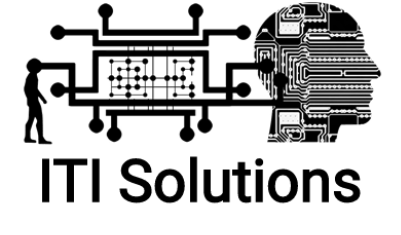
11/18/2019

Milestone 4

Data Modelling



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**Client Signature:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   **Date:** \_\_\_\_\_\_\_\_\_\_\_\_

Edenbridge Family Services

Scheduling and Time-Tracking Database

Software: Schedule ED

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# Current System

The system that has been requested for us to replace at Edenbridge is a mixture of paper forms and Microsoft Excel spreadsheets. In short, this system contains some mass inefficiencies that drastically lower the potential productivity at Edenbridge. Below is the general data structure that will be replaced.

A screenshot of a cell phone screen with text

Description automatically generated

Currently, Edenbridge uses a paper-based system in multiple binders shared between the coordinators. This makes it difficult to make sure the workers are not working overtime or being paid for work they have not done because the coordinators need to physically go over to the other coordinators’ binders and look at what shifts the workers already have.

### Business Rules

* One group home can house many clients
* One client can live in one group home
* One client can have many shifts
* One shift is for one client
* One worker can work many shifts
* One shift is worked by one worker
* One department can classify many shifts
* One shift is classified into one department

# Data Dictionary

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Field name** | **Field Size** | **Data Type** | **Data Format** | **Description** | **Example** |
| SHIFT | SHIFT\_ID | 20 | INT | --------------------------- | ID number used to uniquely identify a shift. | 1234 |
| SHIFT\_TYPE | TYPE\_CODE | 3 | VARCHAR | --- | Code used to uniquely identify the type of shift. | GHD |
| CLIENT | CLIENT\_ID | 20 | INT | --------------------------- | ID number used to uniquely identify a client. | 1234 |
| WORKER | WORKER\_ID | 20 | INT | --------------------------- | ID number used to uniquely identify a worker. | 1234 |
| DEPARTMENT | DEPT\_CODE | 3 | VARCHAR | --- | Code used to uniquely identify a department. | PRI |
| GROUP\_HOME | GH\_ID | 20 | INT | --------------------------- | ID number used to uniquely identify a group home. | 1234 |
| SHIFT\_STATUS | STATUS\_CODE | 3 | VARCHAR | --- | Code used to uniquely identify the status of a shift. | C |
| SHIFT | SHIFT\_DATE | 9 | DATE | YYYY-MM-DD | The date of a shift. | 1975-10-10 |
| SHIFT | SHIFT\_START | 8 | TIME | HH:MM:SS | The time of day a shift starts. | 00:24:24 |
| **Table** | **Field name** | **Field Size** | **Data Type** | **Data Format** | **Description** | **Example** |
| SHIFT | SHIFT\_END | 8 | TIME | HH:MM:SS | The time of day a shift ends. | 00:24:24 |
| SHIFT | SUPERVISOR | 1 | BOOLEAN | N | Boolean variable showing if there is a supervisor or not. | 0 |
| SHIFT | SHIFT\_NOTES | 150 | LONGTEXT | --------------------------- | Any extra information necessary for the person working the shift. | Some specific thing to take into consideration. |
| WORKER | WORKER\_LNAME | 20 | VARCHAR | --------------------------- | The last name of a worker. | Smith |
| WORKER | WORKER\_FNAME | 20 | VARCHAR | --------------------------- | The first name of a worker. | Jane |
| WORKER | WORKER\_ADDRESS | 40 | VARCHAR | --------------------------- | A worker’s address. | 1234 Street St. |
| WORKER | WORKER\_CITY | 20 | VARCHAR | --------------------------- | The settlement a worker lives in. | Settleville |
| WORKER | WORKER\_P1 | 20 | VARCHAR | N-NNN-NNN-NNNN | Primary phone number of a worker. | 1-123-123-1234 |
| WORKER | WORKER\_P2 | 20 | VARCHAR | N-NNN-NNN-NNNN | Secondary phone number of a worker. | 1-123-123-1234 |
| WORKER | WORKER\_EP | 20 | VARCHAR | N-NNN-NNN-NNNN | Emergency phone number of a worker. | 1-123-123-1234 |
| **Table** | **Field name** | **Field Size** | **Data Type** | **Data Format** | **Description** | **Example** |
| WORKER | CAN\_GH | 1 | BOOLEAN | N | Whether a worker can work in a group home or not. | 1 |
| WORKER | WORKER\_NOTES | 150 | LONGTEXT | --------------------------- | Any extra information about the worker. | Some specific thing to take into consideration. |
| CLIENT | CLIENT\_LNAME | 20 | VARCHAR | --------------------------- | The first name of a client. | Picard |
| CLIENT | CLIENT\_FNAME | 20 | VARCHAR | --------------------------- | The last name of a client. | William |
| CLIENT | CLIENT\_ADDRESS | 40 | VARCHAR | --------------------------- | The address of a client. | 1234 Street St. |
| CLIENT | CLIENT\_CITY | 20 | VARCHAR | N-NNN-NNN-NNNN | The settlement a client lives in. | 1-123-123-1234 |
| CLIENT | CLIENT\_P1 | 14 | VARCHAR | N-NNN-NNN-NNNN | Primary phone number of a client. | 1-123-123-1234 |
| CLIENT | CLIENT\_P2 | 14 | VARCHAR | N-NNN-NNN-NNNN | Secondary phone number of a client. | 1-123-123-1234 |
| CLIENT | CLIENT\_EP | 14 | VARCHAR | N-NNN-NNN-NNNN | Emergency phone number of a client. | 1-123-123-1234 |
| CLIENT | CLIGUARD\_NAME | 20 | VARCHAR | --------------------------- | Name of a client’s guardian. | Jean |
| CLIENT | CLIGUARD\_P1 | 14 | VARCHAR | N-NNN-NNN-NNNN | Primary phone number of a client’s guardian. | 1-123-123-1234 |
| **Table** | **Field name** | **Field Size** | **Data Type** | **Data Format** | **Description** | **Example** |
| CLIENT | CLIGUARD\_P2 | 14 | VARCHAR | N-NNN-NNN-NNNN | Secondary phone number of a client’s guardian. | 1-123-123-1234 |
| CLIENT | GROUP\_HOME | 1 | BOOLEAN | N | A Boolean describing whether a client belongs to a group home or not. | 0 |
| CLIENT | MAX\_PER\_MONTH | 4 | FLOAT | NN.NN | Maximum number of hours that can be allocated to client. | 56.75 |
| CLIENT | CLIENT\_NOTES | 150 | LONGTEXT | --------------------------- | Any extra information about the client. | Some specific thing to take into consideration. |
| GROUP\_HOME | GH\_ADDRESS | 40 | VARCHAR | --------------------------- | The address of a group home. | 1234 Street St. |
| GROUP\_HOME | GH\_PHONE | 14 | VARCHAR | N-NNN-NNN-NNNN | The phone number of a group home. | 1-123-123-1234 |
| SHIFT\_STATUS | STATUS\_NAME | 20 | VARCHAR | --------------------------- | Name of a shift’s status. | Pending |
| DEPARTMENT | DEPT\_NAME | 20 | VARCHAR | --------------------------- | Name of a department. | Private |
| DEPARTMENT | DEPT\_DESC | 50 | VARCHAR | ---------------------------- | Description of a department | Children department is for working with children |

