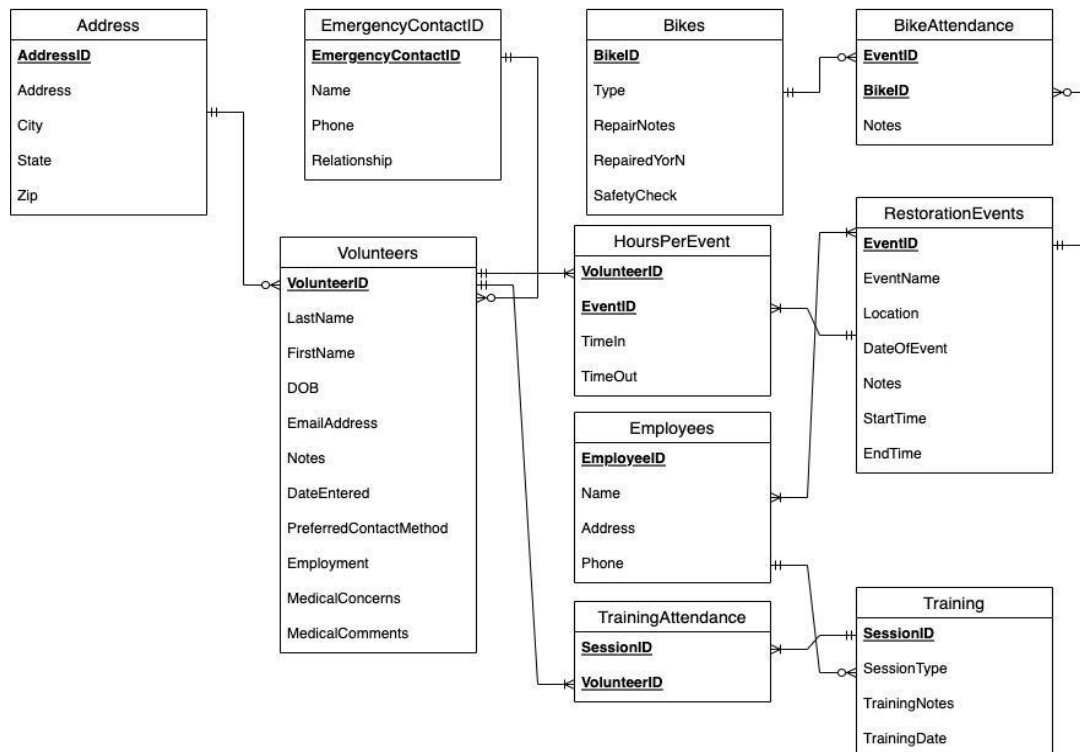
Bikes (**BikeID**, Type, RepairNotes, RepairedYorN, SafetyCheckYorN)

