

Data Entry - the problem of GIGO (Garbage In Garbage Out)

In designing an Information system every step should be taken to reduce the possibility of errors be entered in. There is a whole sequence of steps that should be taken.

- Design / Method of Data Capture.
- Data Entry.
- System Data Dictionary / Structure + Validation
- Verification.

Design / Method of Data Capture.

Humans are the source of wrong information being entered. The easier and less involved humans are in the process the more accurate the data being entered will be. Electronic transfer / entry of data from source is the most likely way to reduce errors on entry. Swiping a debit card (or today Chip and pin) means little opportunity for errors to creep into the system.

Keyboards are probably the biggest source of faulty data entering a system. Keyboards used by people who have no interest in the accuracy affecting their task are most prone to entering wrong information. If Handwritten forms are the source of entry then the design of form (paper and on screen) is key to reducing errors.

Consider these 2 forms. Which will yield greatest accuracy?

Data capture form for invoices:

Full Name:

Company:

Address:

Postcode:

VAT Number:

NJP Environmental staff should fill out the rest of the form:

Data:

Services: VAT: Total:

Invoice number:

Customer number:

Or this one?



Sample: Data capture form for invoices:

Please complete using Block Capitals and a Black pen in the boxes provided. This is for ease of reading. Please tick ✓ any option boxes that apply. Thank you for your support.

Title:

Mr / Mrs / Miss / Ms / Doctor

Forename:

Surname:

Gender:

Female Male

Company:

Address 1:

Door Number / Road

Address 2:

Town:

County:

Postcode:

VAT Number:

NJP Environmental staff should fill out the rest of the form:

Data:

Services:

VAT:

£,.

Total:

£,.

Invoice number:

Customer number:

The second is not perfect but much better than the first. There should be clear instructions on how to complete. The number of boxes / spaces provided should match the number permitted in the computer system. Tick boxes should use a different symbol, again all options that can be entered should be displayed.

Data Entry.

When the “Data capture form” is actually keyed into the system. The on screen form should match the layout and have Validation checks in place. Validation checks are best defined within the Data Dictionary or Database Structure

System Data Dictionary / Structure Field Properties / Validation

Field properties determine how a field is stored, what can be done with it and how it is displayed. Default field properties will be assigned to each field, depending on the data type. The default field properties are appropriate for many databases but you can change them if you wish.

Validation checks help ensure that the data stored in each field is reasonable and accurate. Some of the different field properties that can be used to validate data in Access are listed below.

Field property	
Field size	This is the maximum size or length of a field. For example, the field size for a customer’s name could be 10. If a name longer than 10 characters was entered the computer would reject it. Knowing the field size means that a field length validation check can be carried out. A Memo field has an unlimited length.
Format	Determines the way a field is displayed or printed. For instance, a date could be displayed as short (15/01/2006) or medium (15-Jan-06).
Input mask	Enables you to define a character string to act as a template so that a format check can be carried out on the data. For example, a date may have to be entered in dd/mm/yyyy form for the UK. Dates not entered in this form would be rejected.
Caption	A label other than the field name that you can use for forms and reports.
Default value	A value that is automatically entered in a field in each record of the table.
Validation rule	Despite its name this field property is a generally considered to be a type of validation check called a range check. This ensures that the values entered into the field are within a specific range. For example, a domestic gas bill might be checked to see if it lies between £0 and £1000. Bills outside this range would be considered exceptional and checked for errors.
Validation text	The message you would like displayed if the validation rule is not satisfied. In our example, the message could be “Value must not exceed £1000”.
Required	This is a presence check. If a record is entered but no value is in this field, the record will be rejected and an error message displayed, such as “Customer name must be entered”.
Allow zero length	Allows a text or memo field to be filled with blanks.
Indexed	Builds an index on a field. Tables are searched or sorted faster when a field is indexed. A primary key field is always indexed.

Field Sizes

If you select Number as the data type in Access you can choose different Field Sizes. Some of these are listed below.

Numeric field size	
Byte	A number in the range 0 to 255
Integer	A number in the range -32,768 to 32,767
Long Integer	A number in the range -2,147,483,648 to 2,147,483,647
Single	A single precision floating point value with about 7 digits of accuracy
Double	A double precision floating point value with about 15 digits of accuracy
Decimal	A decimal number with up to 28 digits of accuracy

Verification

Verification is a check to ensure that the data entered exactly matches the original source. There are two main methods of verification:

- **Double entry** (typing the data in twice and comparing the two copies) - This can take much more time and means higher wage costs.
- **Proofreading data** - This method involves somebody checking what is on the screen is the same as on the input document. Again, this is time consuming and costly.