**EX16\_AC\_CH02\_GRADER\_CAP\_HW - Morris Arboretum**

**Project Description:**

*The Morris Arboretum tracks donors in Excel. They also use Excel to store a list of plants in stock. As donors contribute funds, they can elect to receive a plant gift from the Arboretum. The organization has grown and the files are too inefficient to handle in Excel. In the following project, you will import Excel files into an Access database. You will create a table to track donations, create relationships between the tables, and create some baseline queries.*

**Instructions:**

For the purpose of grading the project you are required to perform the following tasks:

| **Step** | **Instructions** | **Points Possible** |
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| **1** | Start Access. Open the downloaded Access file named *exploring\_a02\_grader\_h1*. | 0 |
| **2** | *Tracking donations from various donors at the Arboretum is very important. In the past, keeping all this information in an Excel spreadsheet worked; however, it was difficult to find out how much each donor contributed. Knowing this information could help you receive more donations. By putting this information into a database, it will help you in asking additional questions and extracting information about the donors and their donations. The first step is to create a table of the donations. Remember that it is important to create a column of unique values (Primary Key) when creating any table in a database. This distinctively identifies each row of the table. This will be very important at the end of your project when you start creating relationships between the tables.*  Create a new table in Design view using the name **Donations**. Add the primary key field as **DonationID** with the Number Data Type and a field size of Long Integer. Add the following field names to the table: **DonorID**, **PlantID**, **DonationDate**, and **DonationAmount** (in that order). | 8 |
| **3** | *When creating your table, it is very important that the data types of the fields be changed to an approximate type. This ensures the data being entered into the fields will be consistent. For example: you would not be allowed to enter some text into the field with a number data type.*  Change the Data Type for the DonorID and PlantID fields to Number. Change the Data Type for the DonationDate field to Date/Time, and then change the Data Type for the DonationAmount field to Currency. | 6 |
| **4** | View the table in Datasheet view, save the table, and then add the following records to the Donations table:  DonationID DonorID PlantID DonationDate DonationAmount  **1 24 15 3/17/2018 120**  **2 9 11 4/3/2018 50**  **3 14 9 4/19/2018 150**  **4 3 4 4/12/2018 60**  **5 18 7 4/19/2018 50**  **6 14 11 3/12/2018 125** | 6 |
| **5** | Sort the records in the Donations table by the DonationAmount field in descending order. Save and close the table. | 4 |
| **6** | *Many organizations that use Excel, including the arboretum, later on realize Excel may not be the best choice of a program given a certain task that needs to be accomplished. You recognize that a database would be more useful; however, you do not want to lose all the data that you have in the spreadsheet. No need to fret because you can import the data from Excel into an Access database easily.*  Import the downloaded *a02\_grader\_h1Plants.xlsx* workbook as a new table in the current database. Using the wizard, specify that the first row contains column headings, set the PlantID field to be indexed with no duplicates, and set the PlantID field as the primary key. Import the table with the name **Plants** and do not save the import steps. | 10 |
| **7** | View the **Plants table** in Design view and change the field size for the PlantID field to Long Integer. Save the table. Click Yes in the dialog box indicating that some data may be lost. Close the table. | 4 |
| **8** | *The concept of Table Relationships is a very important concept when understanding databases. When you created your tables for the donations at your arboretum, you decided to put this information into separate but related tables. Putting the donor information into the same table as the donations would make the table unyielding. Keeping this data separate will make it easier to query the data and create reports.*  Begin establishing relationships in the database by adding the Donations, Donors, and Plants tables to the Relationships window. Close the Show Table dialog box. Create a one-to-many relationship between the DonorID field in the Donors table and the DonorID field in the Donations table, enforcing Referential Integrity. Select the option to cascade update the related fields. | 6 |
| **9** | *The most common relationship is “one to many”. In this case, there is only one value for the PlantID field (Primary Key) within the Plants table but there can be many values within Donations Table for the PlantID field (Foreign Key). Creating this type of relationship will allow you to pull data out of both tables based on the questions you are asking. An “enforced relationship” ensures each value entered in a foreign key column matches an existing value in the related primary key column.*  Create a one-to-many relationship between the PlantID field in the Plants table and the PlantID field in the Donations table. Enforce Referential Integrity. Select the option to cascade update the related fields. Save and close the Relationships window. | 6 |
| **10** | *A “query” is used to extract data from the database in a readable format according to the user's request. The relationship between the tables plays a role when running queries. This first query will look at one table to extract all donations greater than $100.*  Create a query using the Simple Query Wizard. From the Donations table, add the DonorID and DonationAmount fields (in that order). Ensure the query is a Detail query. Name the query **Donations Over 100** and finish the wizard. | 10 |
| **11** | *This first query will look at one table to extract all donations greater than $100. Using the “Design View” will allow you to enter the criteria.*  View the query in Design view, and then set the criteria for the DonationAmount field so that only donations greater than **100** are displayed. | 6 |
| **12** | *If completed correctly, at the of this step, you should see only three rows. These will be all the donations that are greater than $100.*  Sort the query in ascending order by the DonationAmount field. Save the query. Run the query, and then close the query. | 4 |
| **13** | *Your next query is a bit more complicated because you need to extract data from multiple tables. This is where setting up the table relationships comes into play. In this case, you want to find out the date of the donations, some information about the donor, and Plant name donated. Setting up the tables and relationships properly make this task an easy one.*  Create a new query in Design view. Add the Donations, Donors, and Plants tables to the query design window. Close the Show Table dialog box. Add the DonationDate field from the Donations table, the donor’s Lastname, Firstname, and Phone fields from the Donors table (in that order). | 8 |
| **14** | Add the DonationAmount field from the Donations table after the Phone field, and then add the PlantName field from the Plants table. | 4 |
| **15** | Sort the query in descending order by the date of the donation, and then by the last name of the donor in ascending order. Save the query with the name **Plant Pickup List**, and then run the query. Close the query. | 8 |
| **16** | *The next query you wish to run is to find out which donors do not want to get a newsletter. Instead of creating a brand new query and adding the fields, you know the last query already has nearly all of the information you need. It is easier to copy the query and delete and add the fields you need.*  Copy the Plant Pickup List query, and paste it using **ENewsletter** as the query name. | 4 |
| **17** | Open the ENewsletter query in Design view, and delete the DonationDate column. Add the ENewsletter field to the first column of the design grid and set it to sort in ascending order, so that the query sorts first by ENewsletter and then by LastName. Run, save, and close the query. | 6 |
| **18** | Close all database objects. Close the database and then exit Access. Submit the database as directed. | 0 |

| **Total Score** | **100** |
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