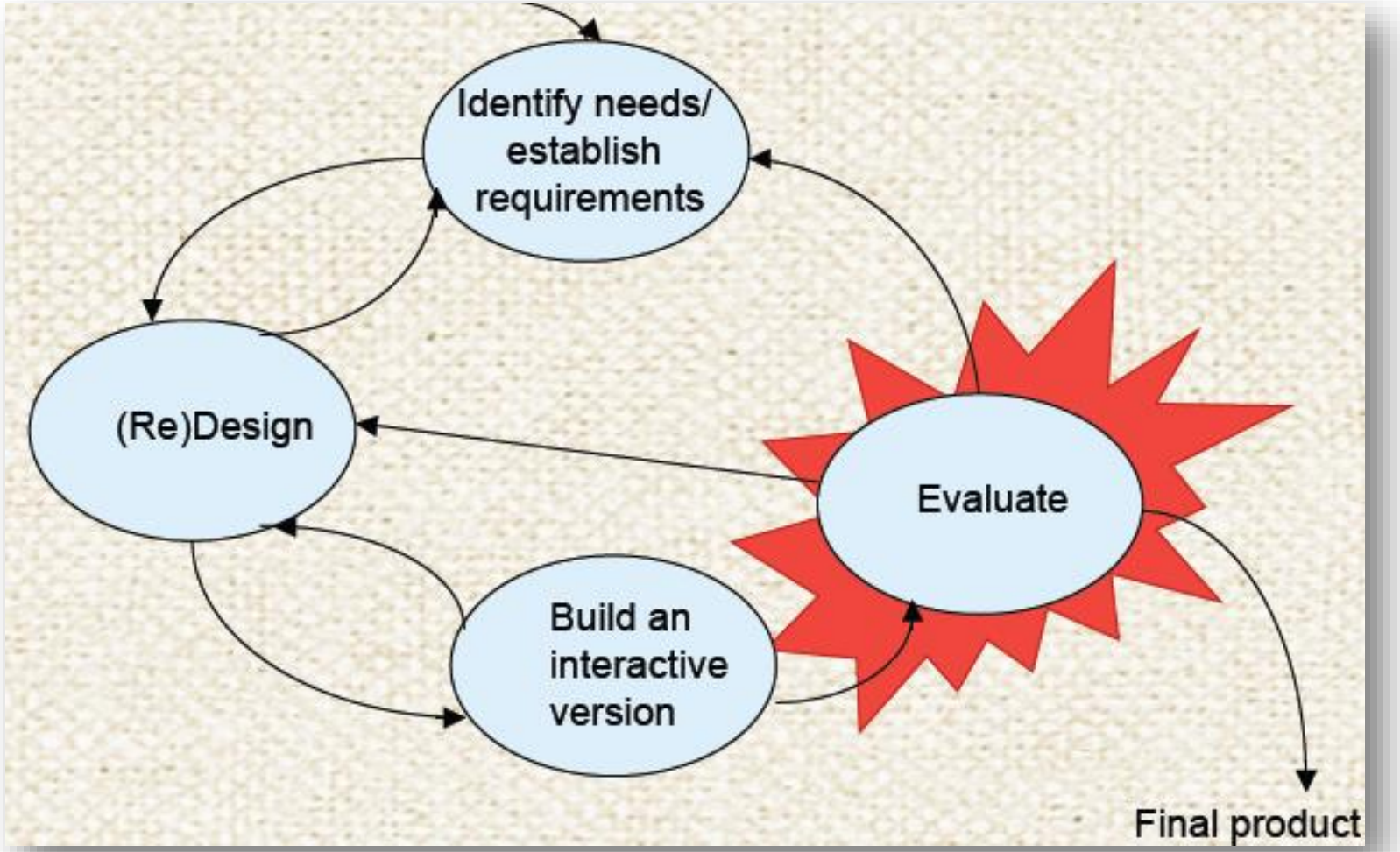

Evaluasi

# Interaksi Manusia dan Komputer

# Evaluasi

- **Evaluasi** -> suatu tes atas tingkat penggunaan dan fungsionalitas system yang dilakukan di dalam laboratorium, di lapangan, atau di dalam kolaborasi dengan pengguna.
- Proses **evaluasi** tidak dikerjakan dalam satu fase proses perancangan tetapi melalui perancangan dengan prinsip **life cycle**, dengan hasil dari evaluasi dikembalikan untuk memodifikasi perancangan.

