TIM 80C 4/11/17 Lecture 3

Agenda

(1) Problem Solving

(2) Product Dissection

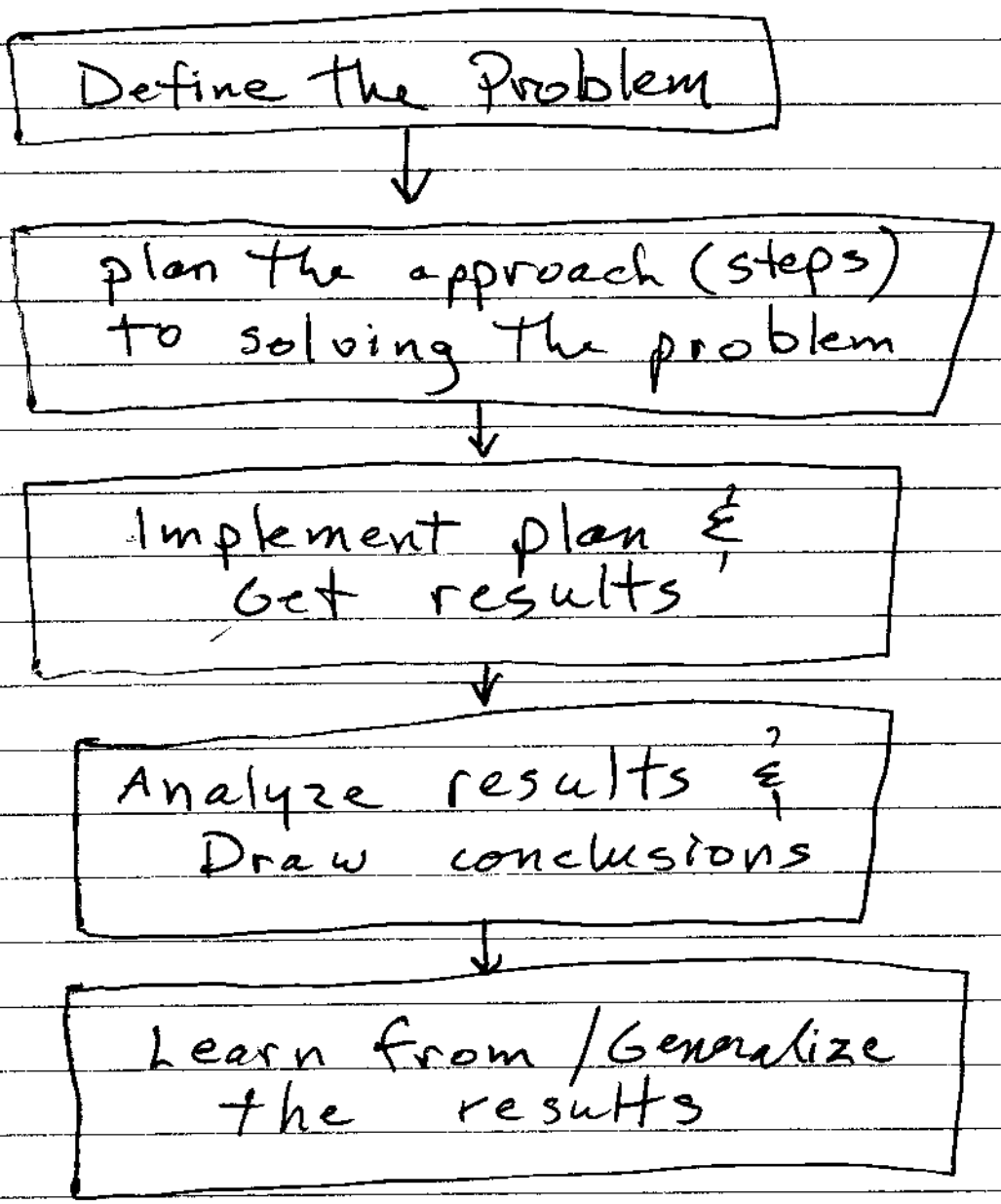
(3) Homework #1

(4) Project Preproposals

(1) Structured Problem Solving

Issue: How do we create a comprehensive solution to complex open-ended problems?

Approach:



Example: Improve the Home Computer

Step 1: Define The Problem

"Home computers are under utilized."

