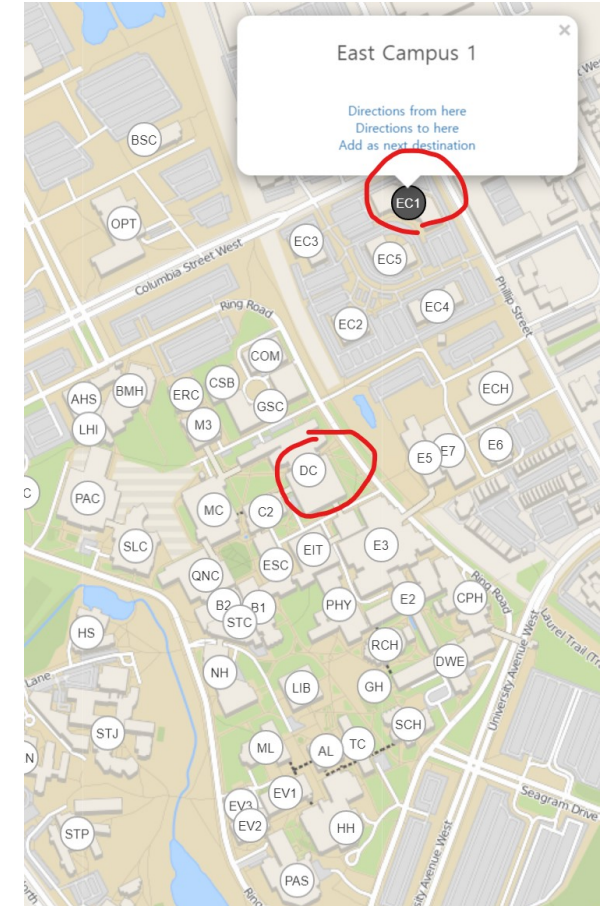# Cost of prototyping in architecture

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About me

- Junhyeok Kim
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- Human Computer Interaction, Games
- At the Games Institutes in EC1

Presentation outline

- Intro
- Problem
- Proposing direction

Introduction

- We don't just build a building
- We need a design document of the building that we are going to build

Introduction:
Architecture design process

- Information (requirement) gathering when designing architectural building

- Prototypes are used to communicate with client (user) before implementation stage

Introduction:
Cost of building

- We think mainly tangible costs: Land (site), materials

- What about time-cost?
  - It generally translates to labour in industry

- What about design cost?

Introduction:
Design cost

- In architectural design, there are several steps to designing a building

- Different steps need different stakeholders

- In those, one needs user (client) to learn the requirement about building
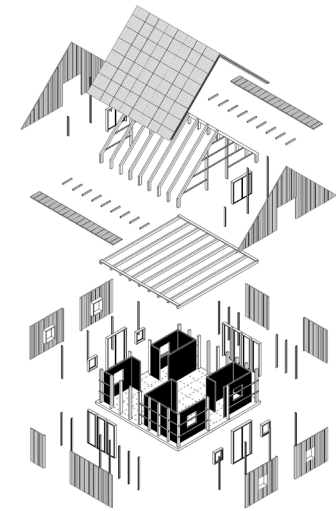
Introduction:
Information gathering from user

- Specialists use prototyping (physical, digital) to communicate with client
  - Physical: costly (money, time)

  - Digital (2D, 3D): clients usually do not understand, may not represent the design well

Introduction:
e.g. designing a house

- Need one room? Two rooms?
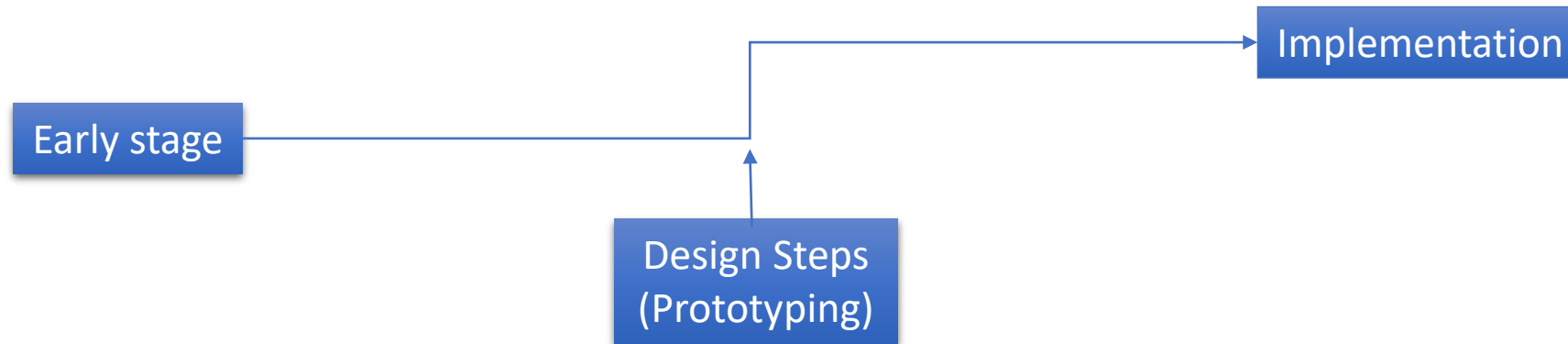
- Two stories?

- Yard? Basement?

Problem

- User doesn't know what EXACTLY want, how s/he want

- IKIWISI (I'll know it when I see it)

- Need to iterate many prototypes for clients
  - Costly (time, money) for both architects, clients

Question

• should we skip the prototyping phase?

Future cost:
S/W engineering

- Extensive design phase to minimize future cost
  - Future cost: debugging, modifications
- Conduct user study to get insight how user feel about the product (UX design)

Future cost:
Architecture

- Maybe remodel, renovation required after implementation
- Low satisfaction to user

Prototyping is good

- Doing iterative prototyping is better if
  - Unsure user requirements
  - At all

Prototyping limitations

- Prototyping introduce upfront cost a lot

- How much do we save by doing prototyping in architecture?
  - Time, money

- How to balance between upfront design cost and future cost?
  - Time, money

What to explore

- We need to find out how much cost each component

- Time cost for architecture:
  - Time to complete implementation (building) vs. prototyping

- Money cost for architecture:
  - Remodeling/renovation cost vs. prototyping cost

Yet another consideration ..

- Can we minimize prototyping cost (money and time)?
  - Maybe

To go further

- Architecture building modular design
    - For prototype
    - For implementation