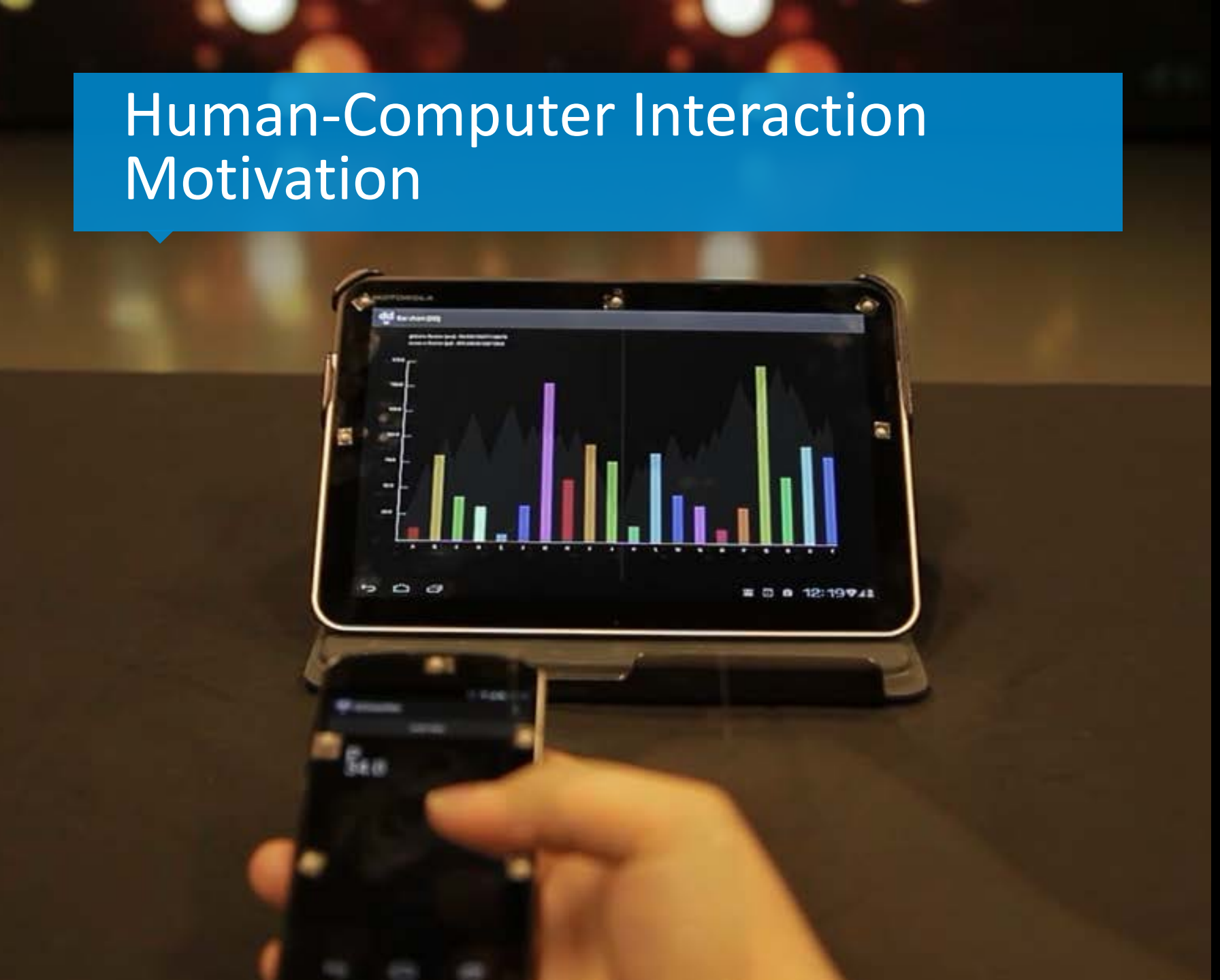
Human-Computer Interaction Motivation

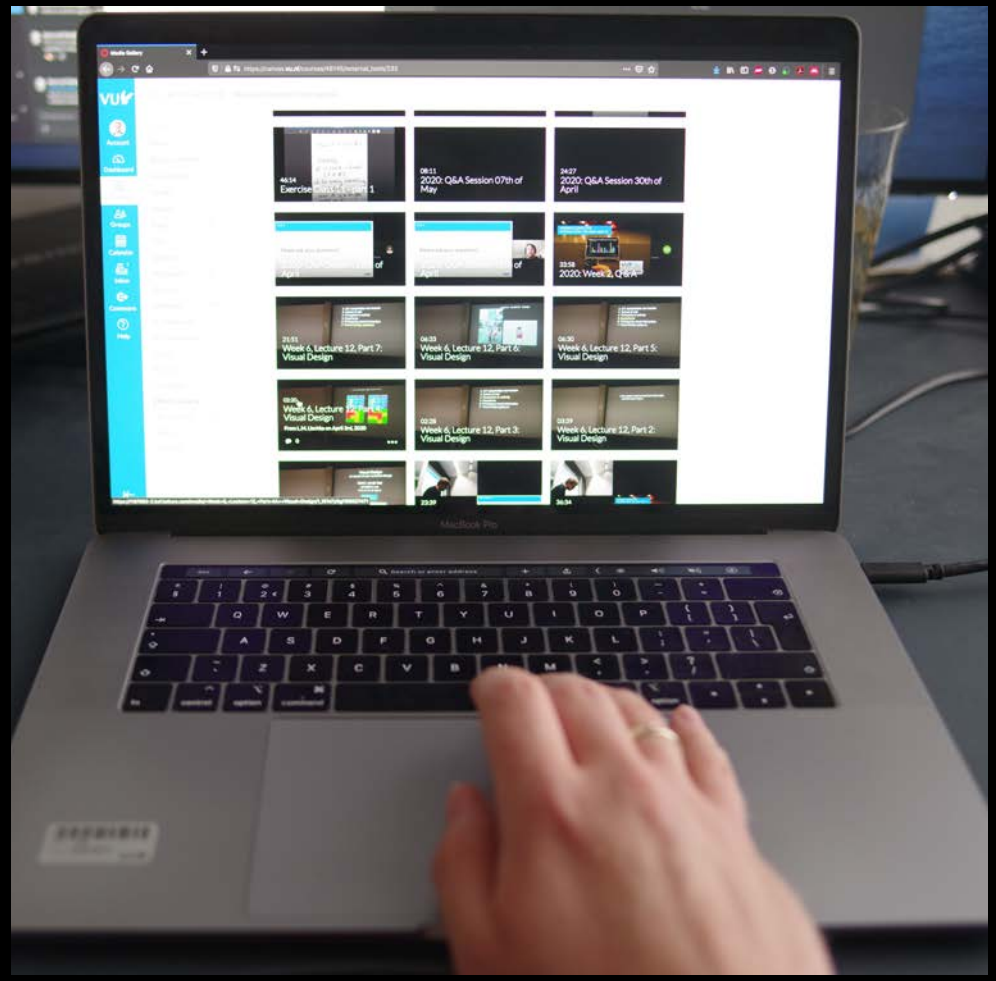


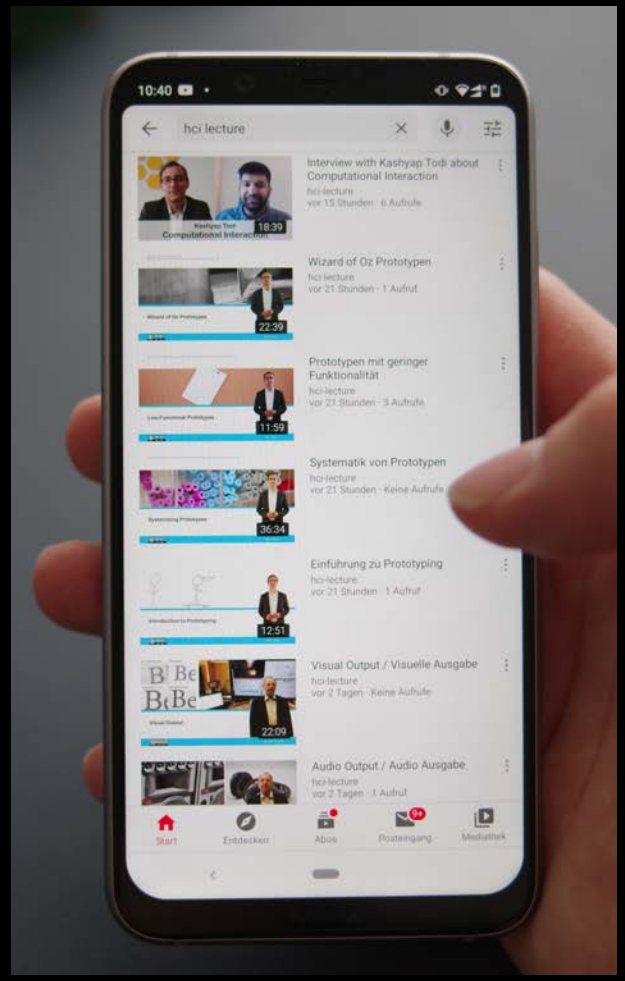
Goals of this Video