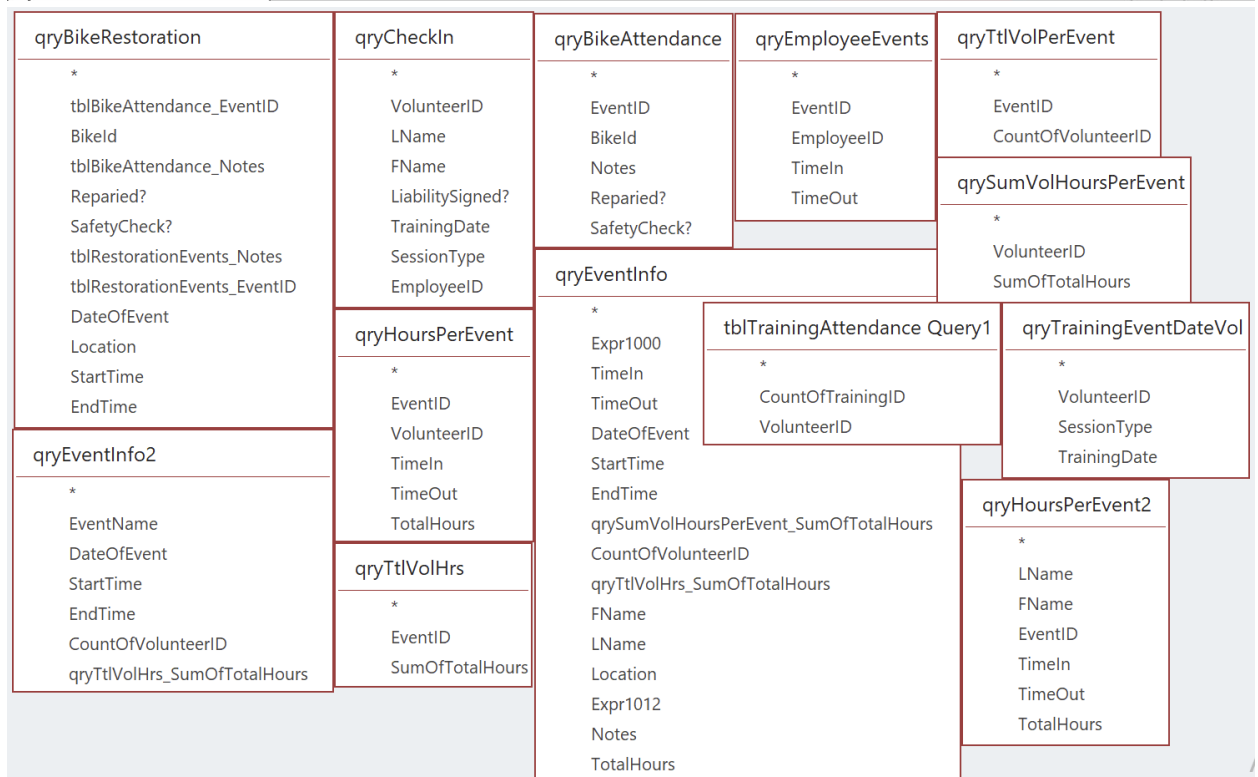
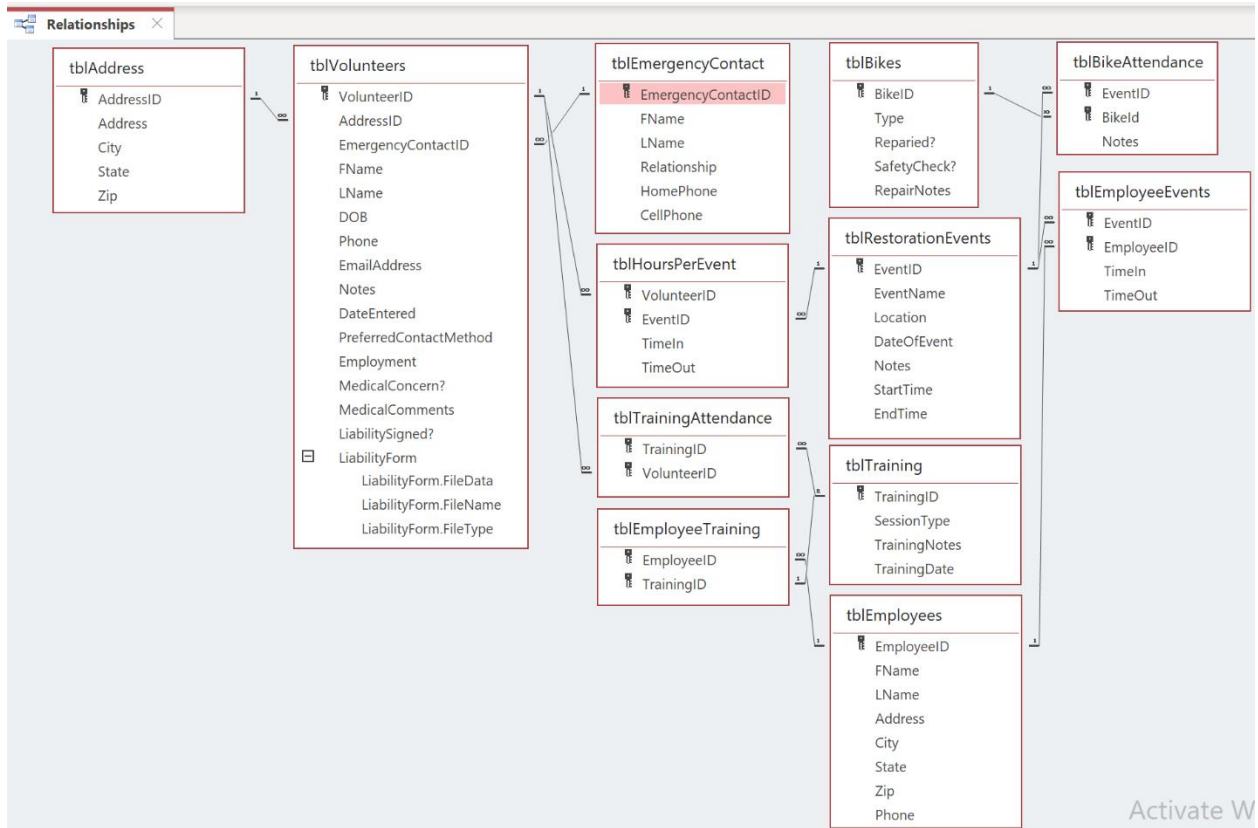
BikeAttendance (**EventID**, **BikeID**, Notes)

