Introduction to HCI

ID 405: Human-Computer Interaction
Spring 2015

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http://info-design-lab.github.io/ID405-HCI/

Agenda

o Introductions

o Administrative information

o HCI overview

o Assignment 1 briefing

Course Information

Text Book:
Interaction Design: Beyond Human - Computer Interaction (3rd edition)
by Yvonne Rogers, Helen Sharp, Jenny Preece
Wiley, 2011

Web:
http://info-design-lab.github.io/ID405-HCI/

Schedule of classes and topics
Lectures
Readings
External Links
Assignments
References

Course Information

Registration:
ASC may require some of you to register manually. If so, use the registration form on the course website and take my signature by Jan 9th, 11:00 am.

Timings:
Wednesdays and Fridays 9:30 am to 11 am (LT 301), and some Saturdays at IDC.

Attendance:
Students not having 80% attendance may be debarred from appearing in the semester end examination and be awarded XX grade, which requires the student to re-register for the course when it is offered again.

Office Hours:
Fridays 11:30 AM to 1:00 PM at my office in Transit Building, Room No. 330 or by appointment.

Course Information

Grading:
Your grades will be determined through

      4 short assignments (20%)
      4 surprise quizzes (20%)
      1 group project (25%)
      No midsem
      Endsem (25%)
      Attendance & class participation (10%)

What is design?

What is design?

o a mixture of creativity and analyses
o problem solving
o evolution
o the creation of solutions to problems
o integrating into a coherent whole
o a fundamental human activity
o improve the human condition through physical change
o imaginative/creative jump from present facts to future possibilities
o thoughts and actions intended to change thoughts and actions

o etc…

What is design?

Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state.

Herbert A. Simon (1969) *The Sciences of the Artificial*. P. 130. MIT Press, Cambridge, Mass.
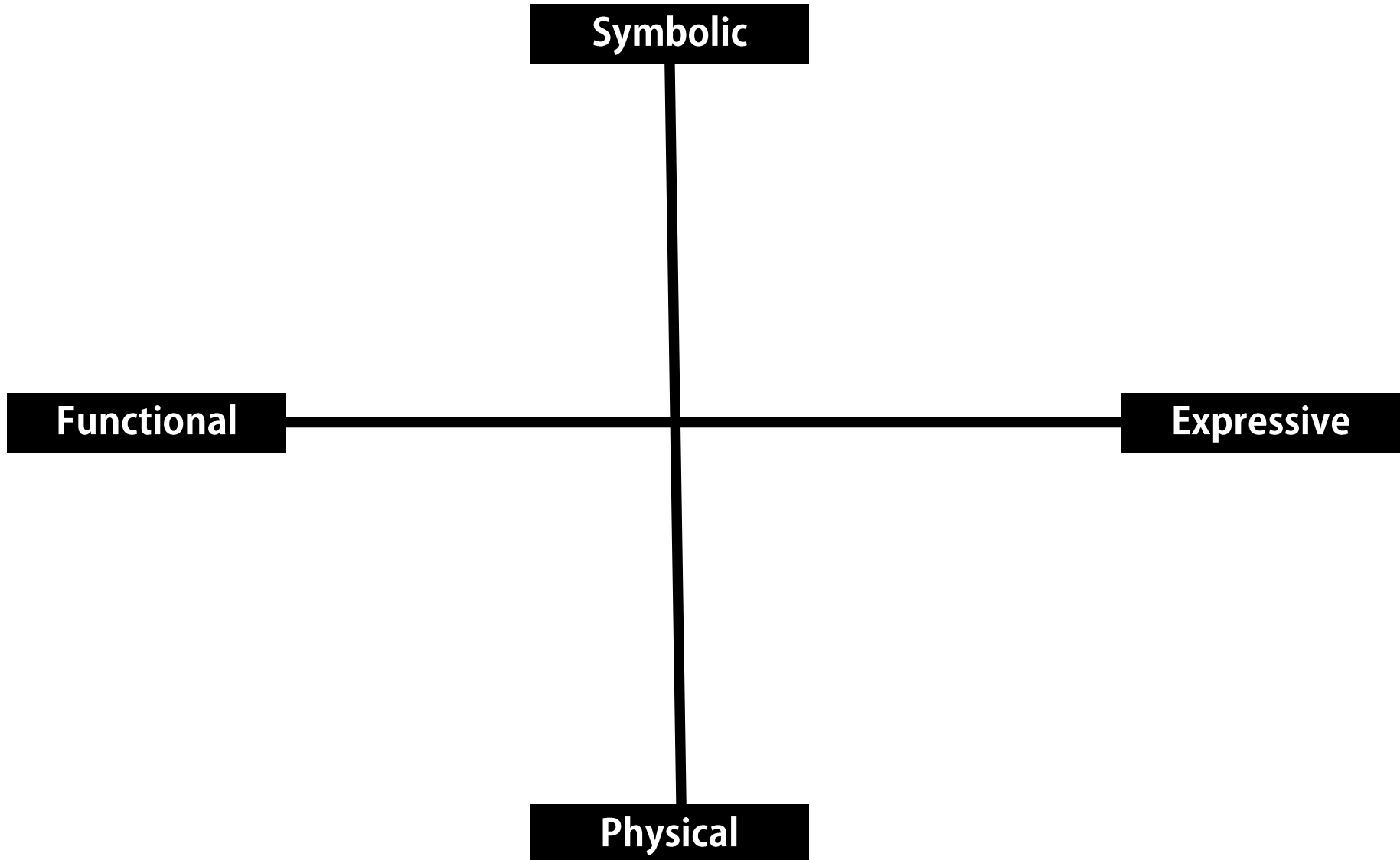
What is design?