After watching this video you will be able to:

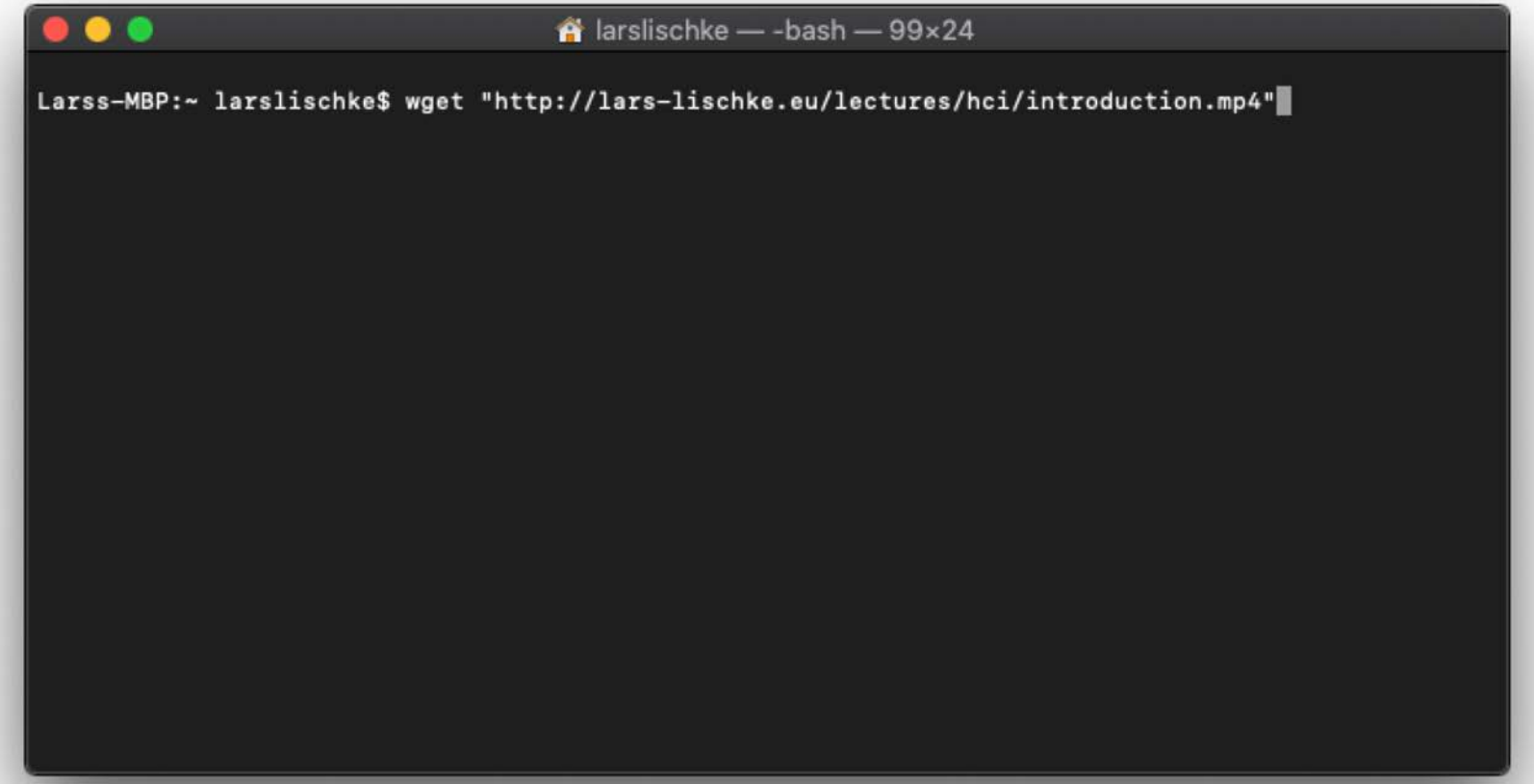
- Explain the relevance of Human-Computer Interaction (HCI) in businesses and academia
- Describe the specifics of the field HCI

