Class Intro

HIIM 501

Infrastructure of Informatics

Infrastructure is much more important than *Architecture*

— *Rem Koolhaas*

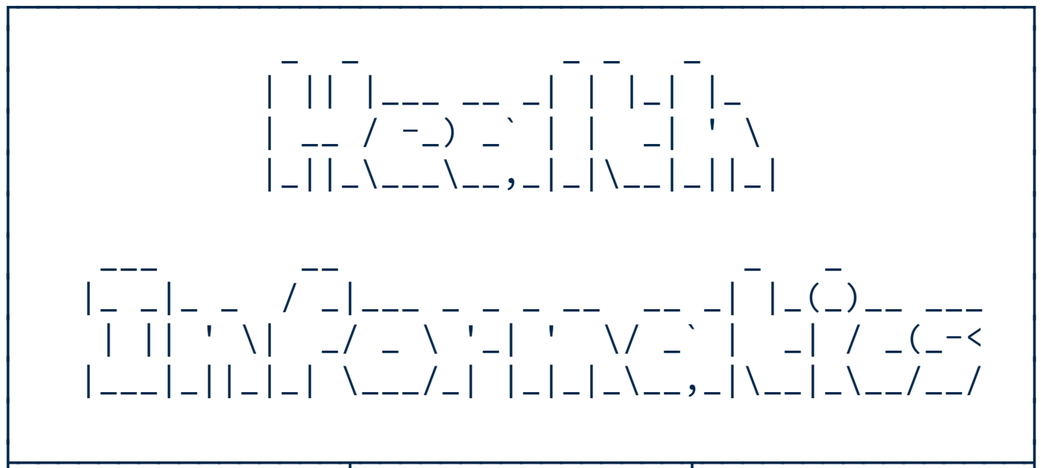
What **is** infrastructure?

Discuss

Infrastructure is *pre-solved* problems.

The Infrastructure of Informatics

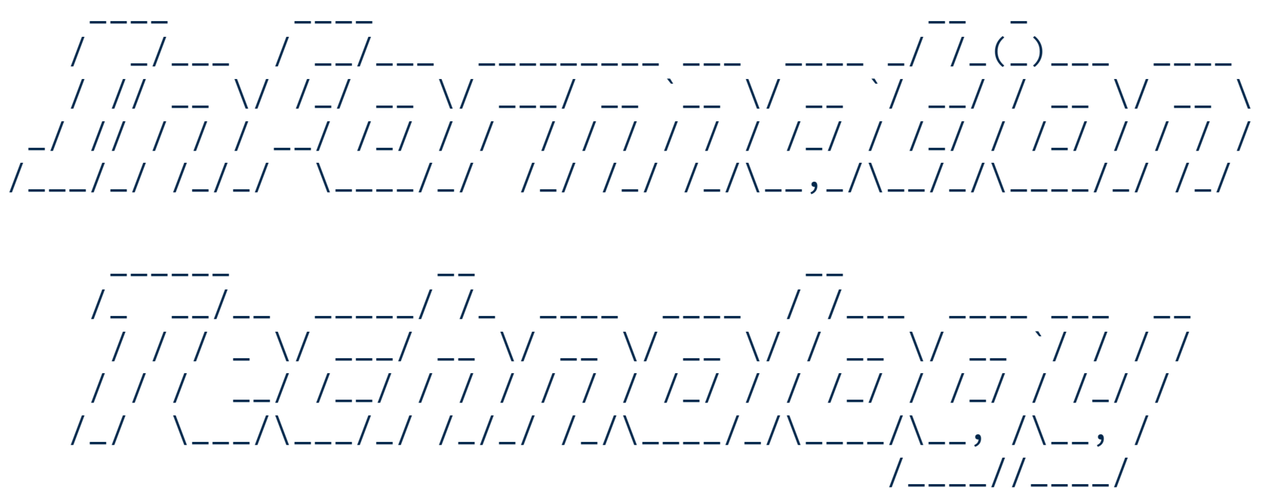
Information Technology is the Infrastructure of Health Informatics



Computers	Algorithms	The Web
Software	Networking	Blockchain

Information Technology

Information technology includes any *device*, *protocol*, *application* or other *artifact* we use in the capture, storage, retrieval, and use of information.



