ITPS I – Database Management

Definition: A database is a collection of information organized in such a way that a computer program can quickly select desired pieces of data. You can think of a database as an electronic filing system. Traditional databases are organized by fields, records, and files. A field is a single piece of information; a record is one complete set of fields; and a file is a collection of records. For example, a telephone book is analogous to a file. It contains a list of records, each of which consists of three fields: name, address, and telephone number. To access information from a database, you need a database management system (DBMS). The system may be Access, Filemaker Pro, or a free web-based database such as the one found at the following website**: http://server.com/siteapps/dbapp/.** This is a collection of programs that enables you to enter, organize, and select data in a database.

The Competency: The teacher candidate will design, manipulate, and retrieve database information for an educational purpose. The following is a list of how databases might be used for educational purposes:

- Maintain Student Information to be used to track meeting standards
- Keeping addresses for mailings to parents, etc.
- Classroom library records
- Keeping track of student readings
- File of lesson plans linked to standards, topics, and units of study
- Having students keep learning journals
- Collections of questions and answers
- Keeping information on items of study such as information on the 50 states, inappropriate student behaviors, etc.

Required Task: In the case of PHY 302, the purpose will be to organize information needed to implement a unit of the student's choosing. After selecting the topic, the student will select needed materials from supplier catalogs with the intention of purchasing them. The budget will be $8,000, and the entire amount must be spent. Assume an introductory physics course of 24 students working in six groups.

Requirements: The teacher candidate will write a rationale for the database designed, explaining how the reported information would be used in an educational setting. The database will be designed to have multiple records and fields. At least 2 different field types from the following list must be included: numeric, alpha, date/time, and currency. A report will be developed using a query that supports the stated educational purpose. The nature of the query will be described. A reflection will be written explaining how the report supports the educational purpose and how the student will use the information reported.

Evidence to be put in LiveText: the written rationale for the database, a database table (or snapshot of a large table), a report generated from that database, and a reflection.

ITPS I – Database Management Scoring Rubric

Indicator	Developing (0-3 points)	Target (4 points)	Mastery (5 points)	Score
1. The Rationale	The rational is poorly written or does not state an appropriate educational purpose.	The teacher candidate clearly explains an appropriate educational purpose for this database.	The rationale is well written and ties the purpose to an instructional, curricular, or administrative purpose.	
2. Record Design	The teacher candidate designed the database with less than 5 records.	The teacher candidate designed the database with a minimum of 5 records.	The teacher candidate designed the database with a minimum of 10 records.	
3. Field Design	The teacher candidate designed the database with less than 5 fields.	The teacher candidate designed the database with a minimum of 5 fields.	The teacher candidate designed the database with a minimum of 10 fields.	

4. Field Types	The teacher candidate only used 1 type of field in the database.	The teacher candidate used at least two different types of fields from the following list: numeric, alpha, date/time, and currency.	The teacher candidate used 3 or more field types including a calculated field.	
5. Query	The teacher candidate does not describe the query or the query described would not give the report results given.	The teacher candidate clearly describes the query statement or procedure that gave the results found in the report.	The teacher candidate clearly explains multiple criteria in the query that would produce the given report.	
6. Report	The teacher candidate's report does not present a subset of the database.	The teacher candidate developed a report that accurately presents a subset of the designed database based on the reported query.	The teacher candidate developed a report that demonstrates the use of additional options such as sorting or grouping to make the information more useful or easier to read.	
7. Reflection on Rationale	The teacher candidate's reflection does not respond to the purpose stated in the rationale.	The teacher candidate wrote a reflection that explains how well the report met the educational purpose in the rationale.	The teacher candidate's reflection explains how the purpose of the give database could be expanded for additional educational purposes	
8. Reflection of Educational Usefulness of the Report(s)	The teacher candidate's reflection unclearly describes how the reported information is to be used for future educational activity.	The teacher candidate's reflection explains how the report could be used to improve instruction, curricular, or administrative tasks.	The teacher candidate's reflection describes multiple uses of the database for future educational activity.	
Comments:		Total Points:		

Students must meet all requirements at the "Target" or above level to successfully pass the ITPS I Assessment requirement.