Entity Relation Diagram (ERD):

Jorael Jamison

Jared Yearsley





4. Physical Design:

Tables:

1. tblAddress
 - AddressID (Primary Key)
 - Address
 - City
 - State
 - Zip
2. tblBikeAttendance
 - EventID (Foreign Key)
 - BikeID (Foreign Key)
 - Notes
3. tblBikes
 - BikeID (Primary Key)
 - Type
 - Repaired?
 - SafetyCheck?
 - RepairNotes
4. tblEmergencyContact
 - EmergencyContactID (Primary Key)
 - Fname
 - Lname
 - Relationship
 - HomePhone
 - CellPhone
5. tblEmployeeEvents
 - EventID (Foreign Key)
 - EmployeeID (Foreign Key)
 - TimeIn
 - TimeOut
6. tblEmployees
 - EmployeeID (Primary Key)
 - Fname
 - Lname
 - Address
 - City
 - State
 - Zip
 - Phone
7. tblEmployeeTraining
 - EmployeeID (Foreign Key)
 - TrainingID (Foreign Key)
8. tblHoursPerEvent

- VolunteerID (Foreign Key)
 - EventID (Foreign Key)
 - TimeIn
 - TimeOut
9. tblRestorationEvents
- EventID (Primary Key)
 - EventName
 - Location
 - DateOfEvent
 - Notes
 - StartTime
 - EndTime
10. tblTraining
- TrainingID (Foreign Key)
 - SessionType
 - TrainingNotes
 - TrainingDate
11. tblTrainingAttendance
- TrainingID (Foreign Key)
 - VolunteerID (Foreign Key)
12. tblVolunteers
- VolunteerID (Primary Key)
 - AddressID (Foreign Key)
 - EmergencyContactID (Foreign Key)
 - FName
 - LName
 - DOB
 - Phone
 - EmailAddress
 - Notes
 - DateEntered
 - PreferredContactMethod
 - Employment
 - MedicalConcern?
 - MedicalComments
 - LiabilitySigned?

Queries:

1. qryBikeAttendance
- EventID
 - BikeID
 - Notes
 - Repaired?
 - SafetyCheck?

2. qryEmployeeEvents
 - EventID
 - EmployeeID
 - TimeIn
 - TimeOut
3. qryHoursPerEvent
 - EventID
 - VolunteerID
 - TimeIn
 - TimeOut
 - TotalHours
4. qryHoursPerEvent2
 - Lname
 - Fname
 - EventID
 - TimeIn
 - TimeOut
 - TotalHours
5. qrySumVolHoursPerEvent
 - VolunteerID
 - SumOfTotalHours
6. qryTrainingEventDateVol
 - VolunteerID
 - SessionType
 - TrainingDate
7. qryTtlVolHrs
 - EventID
 - SumOfTotalHours
8. qryTtlVolPerEvent
 - EventID
 - CountOfVolunteerID
9. tblTrainingAttendance Query1
 - CountOfTrainingID
 - VolunteerID
10. qryCheckIn
 - VolunteerID
 - Lname
 - Fname
 - LiabilitySigned?
 - TrainingDate
 - SessionType
 - EmployeeID
11. qryBikeRestoration
 - tblBikeAttendance_EventID