Process

System

Design

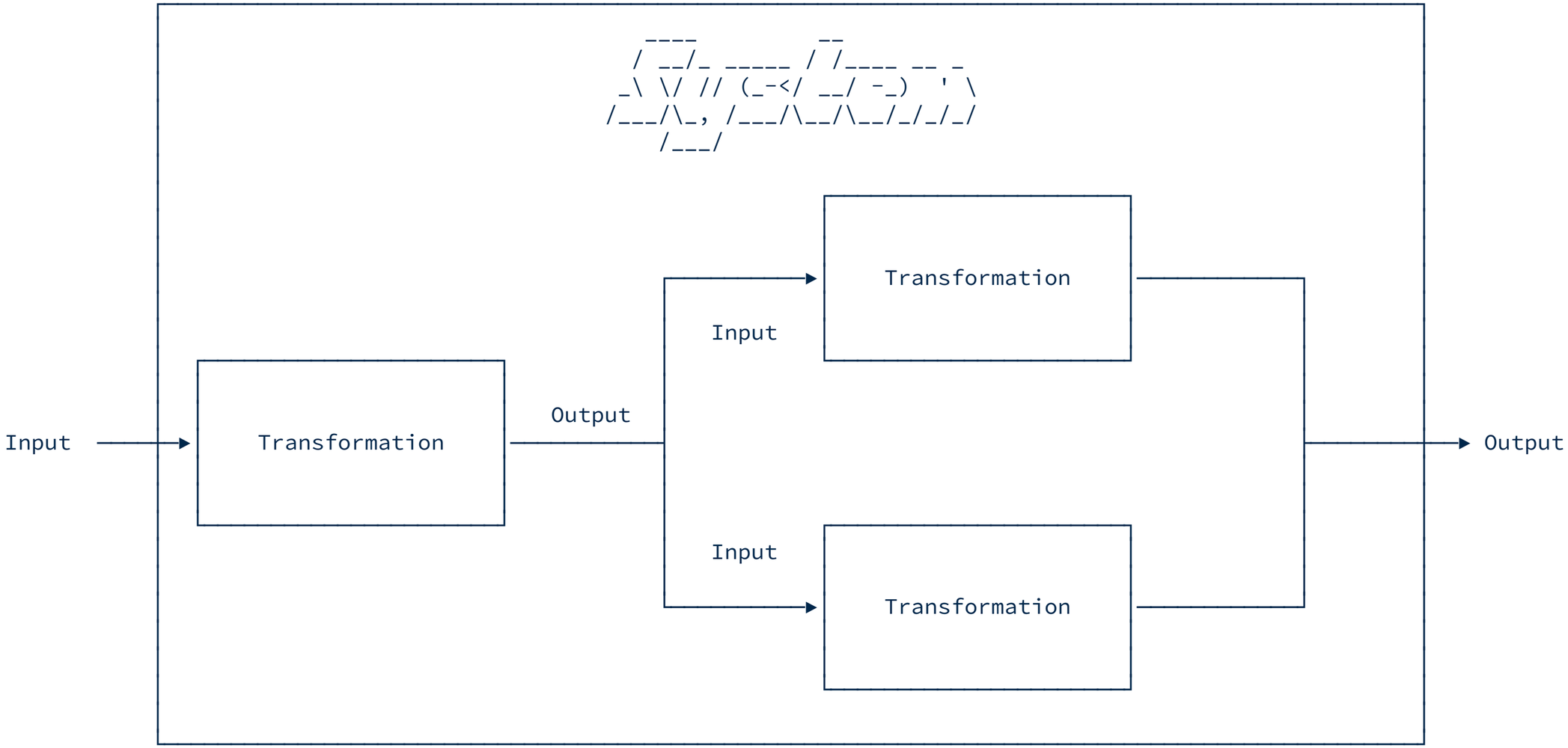
Metrics & Measurement

Processes

Model of a **Process**

Systems

A **System** is a *composition* of **Processes**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Input
Transformation
Output
Input
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Input
Transformation
Output

Design

Everyone **designs** who devises courses of action aimed at changing existing situations into preferred ones.