# Entity Relationship Diagram

A screenshot of a cell phone

Description automatically generated

This diagram gives an overall picture of the database design for the proposed system. The main tables are the shift, worker, and client tables with a few other tables that are primarily used as lookup tables for the shift table. Such tables would be the shift type and shift status tables. With the utilization of primary and foreign keys, it will become easier than using the current system to find information about different shifts, as well as the workers and clients that are a part of those shifts.

# Tables

## Shift

A screenshot of a cell phone

Description automatically generated

The shift table is the most important table in the database, storing all the information about the work done by the workers. This table is linked to almost all other tables, using data from all of them to display information about each shift worked. The information stored in a record in the shift table is relevant to most any shift that would be scheduled.

### Business Rules

* Many shifts can be for one client
* Many shifts can be worked by one worker
* Many shifts can be categorized by one shift type
* Many shifts can by classified into one department
* Many shifts can be described by one shift status

## Shift Type

A picture containing screenshot

Description automatically generated

The shift type table is used to describe shifts in more detail, indicating whether a shift has special factors such as being an overnight shift.

### Business Rules

* One shift type can describe many shifts
* One shift is described by one shift type

## Shift Status

A screenshot of a social media post

Description automatically generated

The shift status table stores the information for the different shift statuses such as scheduled, completed, or signed. The status of a shift will change from when it is scheduled to after it is worked, indicating whether the worker assigned to the shift can get paid or not.

### Business Rules

* One shift status can categorize many shifts
* One shift is categorized by one shift status

## Department

A screenshot of a cell phone

Description automatically generated

The department table stores information about the different department that shifts are classified into, such as children, CAPP-C, or PDO. It also includes a more detailed description of the department if necessary.

### Business Rules

* One department can classify many shifts
* One shift is categorized into one department

## Worker

A screenshot of a cell phone

Description automatically generated

The worker table stores information about the workers themselves, including their name, phone number, and whether they can drive or work in a group home.

### Business Rules

* One worker can work many shifts
* One shift is worked by one worker

## Client

A screenshot of a cell phone

Description automatically generated

The client table stores information about Edenbridge’s clients, including their name, phone number, and the contact information for their guardian. One of the most important fields is the max hours, which allows the coordinators to see how many hours the client can be scheduled for, typically in a month.

### Business Rules

* One client can have many shifts
* One shift is for one client
* Many clients can live in one group home
* One client may live in one group home at most

## Group Home

A screenshot of a cell phone

Description automatically generated

The group home table stores basic information about Edenbridge’s group homes and in the instances where a client is not in a group home, an ID of 0.