Bruce Archer (1979)

What is design?

Charles Owen (1991)
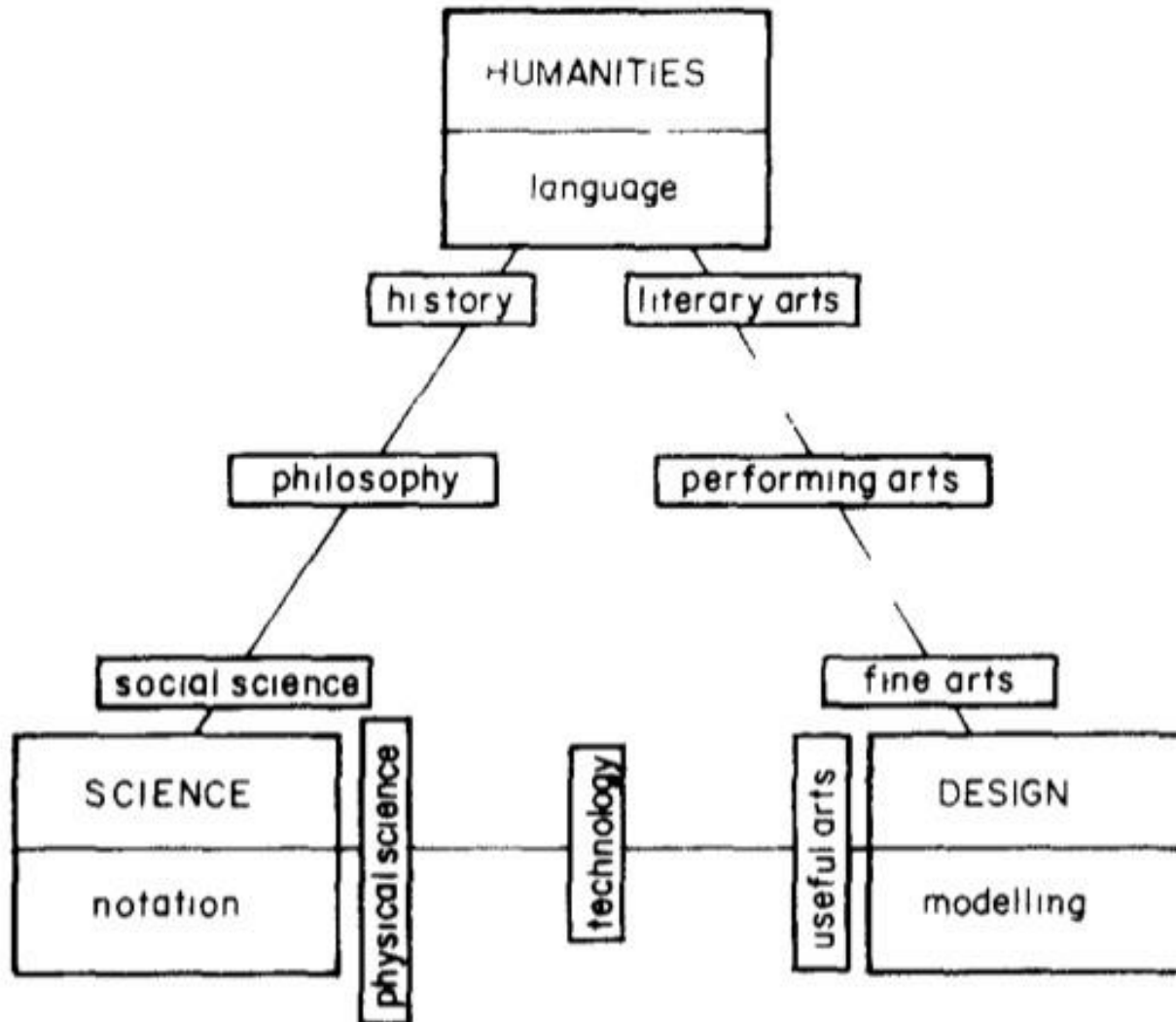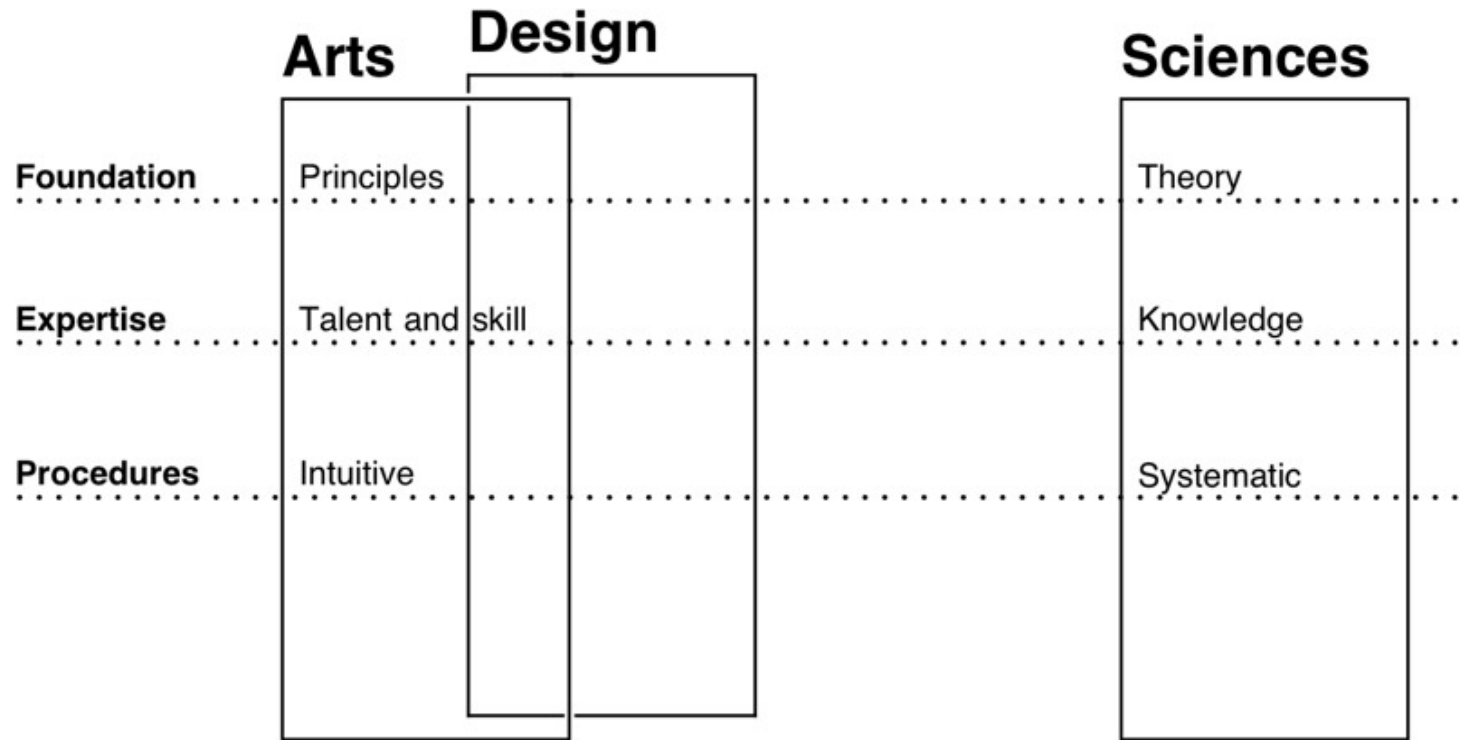
What is design?

