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PSU Database System Development

Penn State Abington IT Group has reached out to us regarding in establishing a robust database system. However, we need more information to build the database and to predeclare certain fields to achieve the best possible result for our client. Below is the theoretical process that we will take to find the facts to support our development of the database system.

First, we will interview the client. This is the most important step as you can receive the most feedback and information from an interview. You can read body language, boost the client's confidence, and make them feel like they are part of the project. Requirements collection, which will be brought up later, starts from the interview. The client explains their plan on how and where the database will be implemented, which will allow the development team to draft up requirements for the project. Furthermore, this allows the development team to form opinions and possible theoretical implementations based on the provided information. In addition, if there is a misunderstanding or an unexplained topic, the interviewer can always wrap back to the topic to get clarification. However, interviewing can be costly with our time and money; and the client may not be willing to meet face to face. In addition, we need to make sure that the interviewer asks the right questions and doesn't overwhelm the client.

Second, we will send out questionnaires. These questionnaires are for the departments that will seek benefit or use the database when it is completed. This will allow us to collect all extremes of possible results and have better insight on the development of the database. In

addition, there are many small details that we could get from questionnaires, like data types, attribute lengths, and table sizes. It's a very inexpensive way to acquire large sets of data from people, in addition to receiving more honest results as the correspondence is one to one with the developer team. In addition, we can sort the responses to different sections which will ultimately correlate with the various tables. The drawback to the questionnaires is that not many people will respond to them, or they will be left incomplete or be considered useless depending on the quality of the response. Other disadvantages, which are why the interviews are better, is because you can read someone's body language, nor can you get clarification on a certain topic or phrase if you get confused. Following up usually does not yield fruitful results, but questionnaires are sometimes better depending on the length and quality of the response.

Third, we observe the organization in operation. We will start by getting an overview of their current system if they have one. See what they have so we can avoid re-inventing the wheel and avoid creating a steep learning curve for the end-user(s). This also allows the developers to have better insight on how the system will be implemented and see where they can improve from the current system, if applicable. Some drawbacks are that people may perform tasks differently when they know that they are being observed. In addition, for rare edge cases, some tasks may not be seen when being observed, which may lead the developers to overlook a task which will be crucial for the database system. In addition, we try to analyze which departments have access to certain tables to structure the database to be easy to use and read.

Fourth, we examine the documentation. Doing so is extremely useful during the interview and brainstorming process for the development team. This involves examining documents, reports, forms, and other types of documents that pertain to the database project. This allows the development team to get insight on possible structure and to understand if there is a system

currently in place. This also allows the team to find the problems and the needs for the database and allows the team to set up realistic timelines. This can also save the development team a bunch of time as they may not need to “reinvent the wheel” and use a part of the already present database system, if it exists. In addition, documentation could include mission statements and strategic plans which can allow the team to future proof and prepare for future additions to the enterprise.

Fifth, is the research step of the development process. This is where the development team will search for articles, books, and journals to find if similar problems were resolved, along with an outline of the current database system, if there is one. All the results are brought together for this step. This step may also require the development team to monitor the database system, which may not be possible depending on the client. In addition, the previous team that developed the current database system may have had poor documentation, which may prove monitoring and replication to be tedious and not worthwhile. After the research step comes the database planning and requirements collection which can be easily determined from the previous five steps.