Step 2: Create a Plan

(1) Assess the existing home computer with respect to people's needs, and generate recommendations.

(1.a) Identify the different types of home computers (laptops, desktops, tablets, phones) select 1 to focus on.

(1.b) Determine user needs for the selected type of computer
- personal experience
- survey our friends
- internet research

"canvas"

(2) Assess how well existing products satisfy the identified user needs

(3) Create a table with recommendations for improvement (use structured brainstorming)

customer needs	Assessment	Recommend-ations
1.		
2.		
3.		

STEP 3 Implement the plan

Step 4 Analyze results & draw conclusions

Answer: Are existing products doing a good job of satisfying user needs?

Do we have a viable alternative?

STEP 5 learn from, generalize results

- improve the process
- apply insights to other products

② Product Dissection

motivation: Before we can create new products we need to understand the existing products.

Function: what does the product do?

Form: how does it do it?

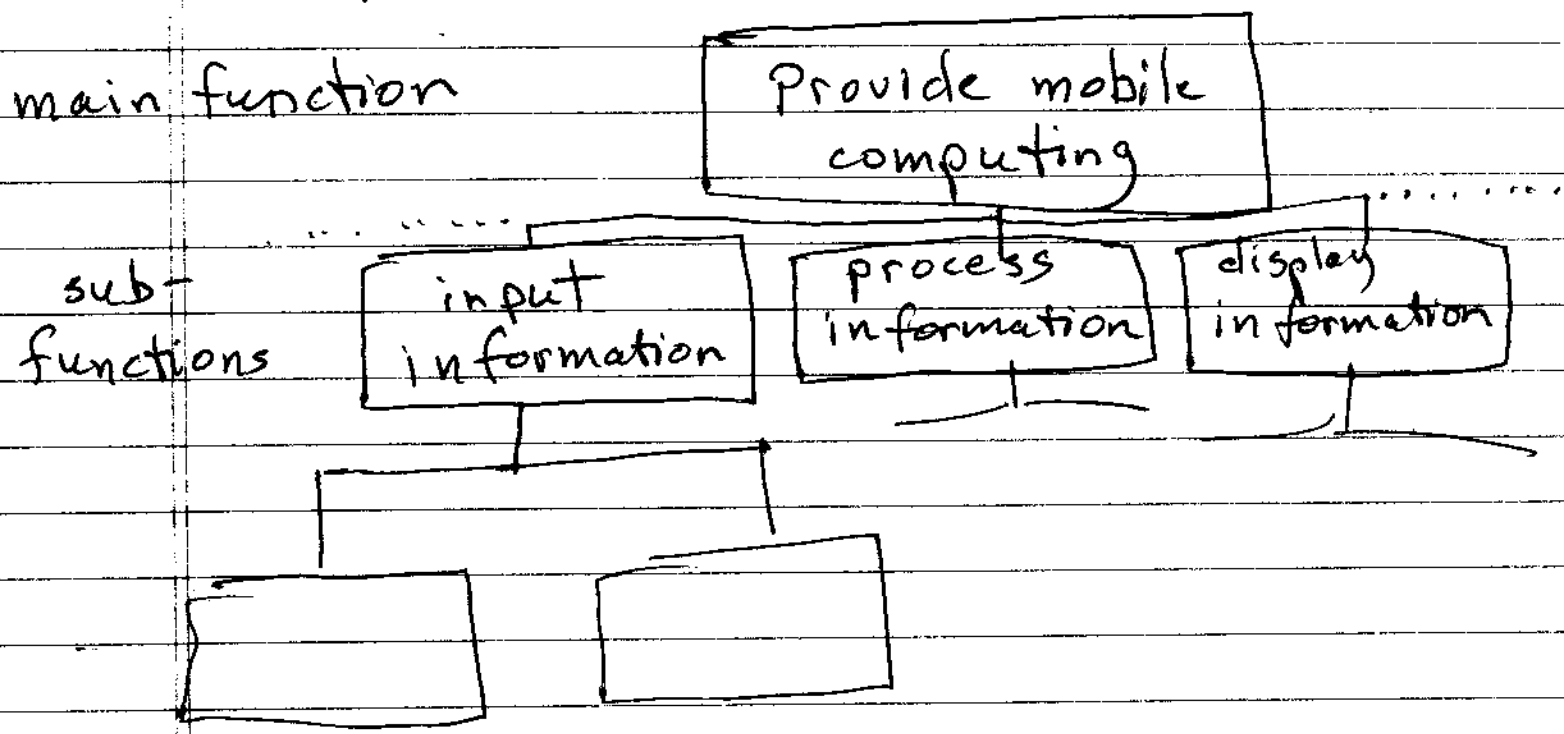
Step (1) Get familiar with the product
(a) "play with it" use it
(b) internet search
(c) study documentation