What is design?

intangible: perceived by the heart
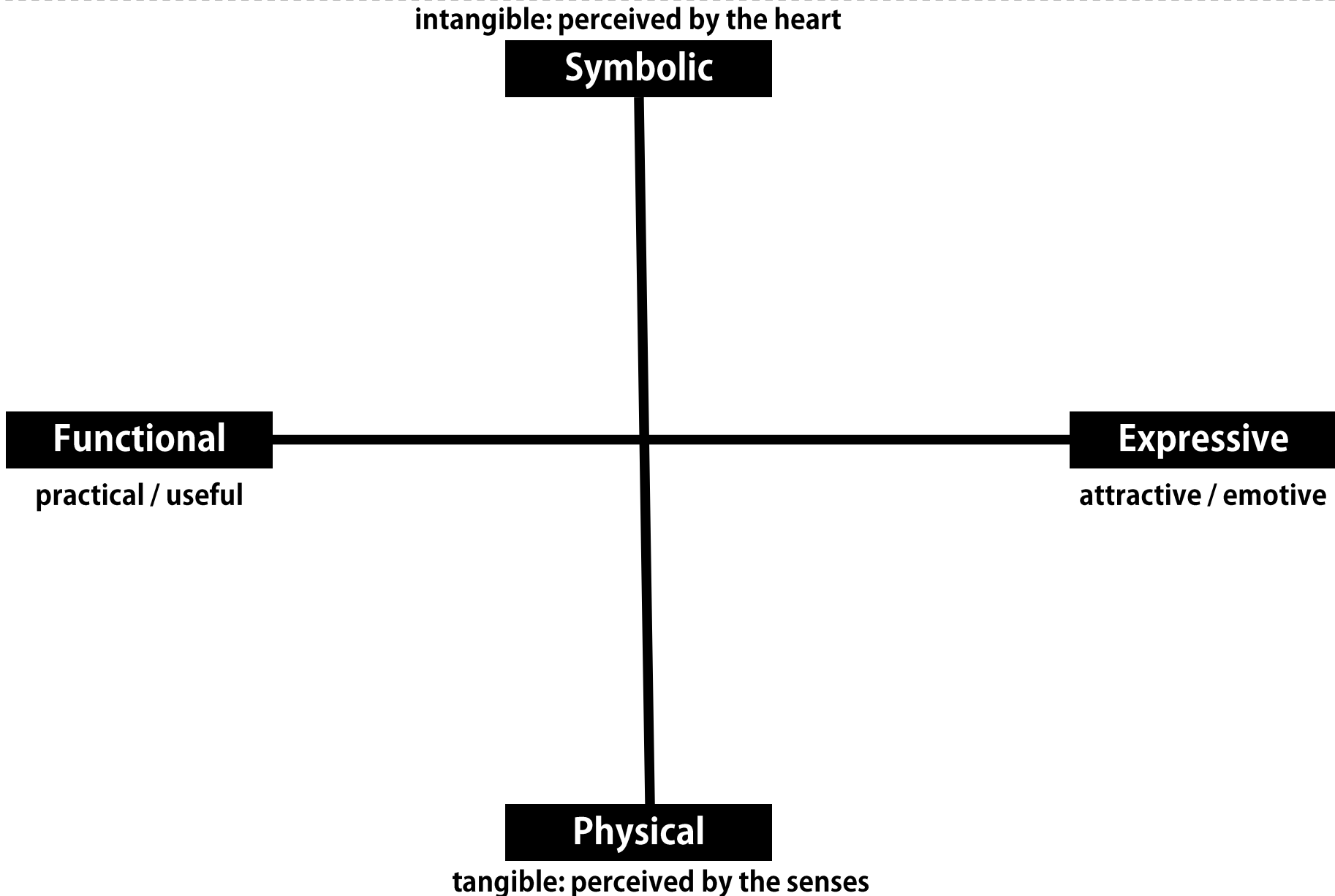
Symbolic

