

Electronic-Type



Database Design Criteria

How to Analyze the Database Development Process:

FileMaker Pro 13



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Customer Development Analysis in FileMaker Pro 12 Development

General

1. Design Standards & Needs Analysis

Several variables play a critical role in determining the cost of designing a customized database. To help predict the time and expense of designing a database for your organization, please consider the following questions and consider your firm's preferences. Please feel free to call and discuss these issues further if it would help you with your answers. Your answers to these questions will be an important factor in any time/cost estimates we might provide to you.

2. Debugging

Software design of all types follows the ancient academic/scientific practice of advancing a theory, testing the theory, correcting flaws revealed by the tests and then repeating that cycle until no flaws are revealed or until the flaws are deemed inconsequential. In modern-day parlance, this is called 'debugging'. You can save money by doing more of the testing yourself, but you will pay a penalty with problems in using the database and the frustration that ensues. For some clients this is acceptable. For others, it is not.

Doing more of the testing yourself also means your database will be delivered sooner. The testing, to achieve a very high confidence level requires additional time. Sometimes a flawed database is so much better than the status quo that an organization will choose lower standards in the interest of faster delivery.

We would never deliver software with known problems, but the amount of effort spent finding problems can be adjusted to the user's needs. With these factors in mind, please consider the confidence level you desire in your customized database:

Lower Cost						Higher Cost
More Problems						Fewer Problems
Faster Delivery						Slower Delivery
50%	60%	70%	80%	90%	100%	

3. User Interface

How easy should it be to learn to use your database? After less than five minutes of instruction from us, an inexperienced FileMaker Maker Pro (FM Pro) user should be able to initially click their way through the database, performing searches and sorts, browsing multiple screens of information in each record and making printouts or reports. Every step should be in an easy-to-follow manner with all possible blind alleys and detours carefully programmed out to prevent the user from getting lost. At the other extreme, we can design a basic database structure with the files, fields and some rudimentary layouts.

The user can learn FileMaker Pro by deconstructing existing examples, from manuals, from a colleague or from a training class. The user can then learn to design and modify layouts, use FileMaker Pros built-in find and sort procedures and otherwise navigate through the database manually. Somewhere in between these two extremes is probably the right point for your organization. A simple-to-use interface requires more time to design, but you will reap long-term savings with a shorter training curve for your users and less possibility of user mistakes. On the flip side, changes to the database are more likely to require the assistance of a qualified consultant.

How quickly, as measured in hours of training, should someone be able to learn how to effectively use the database for routine functions?

Lower Design Cost				Higher Design Cost
More Training				Less Training
More Pitfalls				Fewer Pitfalls
Easier For You To Change			Harder For You To Change	
16 hours	12 hours	8 hours	4 hours	1 - 2 hours

4. Data Conversion

(Please skip this point if you don't currently have data in digital form that needs to be imported into the new database). The foundation of a database is the file and field structure that determines how the data is organized. If you already have data in a digital form, whether it's in a FileMaker database or another form, the file and field structure is different than it will be in a new database. Otherwise, you wouldn't need a new database. The process of moving the data from the old format to the new Format is called data conversion. The bulk of data conversion is performed in large blocks. Typical example: A single field in the old database might contain a persons name consisting of first name, middle initial and last name. In the new database that would require three fields, one each for the first, middle and last name. (In case you're wondering why, it is because you would normally initiate find and sorts on the last name – the old database format may not allow that). As long as large groups of records fit a given consistent pattern, the computer is an effective tool for data conversion.

A skilled database professional is also invaluable for extracting data from old files. At some point, however, the law of diminishing returns finally hit home. A few problem records or fields will resist any sort of logical approach either because of flaws in the structure of the old database or in the way data was entered. At that point, clients might decide that the data isn't worth the effort or decide that it's so important it should be entered by hand into the new database.

Predicting the nuances and details of data conversion is often the most difficult part of estimating a projects cost. Recognizing that neither of us can foresee with absolute certainty what sort of problems are likely to emerge in the data conversion process and what pieces of data are likely to become problems, you would need to estimate by percentage how your data is important to you.

5. Level of Data importance

Lower Cost					Higher Cost
50%	60%	70%	80%	90%	100%

6. Access To Data During Development

Work on your database will typically occur in the most productive, efficient manner when it's performed at our office. Some organizations, however, require constant access to their data even while the design is being finalized and the data conversion is ongoing. This will result in additional cost and time not effectively utilized.

Work performed in your office is typically more expensive because of:

- Interruptions.
- Less efficient work patterns to maintain your access to the data and to coordinate times when the data won't be accessible.
- Less efficient hardware and software configurations.
- Our inability to shift to other activities while waiting for the you to complete lengthy processing or proceses.

In the some extreme case, a client does not want to be without access for a single minute. This requires planning in advance of the data conversion, more debugging before installation and for some work to occur only at night or on weekends. In this context, assuming that periods of inaccessibility are scheduled in advance, how long can your organization be locked out of the databases without undue hardship in the interest of keeping costs lower?

_____hours / days (circle one)

7. Features vs. Speed

On a given computer or network, a database with fewer features will run more quickly than a database with more features. A computer will process a certain number of instructions in a given amount of time (this is "gigahertz" when comparing hardware speeds). If some of that processing time is used for extra features, it will perform its core functions more slowly. For example, the computer might automatically generate a 'salutation' for a letter based on someone's name as opposed to having the user enter that salutation. This sounds fine, but if the database is rarely used to generate personal letters, it's a waste of resources (and development time and money).

In this light, on an arbitrary scale of 1 to 5, what is your bias on the question of features vs. speed?

More speed; fewer features	More features; less speed
1	2 3 4 5

8. Priorities

A project of this nature involves a multitude of trade offs. By now, you've dealt with most of the either/or situations. Yet there are many other factors by which you might judge the success of a project. Listed below are some of the criteria that might be important to you. There are also blanks for you to enter other criteria. Please rank these criteria on a 0-1-2-3-4-5 basis where 5 is your top priority and 0 for items that aren't important at all.

Please answer the questions carefully. You cannot have priority of 5 for Low Cost and expect to have a 5 for Accuracy in Handling Data or Short Training Curve, where in both cases more programming is required to adequately trap or manipulate the Handling Data or automate the operability to allow for a Short Training Curve!

9. Ranking Priorities

- ___ Cost
- ___ Accuracy in handling data
- ___ Fast delivery
- ___ Staff Ease of Use
- ___ Feature Set
- ___ Speed of Data Operations
- ___ Data Conversion
- ___ Short Training Curve
- ___ Visual Appeal (layouts, reports etc)
- ___ Error Trapping
- ___ Minimal Disruption to Your Office Operations

Hopefully the above will have explained in general terms the process of analyzing database and all the ramifications inherent in the process. If you have any queries about this information, or wish to discuss your specific needs, please call or email:

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