### Business Rules

* A group home can house many clients
* One client may live in one group home at most

# Lessons Learned

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Date | Submitted By | Milestone | Experience | Lesson | Lesson Type | Effect |
| Nov 18, 2019 | Evan Guest | Milestone 4 | Having diminished cognitive activity due to 8am classes | I now know what it feels like to have Alzheimer's, it is an ungodly fate to anyone who develops it. | Personal | Will plan my next semester with 8am classes on alternating days. |
| Nov 18, 2019 | Beryon | Milestone 4 | Flash of inspiration coming from a different class, an idea to use Windows credentials to act as the login for the web portal. | Upon further reading, it appears possible to utilize existing Windows login credentials for logging into the site. | Technical | This is entirely subject to the existing structure and how the site is currently set up, as this segment of the system would depend heavily on the utilization of IIS. If it is utilized for the site, then we have our login system. Again, pending some questions though. |
| Nov 17, 2019 | Harley | Milestone 4 | I became acquainted with SQLyog. | SQLyog is a powerfull GUI tool for interfacing with MySQL. Previously I wrote scripts for everything I did with MySQL databases. | Technical | I should be able to create and modify databases a bit faster now that I have SQLyog. |
| Nov. 14, 2019 | Aidan | Milestone 4 | I learned more about how php functions | Php does not remember where you are when it sends back the web page so you have to program it to save values that you want to manipulate later | Technical | This will help me to make the web app function and remember where the user is along the process |
| Nov. 14, 2019 | Justin | Milestone 4 | I learned the basics of integrating databases into PHP, which will be essential for our app when it is developed. | Now that I know how to actually make everything connect, creating the web app actually seems like something that can be done. | Technical | Now that we know how to create the web app, we have an idea of how we can get it to work. |
| Oct. 26, 2019 | Beryon | Milestone 3 | This may be similar to an earlier one I did but found out the designer aspects within the Office Suite is a fair deal more powerful than I initially expected, even with 5+ years of experience using it for educational things. | Design and layout aspects within Microsoft Office Suite has far more functionality than it initially looks like. | Technical | With this Milestone as can be observed, there’s a good deal more effort that I put into the presentation of the document and the layout such as with the table of contents which is almost automated with using the styles bar on the home tab. This knowledge will be carried forwards into not just other documents, but all files created during this project. |
| Oct. 26, 2019 | Evan | Milestone 3 | Visio’s sharing policies are not as optimized as the rest of the office suite. At multiple times what was the newest version was unclear. | Don’t rely on Microsoft office to share and maintain files across users. | Personal | If Visio or a program similar is used in the future, a repository type program needs to be used. |
| Oct. 24, 2019 | Aidan | Milestone 3 | Not knowing enough about the scheduling process and how it is going to function | Focusing too much on the extra details of the system and not asking questions about some essential parts of the scheduling system | Academic | I will try to look at the big picture more often to check if I am only looking at one part |
| Oct. 24,  2019 | Harley | Milestone 3 | Received a poor grade on Milestone 2 | Proofreading everything extensively is very important to ensure the documentation is up to the standard expected of us. | Academic | I will now be aiding in the proofreading and revision going over the deliverables multiple times to ensure what we produce is high quality as much as I’m able to. |
| Oct. 18, 2019 | Beryon | Milestone 3 | Lesson? Reminder? Whichever, finally sunk in that this is an actual system being developed. | Far more detail than what I was accustomed to doing with classwork is required for this systems project. | Personal | Going forwards, will be redoubling efforts to ensure every little detail with what we do to ensure that it not only fulfills the deliverable requirements, but also to whatever specification the client provides on an aspect. |
| Oct. 17, 2019 | Justin | Milestone 3 | We started focusing too heavily on aspects of the project that were not very important | Focus on important things first, then think about extras later | Academic | From now on, we will focus on the functionality of the system, anything extra will only be considered after the basic requirements are met |
| Oct. 11, 2019 | Beryon | Milestone 2 | Project has a substantial feature-set, most of which was previously unknown from the first couple times. | Learned a good amount about how to work Project, including different ways to set up tasks and organize them. | Technical | Going forwards, should be far easier to arrange events and plan things out via Project. As a side effect, there’s a measure of knowledge attained in how to potentially display events in the system being developed. |
| Oct. 11, 2019 | Justin | Milestone 2 | Milestone presentation was not great, no intro or conclusion | Make sure assignments include all components | Academic | We will have a team member observe presentations from the other class to know what needs to be included for future presentations |
| Oct 11,  2019 | Harley | Milestone 2 | Organization  of presentation  was not ideal. | The order in which the information is presented is very important if we want it to be easy to follow. | Academic. | Someone will be assigned the duty of analyzing the presentation to ensure the flow of information makes more sense. |
| Oct 11,  2019 | Aidan | Milestone 2 | My work school balance was not great for the first month of school | I learned how far I can push myself before my school begins to suffer from it | Personal | Going forward I am not taking as much hours at work and am going to say no to more hours when asked so I can focus on this project |