— *Herbert Simon* [2]

[2] See pp. 111 of Simon, H. A. (2001) The Sciences of the Artificial (3rd ed.). Cambridge, MA: MIT Press.

Metrics & Measurement

Metrics

Everyone designs who devises courses of action aimed at changing *existing situations* into *preferred ones*.

— *Herbert Simon* [2]

How are these situations specified?
How do we know we've moved from one to the other?

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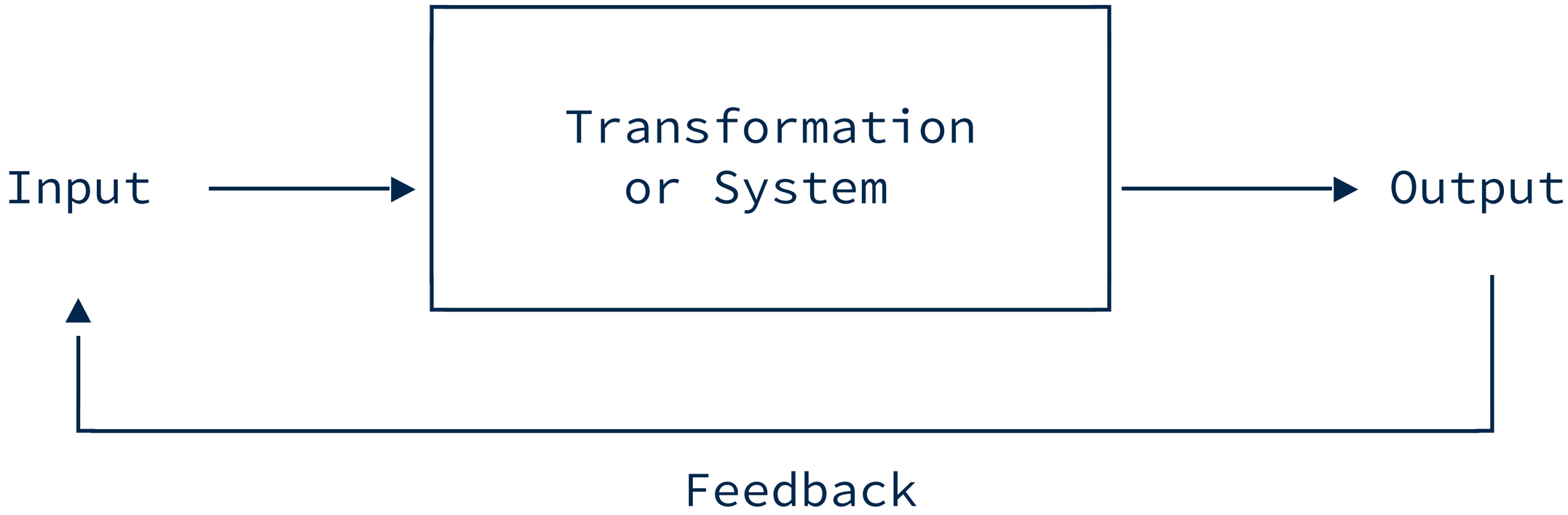
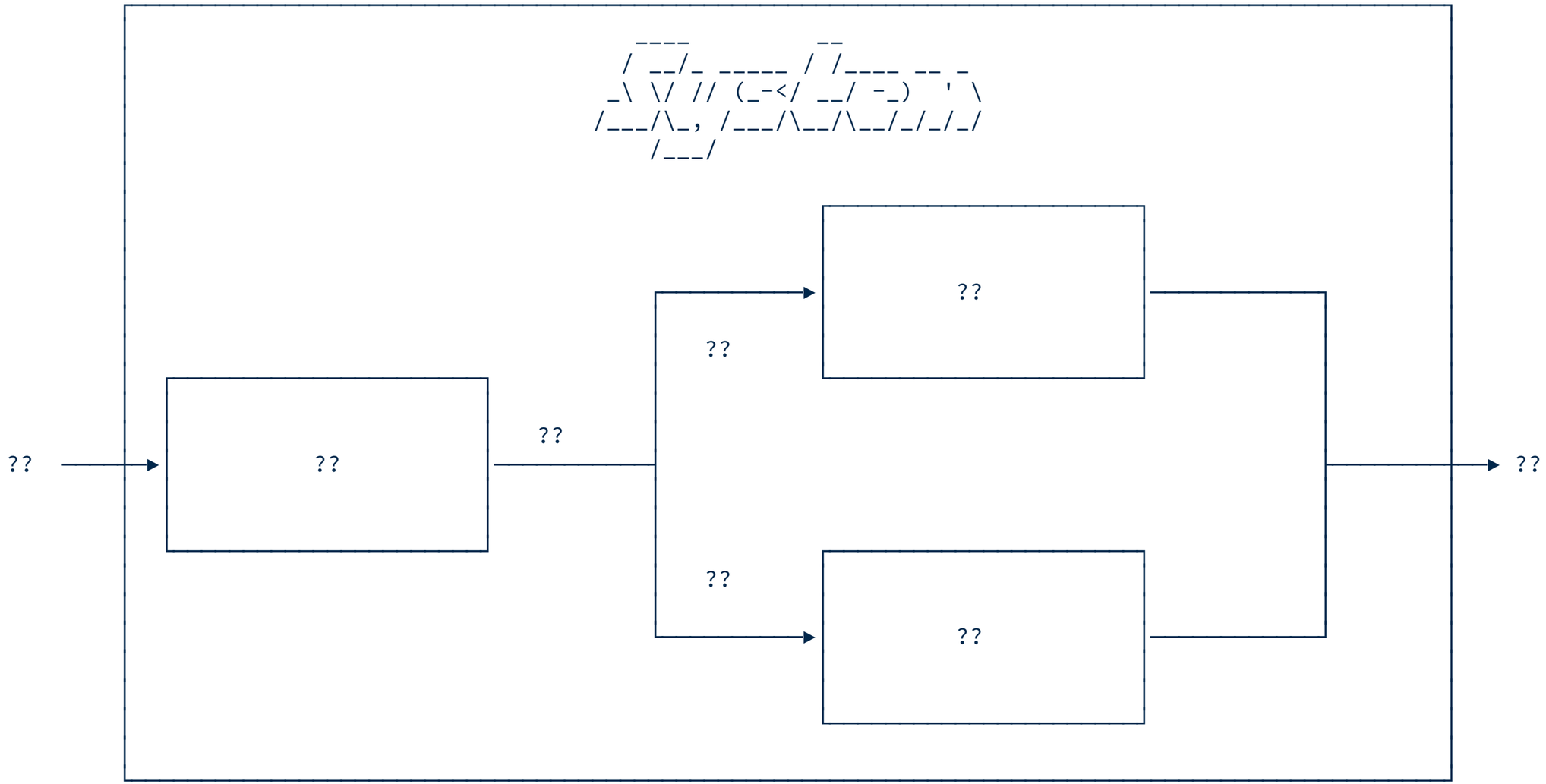
[2] See pp. 111 of Simon, H. A. (2001) The Sciences of the Artificial (3rd ed.). Cambridge, MA: MIT Press.

