

Verification

Is checking the data input manually. It's done mostly by comparing the inputted data with the original source (proof-reading). Sometimes it's done by typing in the data twice and then you compare if the result is the same!

- old-fashioned
- expensive procedures (double work!)
- slow data control

Validation

Checking of the data input with the help of the computer itself. The data will be checked using rules or definitions. They can be defined / adjusted by the user of the system!

Range Check

Data will be checked if it is in between defined values. E.g. the age of a person cannot be negative and not more than 125 ! ($125 > \text{Age} \geq \text{zero}$)

Type Check

Data will be checked if it is of a certain type. Easy to check are characters, numbers, date and time. E.g. age of a person must be a *NUMBER*

Length Check

Data will be checked if it is of a certain length. Easy to check are the length of numbers, date and again time. E.g. age can never be more than 3 digits long!

Spelling / Grammar Check

Wordprocessors can check the spelling of words and compare against words in their dictionary.

Avoiding data errors

Indirect data input (using keyboards)

Use all validation methods possible!

- So don't forget to do a spellcheck, grammarcheck, put validation checks into the field definitions of e.g. your database etc.!

Direct data input (using direct input devices)

If possible use direct data input !

These are input devices that cause less mistakes compared to typing data on a keyboard.

Examples:

- Barcode recognition (using barcode scanners at e.g. POS - point of sales in supermarkets)
- OMR (using Optical Mark Readers / scanners, e.g. for examining tests)
- OCR (using magnetic ink recognition / scanners, e.g. scanning a postcode on letters to sort the mail)
- Magnet Cards (using card readers - post / banks, e.g. used to identify the customers)
- Chip Cards (using card readers - e.g. for telephone cards)
- Sensors (automatic non-stop data input, e.g. in traffic control or air conditioning systems)