# Evaluasi dalam Proses Desain



# Tujuan Evaluasi

- Mengetahui apakah hasil rancangan dengan proses **ujicoba system** yang telah dibuat sesuai dengan **permintaan pengguna** (user).
- Melihat efek interface bagi pengguna terhadap kemudahan utk mempelajari sistem, usability dan perilaku user.
- Mengidentifikasi problem khusus yg terjadi pada sistem

# Why, what, where and when to evaluate?

- **Why**: to check that designers understand requirements, that users can use the product, that they are satisfied with it.
- **What**: a conceptual model, early prototypes of a new system and later, more complete prototypes.
- **Where**: in natural and laboratory settings.
- **When**: throughout design; finished products can be evaluated to collect information to inform new products.

# Evaluation approaches and methods

| Method | Usability testing | Field studies | Analytical |
|---|---|---|---|
| Observing | | | |
| Asking users | | | |
| Asking experts | | | |
| Testing | | | |
| Modelling | | | |

# Usability Testing

- Testing products, not users.
- Representative tasks and users
- Controlled environmental settings.
- Typical methods
  - User test
    - Users observed and timed
    - Estimate performance and errors
  - User satisfaction
    - Questionnaire and interviews
    - Obtain impressions and opinions

# Field studies

- Performed in natural settings.
- Aim is to understand what users do naturally and how technology impacts them.
- Can be used to:
  – identify opportunities for new technology;
  – determine design requirements;
  – decide how best to introduce new technology;
  – evaluate technology in use.

# Analytical evaluation

- Inspections
  - Heuristic evaluation
  - Walkthroughs
- Predictive models

# Heuristic evaluation

- Visibility of system status.
- Match between system and real world.
- User control and freedom.
- Consistency and standards.
- Error prevention.
- Recognition rather than recall.
- Flexibility and efficiency of use.
- Aesthetic and minimalist design.
- Help users recognize, diagnose, recover from errors.
- Help and documentation

# Cognitive walkthroughs

- Focus on ease of learning.
- Designer presents an aspect of the design & usage scenarios.
- Expert is told the assumptions about user population, context of use, task details.
- One of more experts walk through the design prototype with the scenario.
- Experts are guided by 3 questions.
  - Will the correct action be sufficiently evident to the user?
  - Will the user notice that the correct action is available?
  - Will the user associate and interpret the response from the action correctly?

# Predictive models

- Provide a way of evaluating products or designs without directly involving users.
- Evaluation in term of predictions of time and errors.
- Less expensive than user testing.
- Usefulness limited to systems with predictable tasks - e.g., telephone answering systems, mobiles, cell phones, etc.
- Based on expert error-free behavior

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# DECIDE: a framework to guide evaluation

- Determine the goals.
- Explore the questions.
- Choose the evaluation approach and methods.
- Identify practical issues.
- Decide how to deal with the ethical issues.
- Evaluate, analyze, interpret and present the data.

# Determine the goals

- What are the high-level goals of the evaluation?
- Who wants it and why?
- Some examples of goals:

1. Identify the best metaphor on which to base the design.
2. Check to ensure that the final interface is consistent.
3. Find out why many customers prefer to purchase paper airline tickets rather than e-tickets

# Explore the questions

- All evaluations need goals & questions to guide them.
- E.g., the goal of finding out why many customers prefer to purchase paper airline tickets rather than e-tickets can be broken down into sub-questions:
  1. What are customers' attitudes to these new tickets?
  2. Are they concerned about security?
  3. Is the interface for obtaining them poor?

# Choose the evaluation approach & methods

- The evaluation approach influences the methods used, and in turn, how data is collected,analyzed and presented.
- E.g. field studies typically:
  - Involve observation and interviews.
  - Do not involve controlled tests in a laboratory.
  - Produce qualitative data.

# Practical and ethical issues

- Identify practical issues
  - Select users
  - Stay on schedule
  - Find evaluators
  - Select equipment
- Decide how to deal with ethical issues
  - Know the goals of the study;
  - Know what will happen to the findings;
  - Privacy of personal information;
  - Leave when they wish;
  - Be treated politely.

# Evaluate, interpret & present data

- The approach and methods used influence how data is evaluated, interpreted and presented.
- The following need to be considered:
  - Reliability: can the study be replicated?
  - Validity: is it measuring what you expected?
  - Biases: is the process creating biases?
  - Scope: can the findings be generalized?
  - Ecological validity: is the environment influencing the findings?

# Tugas

- Diskusikan dan pilih metode evaluasi
- Lakukan evaluasi terhadap system (tugas besar) yang sudah dibuat berdasarkan metode evaluasi yg telah dipilih