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| HOMEWORK: DATABASE PROJECT IDEA SHEET  DATABASE BASICS \_ SPRING 2022  LILY ZIMMERMANN |

**Basic Information**

**Domain**: Lily’s Programs

**Idea Notes**: A database for my programs I’ve created so far

**Why I want to create this**: So I can eventually use this or at least it’s outline for a website about me that can be used to apply to jobs and internships

**Major Topics for the Database**

1. Program
   1. Program Key:
      1. Program name
   2. Values:
      1. ProgramCode
         1. Eventually it may make sense to use some data like performance indicators of speed or number of lines of code, but for now, I’m just going to have this include the actual code to display. The only thing I’d have to figure out is if I have to have a table to organize the programs that are created through multiple separate files
2. Language
   1. Language Key:
      1. Name of language
         1. Python
         2. Java
         3. Excel VBA
   2. Values:
      1. LanguageTimeStudied
         1. The number of months I have been studying this language
      2. LanguageProgramNumber
         1. I’m not sure if there’s an automatic way to show the number of programs written in this language where it could be automatically applied as a value or if I would have to manually update it.
3. School
   1. SchoolKey:
      1. Name of school
         1. University
         2. Udemy
         3. Self Study
   2. School Values:
      1. SchoolStartTime
         1. Month & Year
      2. SchoolEndTime
         1. Month & Year
      3. DegreeObtained
         1. This would be a yes or no depending if I obtained my Computer Science degree from the school listed
4. Degree
   1. Degree Key:
      1. Name of the Degree
5. Accreditation
   1. Key:
      1. Accreditation name
         1. ABET
         2. HigherLearningCommission
   2. Values:
      1. SchoolOrDegree
         1. Shows if an accreditation can apply for a school, a degree, or both
6. Topic \_ (Topic values would mostly be the same as the book chapter titles that the class assigned or the titles of the courses studied independently online like through the website Udemy. If I was studying myself, the topic value would be assigned either the name of the goal for the full prABETogram or what individual topic I was trying to teach myself. Below is an initial list of values that would be used based off of the chapter titles from the books I’ve read and created programs for in my past course work.)
   1. Topic Key:
      1. Topic Name
         1. Algorithms and Design
         2. Control Statements
         3. Pre-built methods
         4. Object-Oriented Programming
         5. Software Engineering
         6. Arrays
         7. Lists
         8. Tuples
         9. Strings
         10. Dictionaries
         11. Sets
         12. Inheritance
         13. Recursion
      2. Notes:
         1. Some topic names apply to one or multiple programming languages. For example, I don’t believe Java uses the term ‘lists’ like python does. This may just have to be a lookup entity since any specific information about each topic is actually a separate entity - like a language that it is tied with)

STATEMENT OF WORK:

**History**

When applying to software engineering and programming internships, required information for the application had to be split up into different locations. For example, my resume and job history was posted in LinkedIn, my programs were housed on GitHub, and any information about me as a person was only conveyed through cover letters and initial interviews. This database will be built with the plan of either using the database itself, or its general structure for a website I will be building that includes information about me to aid in job and internship applications.

This project will only cover a database of the programs I have built and some applicable details. All other job application information will either be handled at a different time or will be included on the website in a different manor. By creating a simple database, employers will be able to search for my past projects based off of desired criteria. This means that if they want to see my understanding of a certain language or a certain topic in programming, they will be able to find programs that related to that desired information.

I am not concerned if the coding language or database that we will be using for this project will actually work well with a website. The main goal for this project is to show the structure and organization that would be needed. If my project does end up working well with a website, that would be great, but otherwise it would still give me practice in the structure of the information that will be needed.

**Scope**

The database will manage information about the programs I have created, schools I have attended to study computer science, and programming languages I have learned. For now, the program information will only include the actual code I created and the program name. Although I have attended schools for other fields of study, this database will only include schools where I studied programming and computer science. For the programming languages, the time spent studying the language will be the main information that is tracked. Topics for programming languages will also be included.

**Constraints**

This database will not include any other information that will later be included on the website such as past employment, volunteering, past education, or personal projects. This database will not include information about the specific programs such as performance statistics or program length, but that information may be included at a later date.

**Objectives**

1. Reduce the speed required to look up the programs I have created based off of certain desired criteria including but not limited to program language or programming topic
2. Make showing my level of understanding of a programming language more qualitative rather than quantitative

**Tasks and Timeline**

1. **Gathering Data**: Most of the time required for this task will be taken up just placing the data in one location. I already have all my programs organized on one computer with search criteria such as topic and language easily available.

**Time allotted**: 8 hours

**Deliverable**: A document that includes all required information.

1. **Analyzing Data**: I will not be including all programs I have ever made to make sure not to overwhelm potential employers, so I will need to spend time deciding which programs to include.

**Time allotted**: 4 hours

**Deliverable**: A list of the programs that will be included

1. **Normalization**: I will go through the major topics of the database after deciding on which programs to include in the database and review if all information has been normalized.

**Time allotted**: 4 hours

**Deliverable**: Entity Relationship Diagram

1. **Building the Physical Database**: I will convert the entity relationship diagram into a database.

**Time allotted**: No idea. Since this is my first ever database, and we will be following the timeline of our class. I really have no idea how long this will take.

**Deliverable:** The schema of the database

1. **Testing and Security**: I will test the database to make sure there are not any issues that could cause the database to break. I’m not sure how in depth our review of database security will be in this class, so I’m not sure how to speak on that topic.

**Time allotted**: 8 hours

**Deliverable:** Notes on any portions of the database that need to be corrected

1. **Database Completion**: I will correct any issues found in the testing and security phase. I will submit my database to be graded.

**Time allotted**: 8 hours (corrections would most likely be done simultaneously with the testing and security phase)

**Deliverable:** Database submitted into Blackboard

**Total allotted time for project:** 32 hours