ASSIGNMENT 3.2

IMPLEMENTATION OF THE AMS
DATABASE MANAGEMENT SYSTEM USING MS ACCESS

Due by May 3rd or anytime before
(See me if this timetable is problematic for you)
(For handing-in instructions, see “Deliverables” below).

For this exercise we will continue working with the AMS DBMS, but to make the assignment doable we will work only with part of the full database – the projects and sites tables (a 1-many relationship).

Typically, you would start to develop the database you designed in your DFD diagram in Activity 4 Part 1. But some of you may have different designs. So to keep this manageable, we will use the simplified (not completely normalized) DFD that is attached (Attachment B – separate file). And we will implement some of it, not all of it.

All of the below was described in the two handouts I provided and that we went through. But in the next two class sessions I’ll be around to help you if/when you get stuck.

In MS ACCESS:

1. Create the tables for: Child, Enrollment, Alumni_Friends, and Donation (15 points)

   See Attachment A (below) for the list of fields. Note that I’ve cut down dramatically the number of fields to make this assignment doable.

   Decide on an appropriate primary key for each table (remember, you can implement a new “ID” field if you deem it appropriate).
   Implement foreign keys to set up the 1-M relationships.

   For your fields, implement appropriate field data type, caption, default values, validation rules and validation text, decide whether it is required or not, and whether it should be indexed.

   **One important helpful hint:** As I tried to explain in class, MS Access has been known to get “confused” in the relationships part of the software. Make sure you are confident you have the primary keys and foreign keys defined the way you want them and double check this before you move on to setting the relationships. In other words, follow this procedure:
   1. Design *on paper* your primary and foreign keys;
   2. Create the tables *with only* the keys you designed in #1.
   3. Implement the relationships in MS Access, to make sure the table relationships are correct. Enforce referential integrity.
   4. Add the other fields in the tables (tables, design view), once you know you have the relationships set up correctly.

   In some instances in the past, I have found that students make a mistake on the relationships, and have already created all the fields and then go back and change the
field definitions for the keys in the tables, but can never get the relationships to recognize the 1-M. The result is they have to build the database from scratch.

2. Set up relationships, enforce referential integrity (5 points)

3. Develop two data entry forms with subforms for the many side (20 points):
   One for Child – Enrollment
   One for Alumni/Friends – Donation

   For fields where there are choices, implement combo boxes (drop down pick lists) following the technique I showed you when we developed the form in class.

   Note: Even though there aren’t a lot of fields in this database, create forms that use the entire screen.

4. Data entry (5 points)

   Using your new forms, enter some made up data in each form. Add at least 4 children records with at least 2 children having multiple enrollment years/programs. Add at least 4 alumni/friends with at least 2 of them having donated something for more than 2 years in the past.

5. Develop queries (15 points total)

   Show me all the students names by classroom and their pickup times (group by classroom, then by pickup time) (7.5 points)

   Show me all the Alumni/Friends and their past donation histories. (7.5 points)

6. Develop an Alumni report that provide the results of the second query above (10 points)

7. Develop a AMS Administrative System Main Menu with the following options (buttons). (10 points)

   Create a menu form that uses the entire computer screen. And optionally, you might consider copying the AMS logo graphic and inserting it on the menu to make it look a little nicer, or adding some graphics/images.

   Menu items:

   Children and Enrollment (all years) (This would be a button that opens the form developed in #3 above)

   Alumni and Friends and their Donations (all years). (This would be a button that opens the form developed in #3 above)

   A button that calls the Alumni report developed in #6 above.
An “Exit the System” button.

8. Develop command buttons to invoke the reports, delete records, and to take back to main menu on each form displaying data (10 points)

9. Develop password security and make the Access DBMS open directly to your menu form. Turn off other Access menus to prevent others from modifying the database table design or relationships.

   NOTE! Make sure you try to reopen your database using the security keystroke (hold the shift key when opening) so you see how you as a developer can get back to the database design menus.

   (10 points)

Extra Credit

10. Develop a form (and include it on your menu) that displays just the currently enrolled children for the full year program in 2011 and their enrollment information. How would you do this?

Deliverables:

Using winzip, zip up your database and upload it to SPARK. In the comments box, provide me with the password.

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ATTACHMENT A
Database Tables and Fields

CHILD*

Childlastname (required)
Childfirstname (required)
Child current picture
Nickname
Parent full name 1 (required)
Parent full name 2
Street
City
State
Zip
Parent 1 phone
Parent 2 phone
Parent email
Birthdate
Comments

ENROLLMENT*

Year (required)
Program (required; Validation rule options: full year, winter camp, summer camps (1, 2, 3, 4, 5, 6, 7), spring camp)
Classroom (required; validation rule options: T, P1, P2, E)
Monday pickup time (choice of 12:00, 1:00, 3:00, 4:00, 5:30) -- ask me about how to implement this
Tuesday pickup time (choice of 12:00, 1:00, 3:00, 4:00, 5:30)
Wednesday pickup time (choice of 12:00, 1:00, 3:00, 4:00, 5:30)
Thursday pickup time (choice of 12:00, 1:00, 3:00, 4:00, 5:30)
Friday pickup time (choice of 12:00, 1:00, 3:00, 4:00, 5:30)

ALUMNI/FRIENDS*

Child or friend last name
Child or friend first name
Child or friend flag (C or F)
Parent 1
Street
City
State
Zip
contact phone
contact email
Comments about history or relationship with school
Requested do not call/contact

DONATION*

Event (options: AF-Annual Fund, A-Auction)
Year of donation
Amount or Value
Description (for auction)
Thank you sent
Anonymous (yes, no)

*Note: I have not shown in here what primary or foreign keys to use. That is up to you how you do that.