Functional requirements

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"A functional requirement is a **behavior** that the product should **do** or **support**."

» Can be expressed with **inputs** and **outputs** and a description of the **behavior** itself.

» Note that: requirements have depth / details.

Example

a client wants a mobile point of sale product.

- it takes credit card payments through the client's proprietary credit card reader.
- It then sends a receipt back to the user with the transaction details.

The client also mentions that this product should meet the highest standards of security, as well as visual design.

example

» functional requirements involve inputs and outputs.

in this simple example

» we have one input, the data from the credit card reader,
» and one output, the receipt from the transaction.

So you could say the system

» must read data from the credit card reader
» and the system must also send a transaction receipt to the end user.

we've removed quite a few functional requirements.

example

imagine what the system should do

1. take as input the transaction information from the merchant
2. upon some confirmation action, the system should
   » present the buyer with information about the transaction
   » and ultimately take their PIN information

» Requirements can also have a certain depth to them.
» A functional requirement, which states that a user should be able to pay using a PIN pad, is not specific.

example

more specific requirements

» swipe a debit or credit card?

» insert a credit card or debit card into a chip reader?

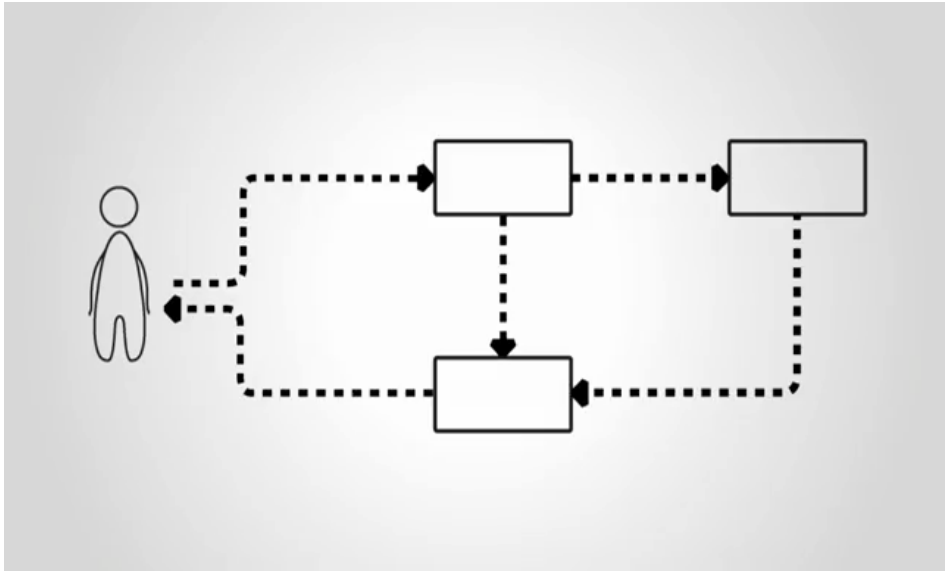
» a user will be able to enter their PIN when their card has been swiped or inserted.

Information flow diagram

Represent functional requirements by an information flow diagram

» Can be used to review the whole thing logically

- **Data flow** & **Dependencies** of all the system components
- » How individual components of the system are stitched together, as a whole



Quiz

- Imagine a scenario in which you're building a not-for-profit organization that rebuilds bicycles for low-income commuters in your neighbourhood.
- You receive bicycles from donors, which are made of aluminum, as well as money to buy tools.
- You then use these things to make the bikes work again and deliver them to your customers.

Which of the following would be considered the functional inputs and outputs of this organization?

- A. Input: Donated bicycles and purchased tools, Output: Customers.
- B. Input: Donated money, Output: Working bicycles.
- C. Input: Donated money and bicycles, Output: Working bicycles.
- D. Input: Aluminum from the bicycles, and donated money, Output: Working bicycles.

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- The organization receives money and bicycles which it then repairs and delivers to customers.
- The inputs are donated bicycles and money, because the tools are purchased using the money donated.
- These tools are then part of the process which is used to fix the bicycles.