Why is Human-Computer Interaction important?

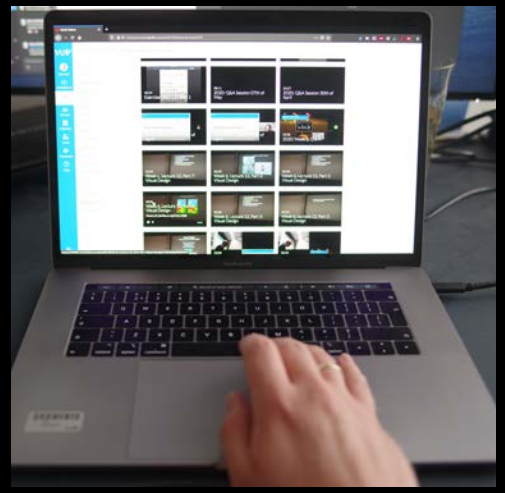


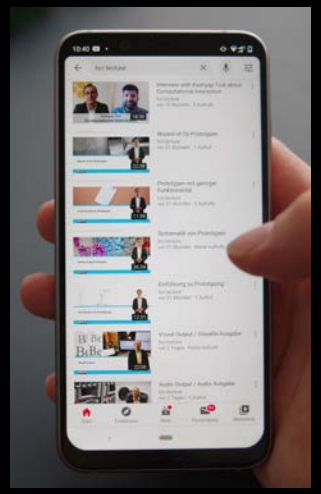


Why is Human-Computer Interaction important?



When Have You Interacted with a Computer?





How Does HCI Impact Us?

It determines how we use (digital) products.

It impacts …

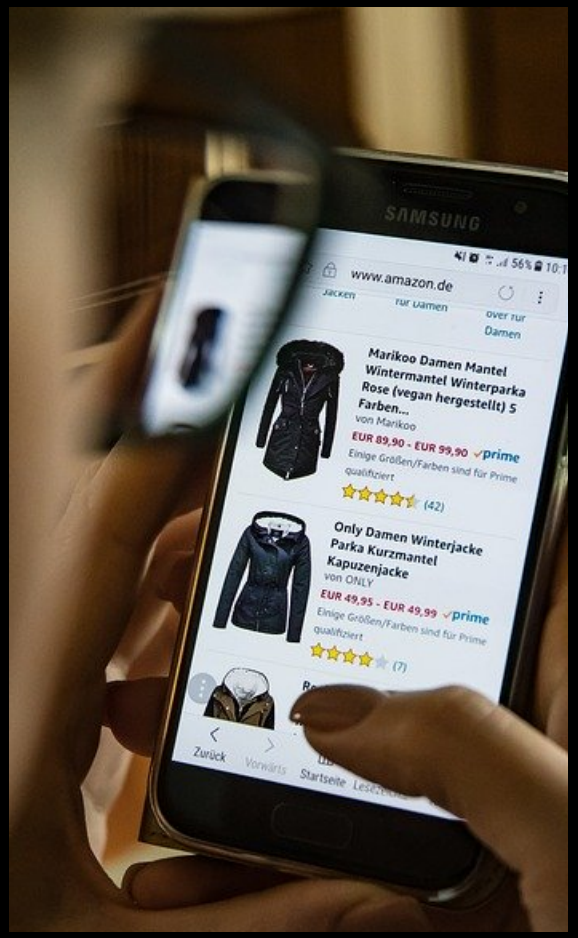
- what we can do with products and services,
- how easy it is to work with a software,
- how quickly you can learn to use a system,
- how safe a product is.

It is central to how we feel and what we experience while interacting with digital technologies.