Functional

practical / useful

Expressive

attractive / emotive

Physical

tangible: perceived by the senses

What is design?

intangible: perceived by the heart

Symbolic
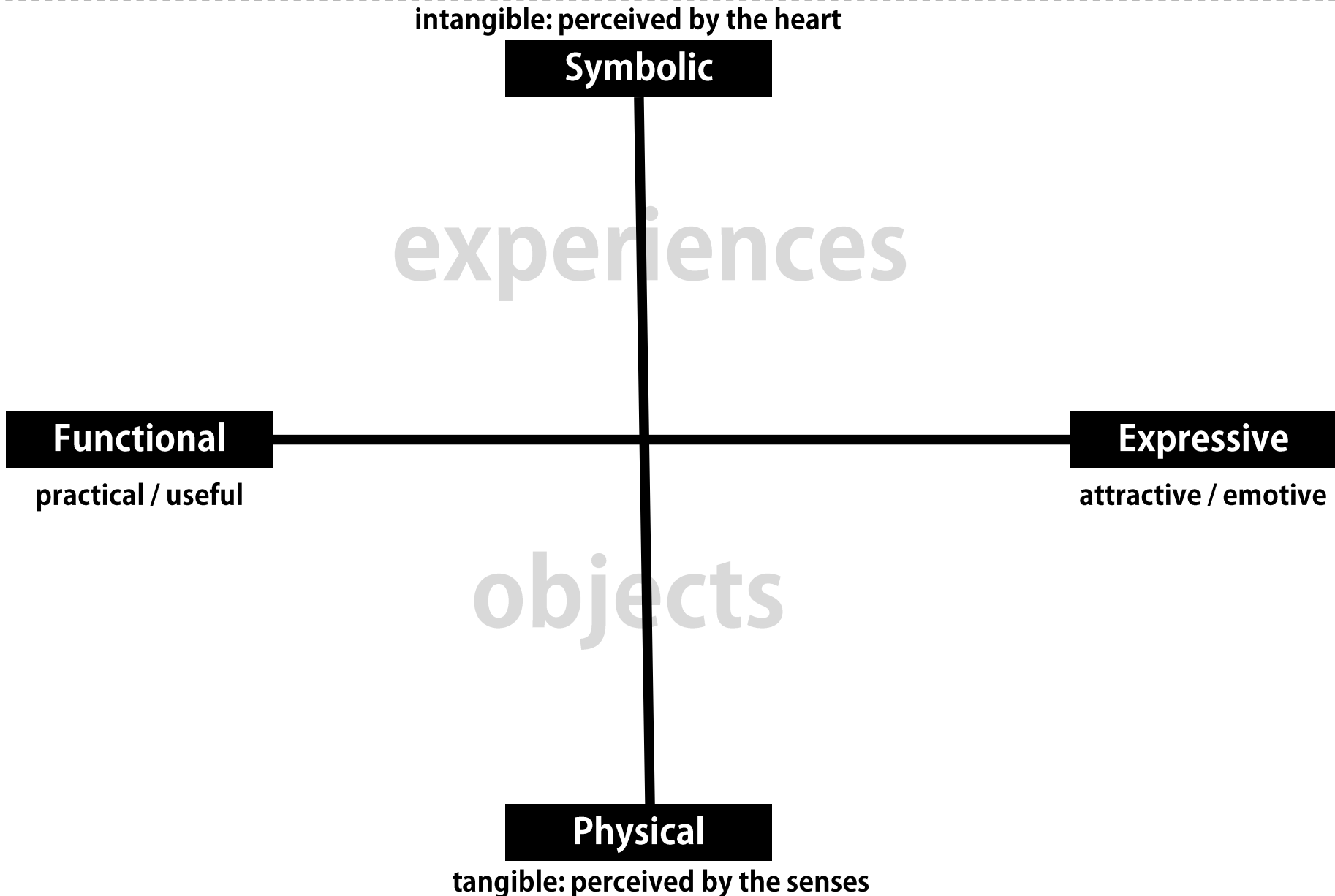
experiences

Functional

practical / useful

Expressive

attractive / emotive

objects

Physical

tangible: perceived by the senses

What is design?

intangible: perceived by the heart

Symbolic

experiences

Functional

practical / useful

Expressive

attractive / emotive

objects

Engineering

Physical

tangible: perceived by the senses

What is design?

intangible: perceived by the heart

Symbolic

experiences

Functional

practical / useful

Expressive

attractive / emotive

objects

Engineering

Art

Physical

tangible: perceived by the senses

What is design?

