Bab 13: Perancangan Input dan Prototyping

Analisis dan Perancangan Sistem informasi

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Source: Whitten, J.L., L.D. Lonnie and K.C. Dittman, Systems Analysis and Design Methods, 6th ed., McGraw-Hill, Boston, 2004.

Bab 13

Referensi

- Whitten, bab 16

Topik

1. Konsep Perancangan Input
2. Perancangan dan Prototyping Input

1. Konsep Perancangan Input

- **Data capture** – identifikasi dan akuisisi data baru (dari sumbernya)
- **Data entry** – proses menerjemahkan *source data* atau dokumen dalam format yang dapat dibaca komputer
- **Data processing –** semua proses yang terjadi pada data setelah dimasukkan dalam format yang dibaca oleh mesin
  - Dalam **batch processing**: data yang dimasukkan dikumpulkan dalam file yang disebut *batch* dan diproses sebagai *complete batch*
  - Dalam **on-line processing**: data yang telah di-captured langsung diproses
  - Dalam **remote batch processing**: data dimasukkan dan diedit secara on-line, namun dikumpulkan dalam beberapa batch untuk diproses berurutan

Input Implementation Methods

- Keyboard
- Mouse
- Touch Screen
- Point-of-sale terminals
- Sound and speech
- Automatic data capture
  - Optical mark recognition (OMR)
    - Bar codes
  - Optical character recognition (OCR)
  - Magnetic Ink
  - Electromagnetic transmission
  - Smart cards
  - Biometric

Taxonomy for Computer Inputs

Process Method	Data Capture	Data Entry	Data Processing
Keyboard	Data is usually captured on a business form that becomes the source document for input. Data can be collected real-time.	Data is entered via keyboard. This is the most common input method but also the most prone to errors.	OLD: Data can be collected into batch files (disk) for processing as a batch. NEW: Data is processed as soon as it has been keyed.
Mouse	Same as above.	Used in conjunction with keyboard to simplify data entry. Mouse serves as a pointing device for a screen.	Same as above, but the use of a mouse is most commonly associated with online and real-time processing.
Touch Screen	Same as above.	Data is entered o a touch screen display or handheld device. Data entry users either touch commands and data choices or enter data using handwriting recognition.	On PCs, touch screen choices are processed same as above. On handheld computers, data is sorted on the handheld for later processing as a remote batch.
Point of Sale	Data is captured as close to the point of sale as humanly possible. No source documents.	Data is often entered directly by the customer or by an employee directly interacting with the customer.	Data is almost always processed immediately as a transaction or inquiry.

Taxonomy for Computer Inputs (continued)

Process Method	Data Capture	Data Entry	Data Processing
Sound	Data is captured as close to the source as possible, even when the customer is remotely located.	Data is entered using touch-tones (typically from a telephone). Usually requires fairly rigid command menu structure and limited input options.	Data is almost always processed immediately as a transaction or inquiry.
Speech	Same as sound.	Data (and commands) is spoken. This technology is not as mature and is much less reliable and common than other techniques.	Data is almost always processed immediately as a transaction or inquiry.
Optical Mark	Data is recorded on optical scan sheets as marks or precisely formed letter, numbers, and punctuation.	Eliminates the need for data entry.	Data is almost always processed as a batch.
Magnetic Ink	Data is usually prerecorded on forms that are subsequently completed by the customer. The customer records additional information on the form.	A magnetic ink reader reads the magnetized data. The customer-added data must be entered using another input method.	Data is almost always processed as a batch.

Taxonomy for Computer Inputs (concluded)

Process Method	Data Capture	Data Entry	Data Processing
Electromagnetic	Data is recorded directly on the object to be described by data.	Data is transmitted by radio frequency.	Data is almost always processed immediately.
Smart Card	Data is recorded directly on a device to be carried by the customer, employee, or other individual that is described by that data.	Data is read by smart card readers.	Data is almost always processed immediately.
Biometric	Unique human characteristics become data	Data is read by biometric sensors. Primary applications are security and medical monitoring	Data is processed immediately.

2. Perancangan dan Prototyping Input: Design Guidelines

- Capture only variable data.
- Do not capture data that can be calculated or stored in computer programs as constants.
- Use codes for appropriate attributes.