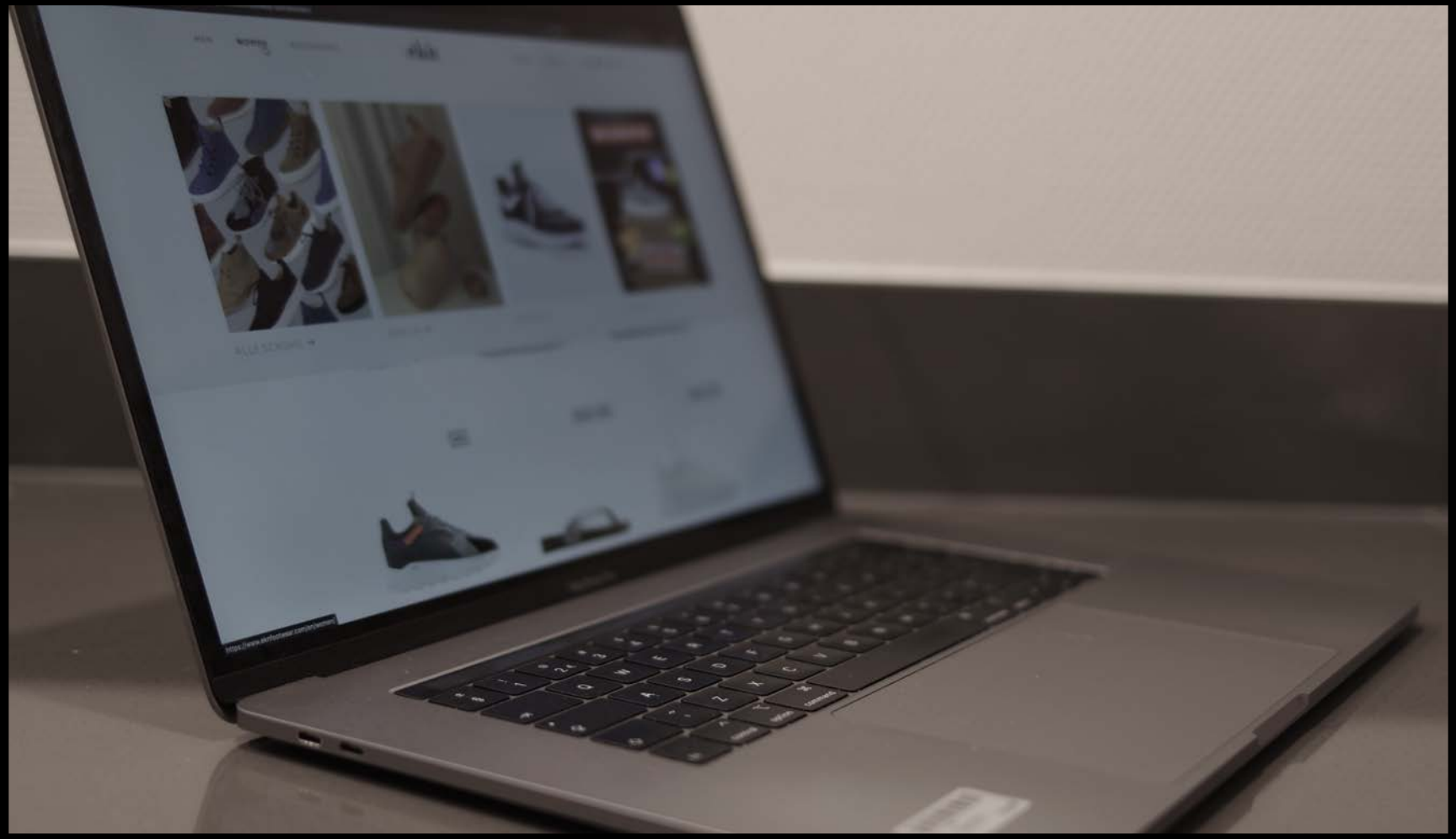
WHY IS USABILITY IMPORTANT?

Improving usability can

- increase productivity of users,
- increase the enjoyment,
- reduce costs (support, efficiency),
- increase sales/revenue (web shop),
- enhance customer loyalty, or
- win new customers.



ECONOMIC DIMENSION OF USABILITY?



WHY FOCUS ON USER AND INTERACTION?

- It becomes harder to discriminate by technology
- Availability of bandwidth, storage and processing
- New input and output technologies
- Computing becomes part of many traditional devices
- Willingness for learning applications decreases
- Life-style technologies are more and more digital
- Broad and diverse user groups
- Majority of user are not interested in the technology

HUMAN COMPUTER INTERACTION
…IT IS ABOUT VISIBLE INNOVATION

Problems

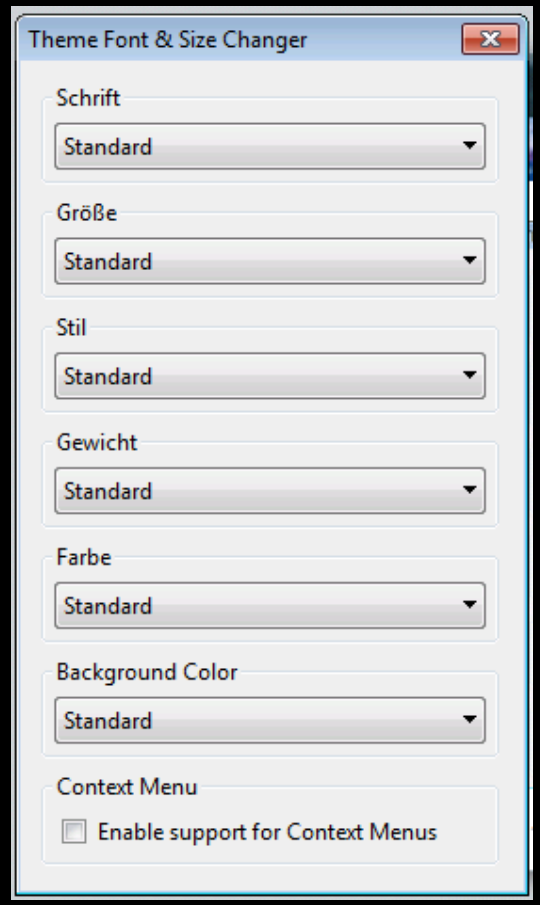
- often not seen as problem before there is a solution
- if problems are identified, they are easy to understand