"howstuffworks.com" provides basic information

(2) Determine function & form

Function: verb-noun combinations that indicate the purpose of the product

Example: Apple Macbook Pro Laptop



Form: Physical configuration of the product that realizes the functions

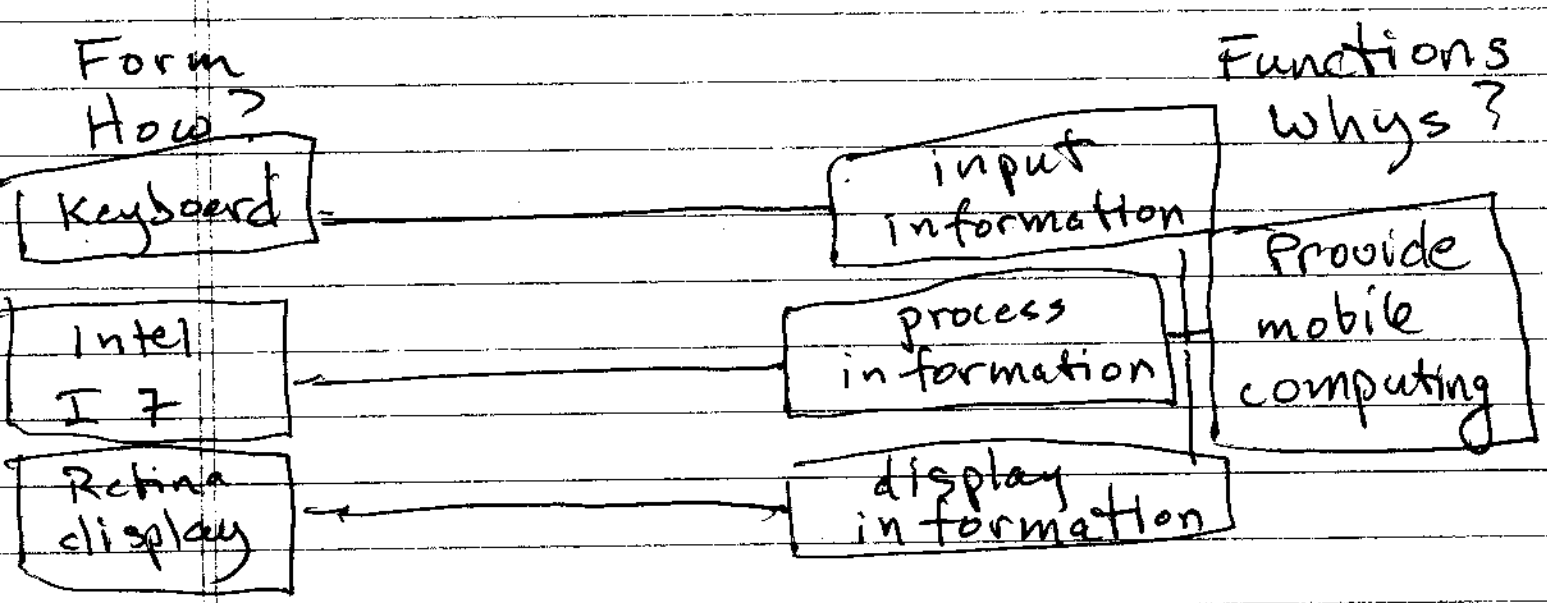
Examples for Macbook Pro

Intel I7 processor
Retina Display
Aluminum chassis
Lithium battery
keyboard

(3) Create a structured diagram of the relationships between the functions & the form ("realizations") of the product

FAST Diagram

Function Analysis System Technique



FAST DIAGRAM LIGHT BULB