- BikeID
- tblBikeAttendance_Notes
- Repaired?
- SafetyCheck?
- tblRestoratonEvents_Notes
- tblRestorationEvents_EventID
- DateOfEvent
- Location
- StartTime
- EndTime

12. qryEventInfo

- Expr1000
- TimeIn
- TimeOut
- DateOfEvent
- StartTime
- EndTime
- qrySumVolHoursPerEvent_SumOfTotalHours
- CountOfVolunteerID
- qryTtlVolHrs_SumOfTotalHours
- Fname
- Lname
- Location
- Expr1012
- Notes
- TotalHours

13. qryEventInfo2

- EventName
- DateOfEvent
- StartTime
- EndTime
- CountOfVolunteerId
- qryTtlVolHrs_SumOfTotalHours

Forms:

1. frmAddNewEmergencyContact: Emergency Contact Form

- Emergency Contact ID
- First Name
- Last Name
- Home Phone
- Cell Phone
- Volunteer ID – Combination of two fields from the Volunteer Table to display the first and last name in one field.
- Relationship

2. frmAddNewEmployee: Add New Employee Form
 - Employee ID
 - First Name
 - Last Name
 - Address
 - City
 - State
 - Zip
 - Phone
3. frmAddNewRestorationEvent: Restoration Event Form
 - Event ID
 - Event Name
 - Location
 - Date Of Event
 - Notes
 - Start Time
 - End Time
4. frmAddNewVolunteer: New Volunteer Form
 - Volunteer ID
 - First Name
 - Last Name
 - Select Address – Contains drop down menu to select address, showing address, city, state, and zip.
 - Address
 - City
 - State
 - Zip
 - DOB
 - Phone
 - Email Address
 - Select Emergency Contact – Contains drop down menu showing first and last name.
 - Relationship to Volunteer – Contains drop down menu with various options to select relationship.
 - Notes
 - Date Entered
 - Preferred Contact
 - Employment
 - Medical Concern?
 - Medical Comments
 - Liability Signed?
5. frmAddTraining: Add Training Form
 - Training ID

- Session Type – Contains drop down menu showing various training session types.
- Training Notes
- Training Date
- 6. frmBikes: Add New Bike Form
 - Bike ID
 - Type – Contains drop down menu showing various bike types.
 - Repaired?
 - Safety Check?
 - Repair Notes
- 7. frmEmployeeEventHours: a subform included in the frmHoursPerEvent
 - Select Employee – Combination of two fields from the Employee Table to display the first and last name in one field
 - Event Employee Attended
 - Time In
 - Time Out
- 8. frmEvents: Events and Volunteers Form
 - Event Name
 - Event ID
 - Date Of Event
 - Location
 - Notes
 - Total Volunteer Hours – Calculated Field
 - Total Volunteers – Calculated Field
 - Start Time
 - End Time
 - Volunteers Tab
 - a. Last name
 - b. First Name
 - c. Event ID
 - d. Time In
 - e. Time Out
 - f. Total Hours
 - Restorations Tab
 - a. EventID
 - b. BikeID
 - c. Type
 - d. Repairs Needed
 - e. Event Notes
 - f. Repaired?
 - g. Safety Check?
 - Employees Tab
 - a. EventID
 - b. EmployeeID