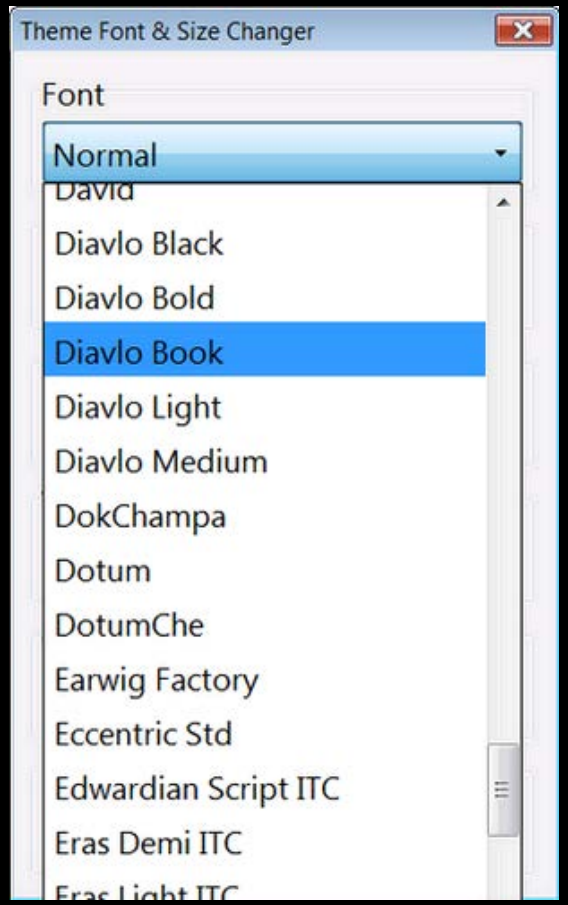
Solution

- once a solution is there, people will not remember that there was a problem
- good solutions often appear obvious

The step from problem to solution is however not trivial

EXAMPLE: SELECTION/MENU FOR FONTS





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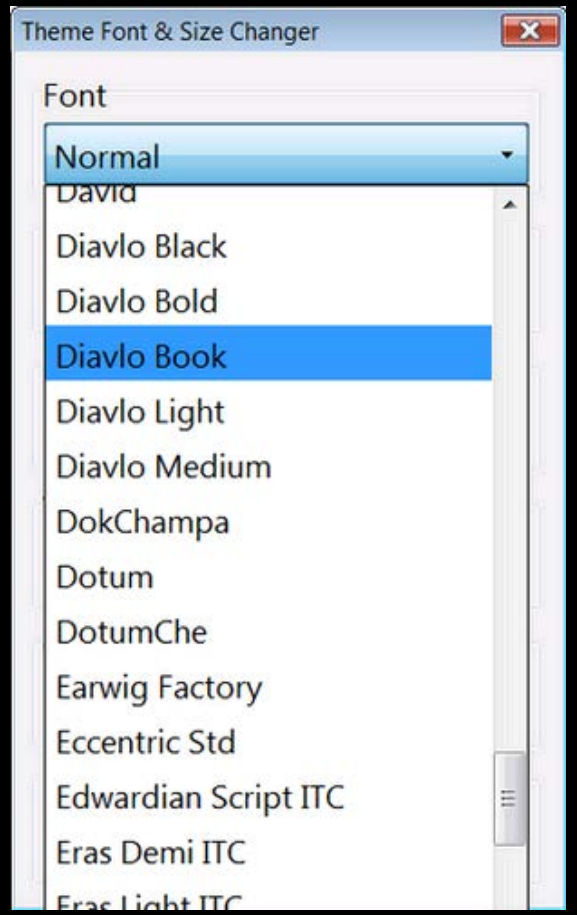

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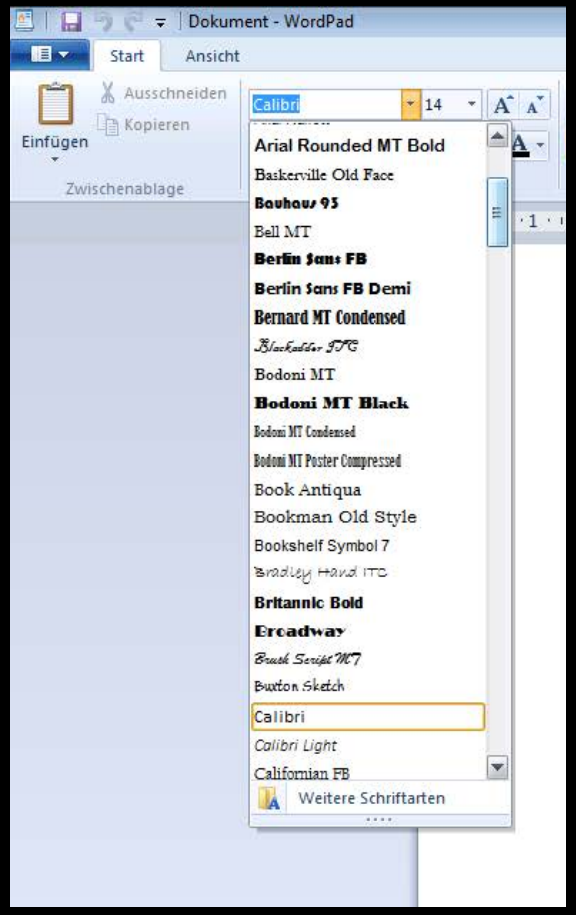
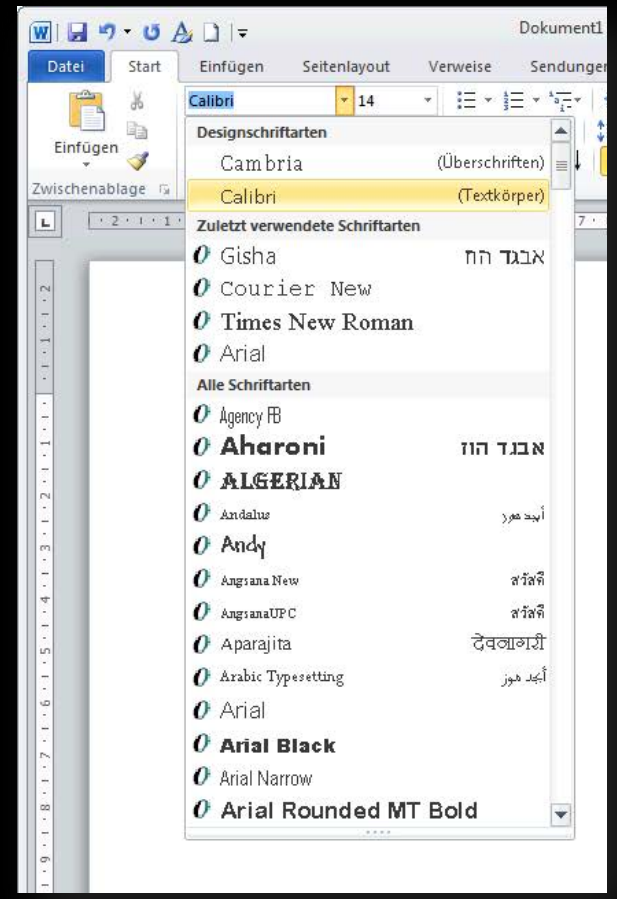