intangible: perceived by the heart

Symbolic

experiences

Design

Functional

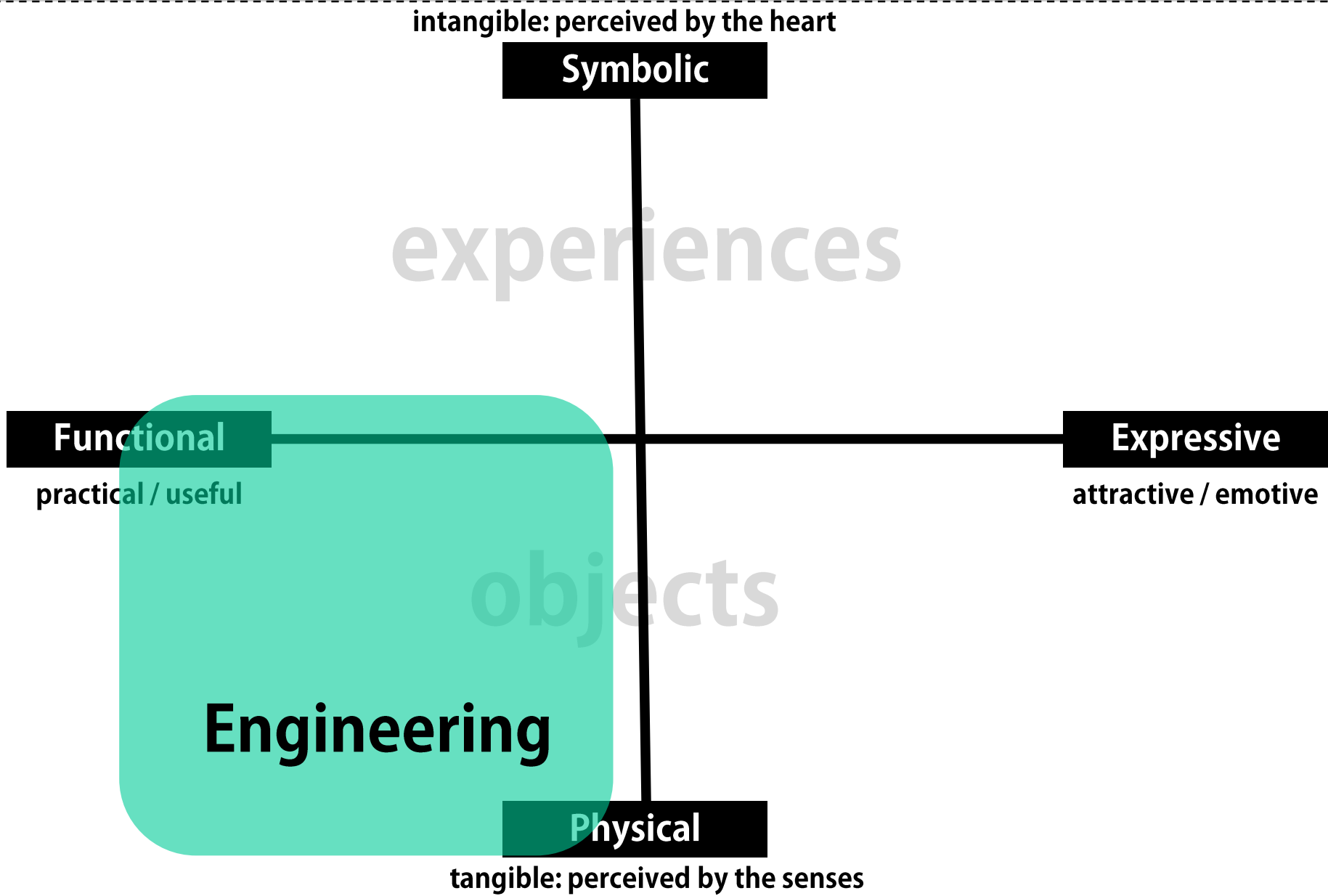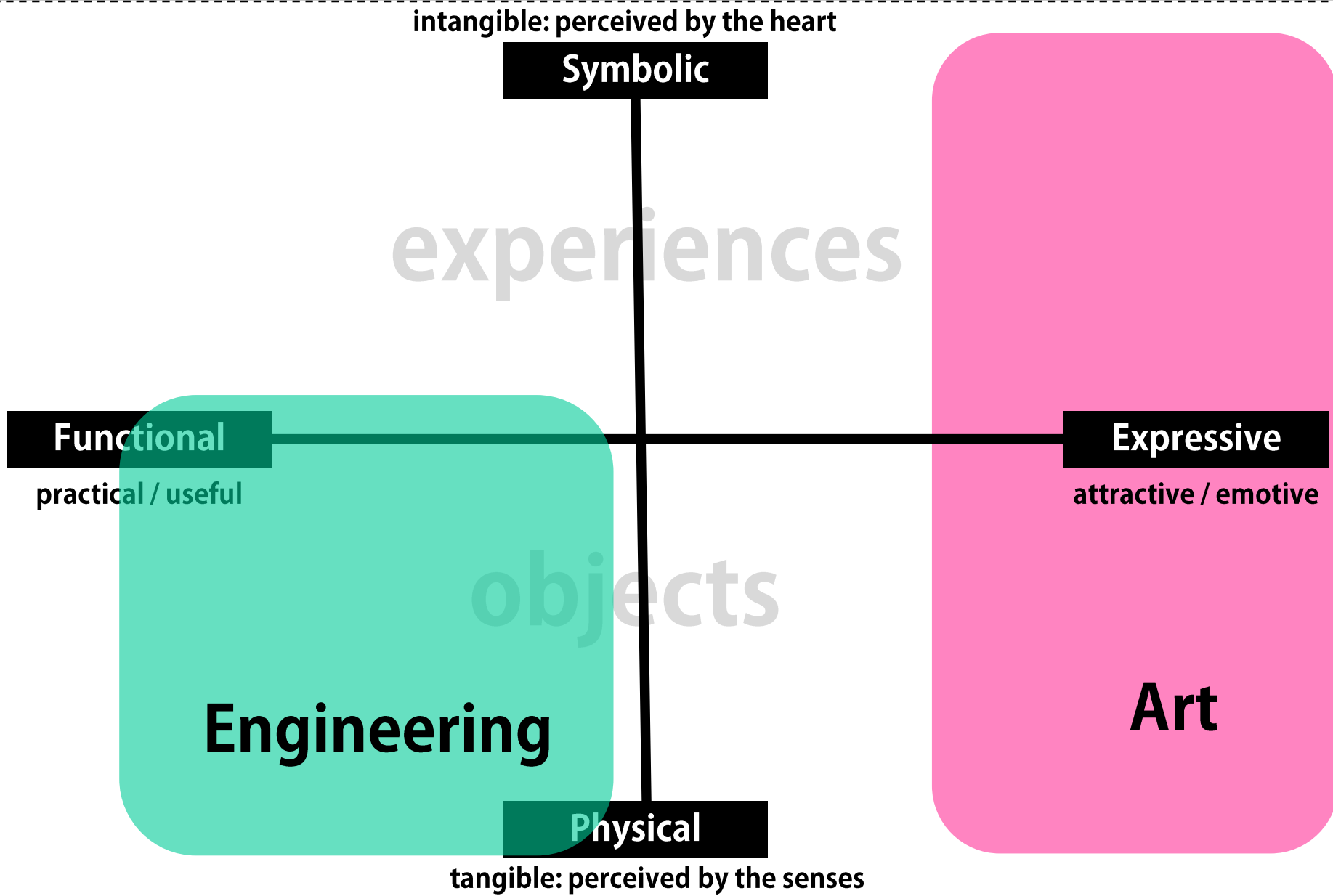practical / useful