- c. Time In
 - d. Time Out
- 9. frmHoursPerEvent: Hours Per Event Form
 - Employees Tab - frmEmployeeEventHours
 - a. Select Employee – Combination of two fields from the Employees Table to display the first and last name in one field
 - b. Event Employee Attended
 - c. Time In
 - d. Time Out
 - Volunteers Tab - frmVolunteerEventHours
 - a. Select Volunteer – Combination of two fields from the Volunteer Table to display the first and last name in one field
 - b. Event Volunteer Attended
 - c. Time In
 - d. Time Out
- 10. frmVolunteerEventHours – a subform included in the frmHoursPerEvent
 - Select Volunteer – Combination of two fields from the Volunteer Table to display the first and last name in one field
 - Event Volunteer Attended
 - Time In
 - Time Out
- 11. frmVolunteersInfo: Volunteer Information
 - First Name
 - Last Name
 - Date Entered
 - Volunteer Id
 - Email Address
 - Select Emergency Contact – Combination of two fields from the Emergency Contact Table to display the first and last name in one field
 - Notes
 - Relationship
 - First Name – Emergency Contact
 - Last Name – Emergency Contact
 - Home Phone – Emergency Contact
 - Cell Phone – Emergency Contact
 - Total Volunteer Hours – Calculated Field
 - Number of Trainings Attended – Calculated Field
 - Liability Signed
 - General Tab

- a. Select Address, Update, or Create New – Contains drop down menu to select address, showing address, city, state, and zip.
- b. Address
- c. City
- d. State
- e. Zip
- f. Phone
- g. Preferred Contact Method
- h. Date of Birth
- i. Employment
- j. Medical Concerns?
- k. Medical Comments

➤ Trainings Tab

- a. Volunteer ID
- b. Session Type
- c. Training Date

➤ Events Tab

- a. Event ID
- b. Volunteer ID
- c. Time In
- d. Time Out
- e. Total Hours

12. Navigation Form – The default form view when opening the database, contains all the main forms, reports, and queries in an easy to navigate form.

➤ Forms:

- a. Volunteer Information
- b. Events and Volunteers
- c. New Event
- d. New Employee
- e. New Volunteer
- f. Emergency Contact
- g. Add Training
- h. Add Bike
- i. Employee and Volunteers Event Hours

➤ Reports:

- a. Event Information
- b. Bike Attendance
- c. Check In A-G
- d. Check In H-L
- e. Check In M-Z

➤ Queries:

- a. Bike Event Attendance

- b. Employee Event Hours
- c. Volunteer Event Hours
- d. Volunteer Event Hours 2
- e. Total Volunteer Hours
- f. Trainings Attended
- g. Volunteer Training Attendance
- h. Total Volunteer Hours
- i. Total Vounteers

13. Subforms:

- qryBikeAttendance subform
- qryEmployeeEvents subform
- qryHoursPerEvent subform
- qrHoursPerEvent2 subform
- qrySumVolHoursPerEvent1
- qryTrainingAttendance Query1 subform
- qryTrainingEventDateVol subform
- qryTtlVolHrs subform
- qryTtlVolPerEvent subform

Reports:

1. rptBikeAttendance: Restorations Report
 - Event ID
 - Date Of Event
 - Location
 - Event Notes
 - Event Time
 - Bike ID
 - Attendance Notes
 - Repaired?
 - Safety Check?
2. rptCheckIn A-G: Check-In Report A-G
 - Volunteer ID
 - Last Name
 - First Name
 - Liability Signed?
 - Training Date
 - Main Topic
 - Employee ID
3. rptCheckIn H-L: Check-In Report H-L
 - Volunteer ID
 - Last Name
 - First Name
 - Liability Signed?
 - Training Date

- Main Topic
- Employee ID
- 4. rptCheckIn M-Z: Check-In Report M-Z
 - Volunteer ID
 - Last Name
 - First Name
 - Liability Signed?
 - Training Date
 - Main Topic
 - Employee ID
- 5. rptEventInfo1: Event Info Report
 - Event Date
 - Location
 - Notes
 - Time In
 - Time Out
 - Total Time - Calculated Field
 - Total Volunteer Hours – Calculated Field
 - Total Volunteers – Calculated Field

5. Implementation Notes:

Database Security and Access Issues:

Be advised, currently no security is set within this database which may allow unauthorized access by anyone – not limited to (volunteers, employees, and general public) to view personal data. Access should be granted in a need-to-know basis and restricted to only data necessary to conduct a particular job function. Access to this database should include a strong password that is regularly updated.

This database should be installed on a server to allow multiple employees to have access simultaneously from both of your locations. Records should also be locked in a way to prevent more than one individual from editing a record at the same time. This database in its current state should allow much greater flexibility and a better user experience for your employees to store and view data.