WordPad/Win7



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HUMAN-COMPUTER INTERACTION

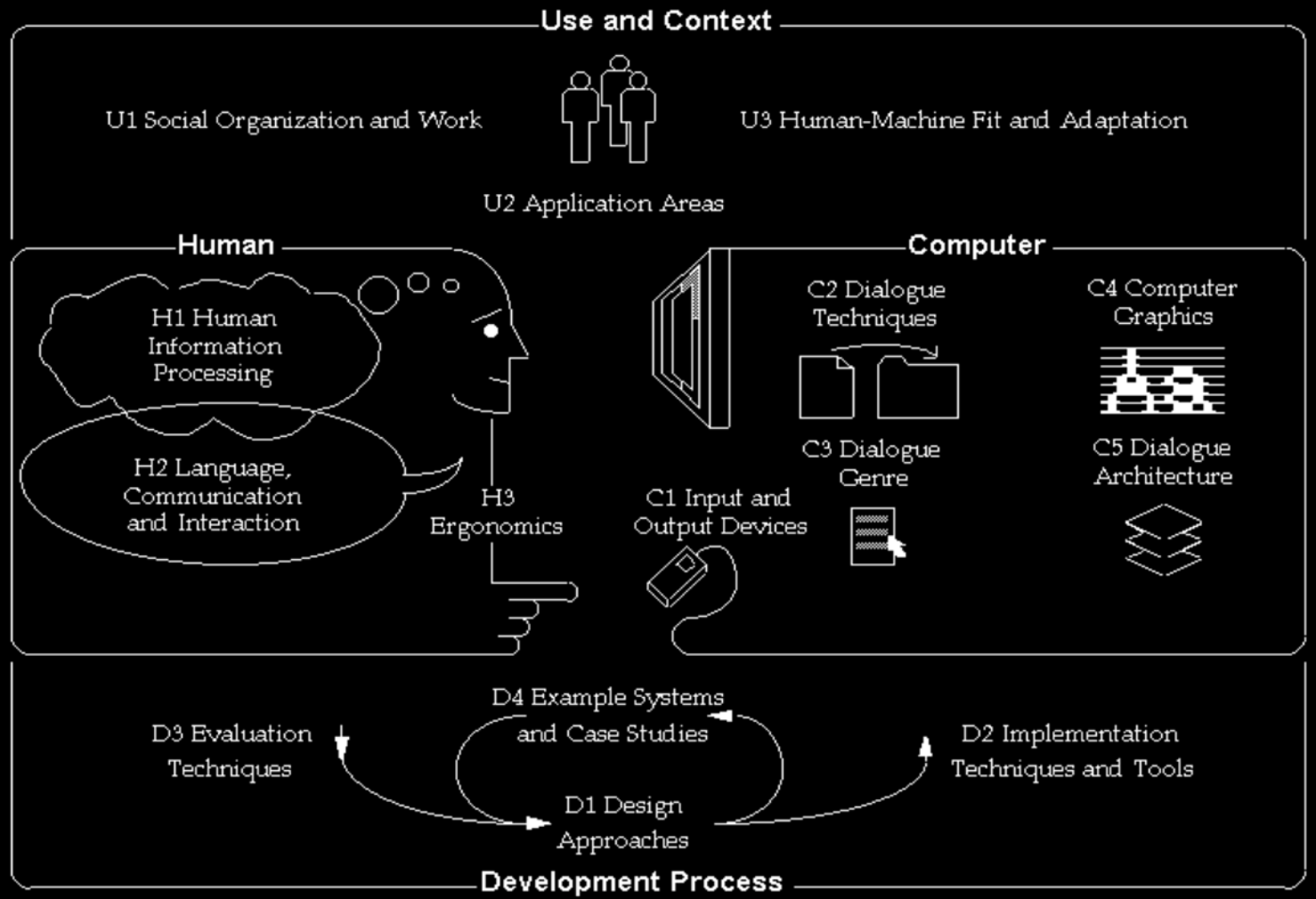
"Human-computer interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them"
(working definition in the ACM SIGCHI Curricula for HCI [1])

HUMAN-COMPUTER INTERACTION

"Human-computer interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them"
(working definition in the ACM SIGCHI Curricula for HCI [1])

Computer science view point:
"Interaction between one or more humans and one or more computational machines"

CONCERNS IN HUMAN-COMPUTER INTERACTION



From ACM SIGCHI Curricula for HCI [2]

Adopted from: Chakraborty, B. K., Sarma, D., Bhuyan, M. K., & MacDorman, K. F. (2017). Review of constraints on vision-based gesture recognition for human–computer interaction. *IET Computer Vision*, *12*(1), 3-15.