Measurement is the **process** of identifying the values of *Metrics*

Metrics enable *Feedback*



Systems **Thinking**



Systems Thinking

Systems thinking is viewing technology as a System

1. Identify the inputs.
2. Identify the outputs.
3. Identify the transformation(s).
4. Iterate down or up.

Learning Goals

Learning Goals [1]

- **Foundational Knowledge** - Systems, infrastructure, and lots of details.
- **Application** - Using many types of IT.
- **Integration** - Systems-thinking about the details and use of IT.

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[1] See pp. 83-84 of Fink, L. D. (2013) Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses. San Francisco, CA: Jossey-Bass

Learning Goals [1]

- **Human Dimension** - Comfortable, confident, resourceful, capable posture towards IT.
- **Caring** - Get excited about new IT *and* maintain a hype-free perspective about IT.
- **Learning how to Learn** - Understand your internal scaffolding for IT, and know how to fill in the details when needed.

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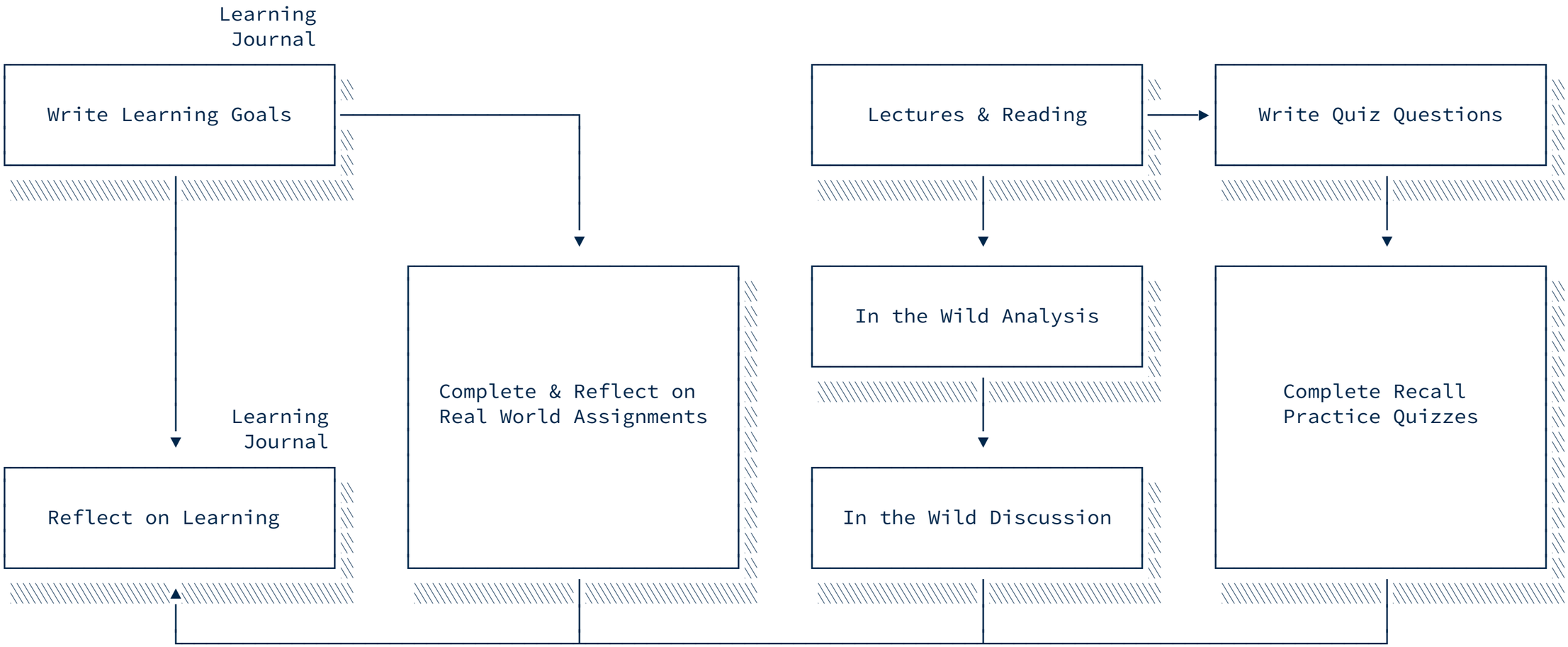
[1] See pp. 83-84 of Fink, L. D. (2013) Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses. San Francisco, CA: Jossey-Bass

Course **Structure**

Modular Rhythm



Real World Assignments

We want to envision ourselves practicing real-world informatics skills, specifically those related to IT.

- Set up a server
- Make changes to a website
- Write a small program
- Navigate any OS
- *Find relevant documentation*

Course **Schedule**

Course Schedule

Week(s)	End Date	Topics
1	Sept. 2	Class Intro, Systems Thinking, & Infrastructure
2-4	Sept. 23	Electronic Computers
5-7	Oct. 14	Software Systems
8-10	Nov. 4	Computer Networking
11-13	Nov. 25	The Web
14-15	Dec. 9	Integrated IT Systems & Hot Topics
	Dec 13	**Final Date to Submit Work**