HOW WOULD A USER INTERFACE LOOK LIKE? MAKE SKETCHES FOR 2 ALTERNATIVE INTERFACES.

```
String translate(int fromLanguage, int toLanguage, String
wordToTranslate)
// translate is a function to translate a word(wordToTranslate) from one
// language (fromLanguage) in another (toLanguage).
// Example: translate(1, 3, "House")
// fromLanguage is the given language (1 = English, 2 = Spanish, 3 =
German)
// toLanguage is the language in which the word should be translated
// (1 = English, 2 = Spanish, 3 = German).
// The result is Haus.

Float convert(int fromCurrency, int toCurrency, float amount)
// convert is a function converting a sum from one currency
(fromCurrency) to
// another (toCurrency).
// Example: convert(6, 7, 84.52)
// formCurrency is the given currency
// (6 = Euro, 7 = US Doller, 8 = British Pound)
// toCurrency is the target currency (6 = Euro, 7 = US Doller, 8 =
British Pound)
// The result is 95,28 USD
```

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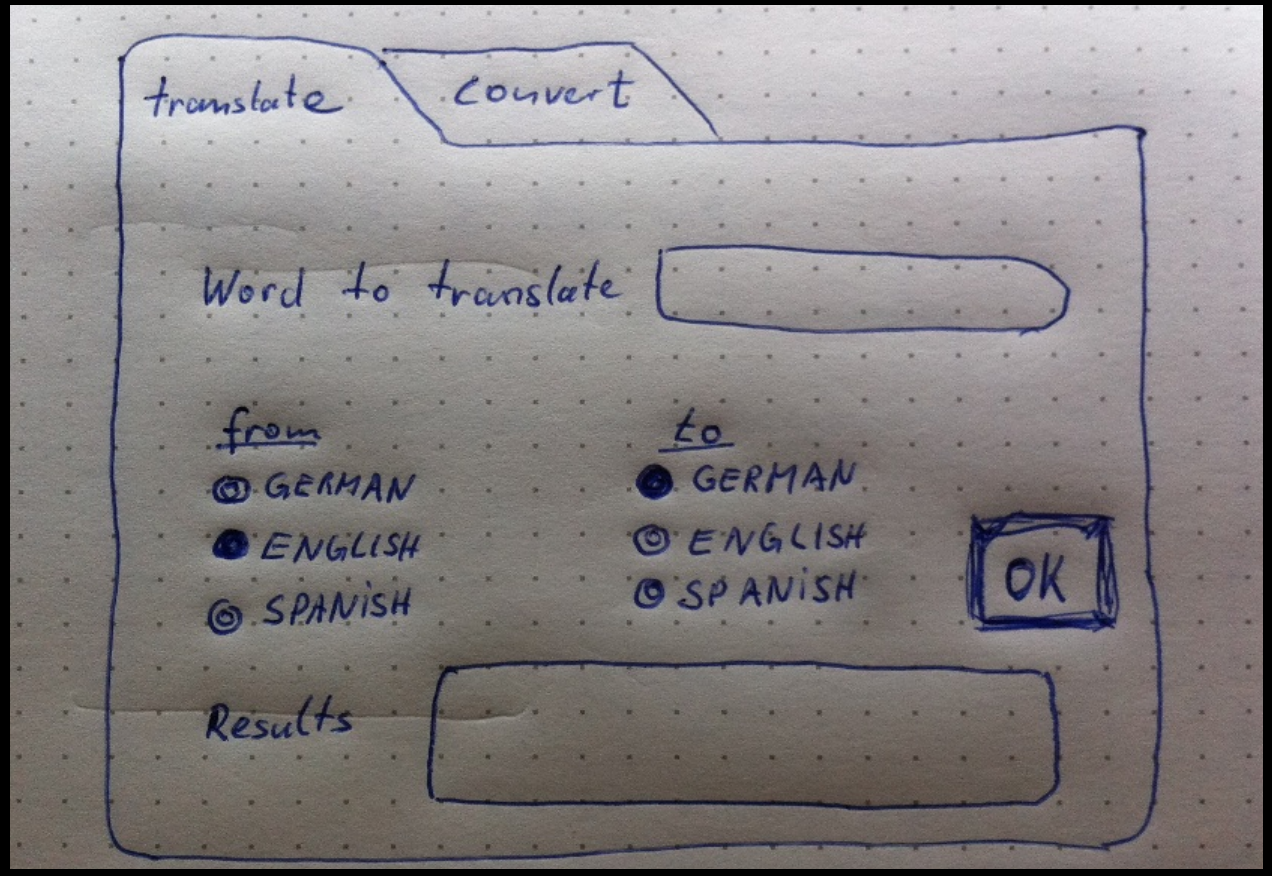

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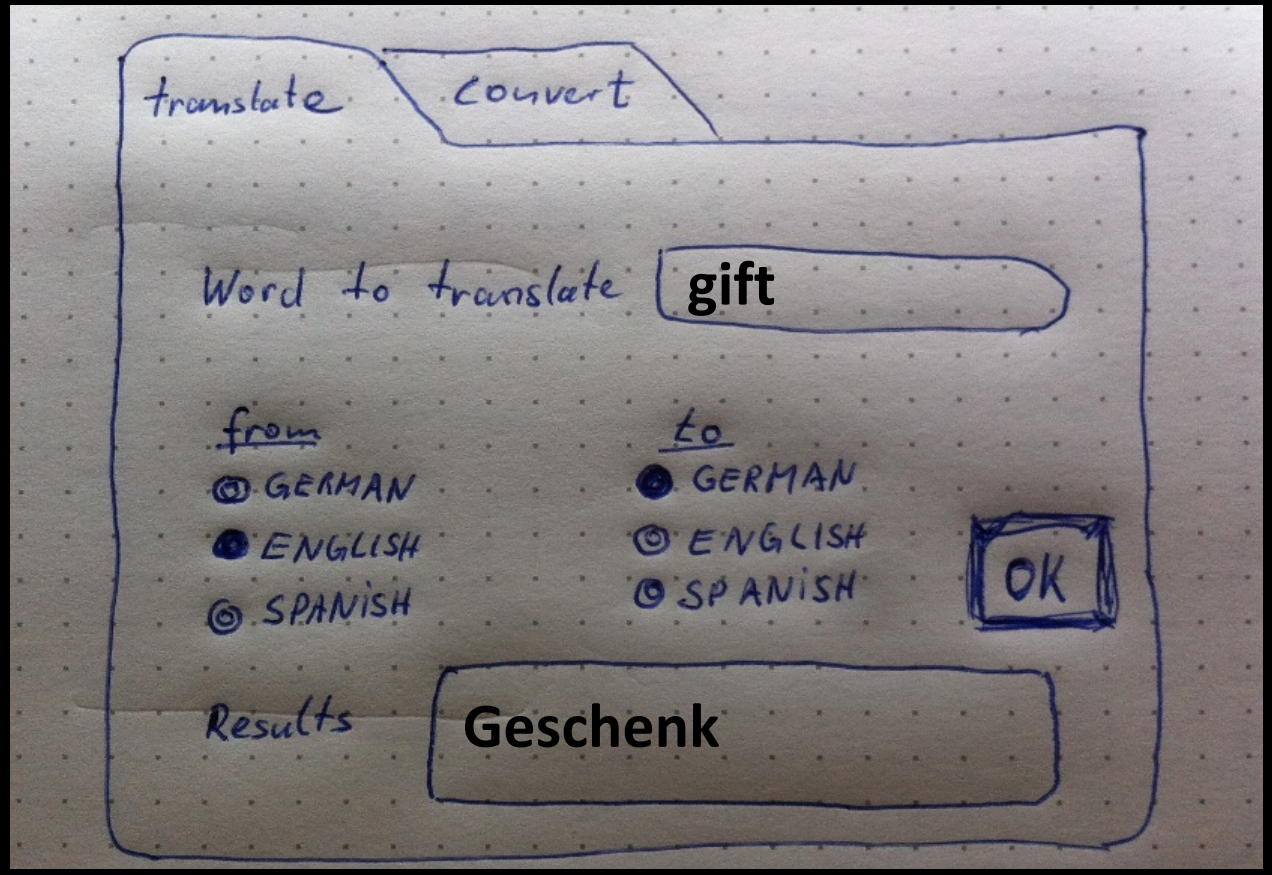

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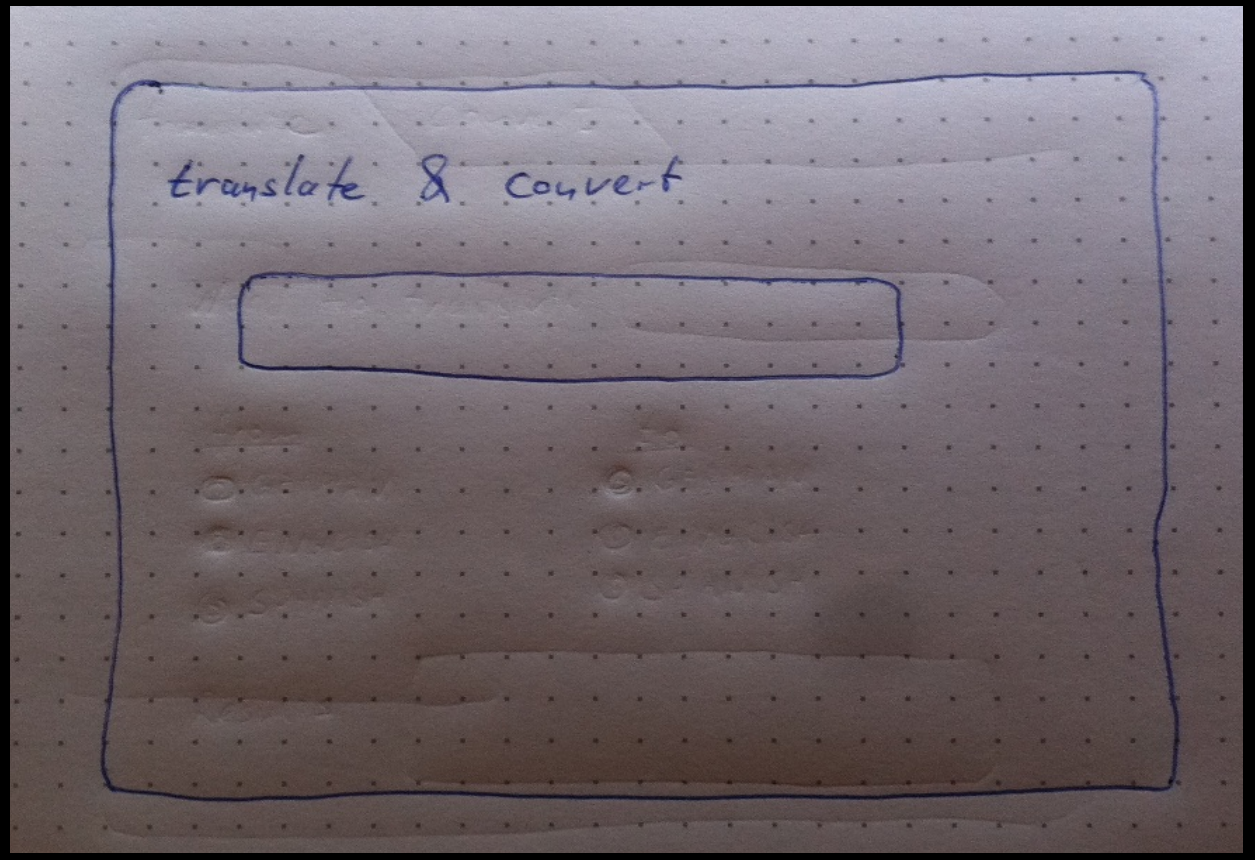

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REFERENCES

[1] Thomas T. Hewett, Ronald Baecker, Stuart Card, Tom Carey, Jean Gasen, Marilyn Mantei, Gary Perlman, Gary Strong, and William Verplank. 1992. *ACM SIGCHI Curricula for Human-Computer Interaction*. Technical Report. ACM, New York, NY, USA.

ACKNOWLEDGEMENTS

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Albrecht Schmidt