Expressive

attractive / emotive

objects

Engineering

Art

Physical

tangible: perceived by the senses

What is design?

Design, as a unique way of thinking and acting, does not have a long, well-developed scholarly history. Other intellectual traditions, such as science and art, have enjoyed thousands of years of considered thought.

Harold Nelson & Erik Stolterman (2002)

HCI overview

o Human Computer Interaction (HCI)
o Design for User Interaction
o Interaction Design (IxD)
o User Interface Design (UID)
o Human Factors (HF)
o Ergonomics
o Usability
o Ease of Use Design
o User Experience Design (UX)

What is interaction design?

Designing interactive products to support people in their everyday and working lives
Sharp, Rogers and Preece (2002)

Shaping software, websites, video games and other digital artifacts, with particular attention to the qualities of the experiences they provide to users
Jonas Löwgren (2002)

The discipline that defines how interactive products communicate their functionality to users and how users can interact with them
Interaction Design Group (2004)

What is interaction design?

Interaction design is design for human use. It involves answering three questions:

- o **How do you do?** What sort of ways do you affect the world: poke it, manipulate it, sit on it?
- o **How do you feel?** What do you sense of the world and what are the sensory qualities that shape media?
- o **How do you know?** What are the ways that you learn and plan?

What is an interface?

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What is an interface?

What is interaction design?

Interface design is the design of the layer(s) that enables a user to communicate with a product and use the product

Interaction design however, extends beyond the interface layer to consider the total experience of the user in using the product

What is an interface?

Confusion over Palm Beach County ballot

Sun-Sentinel graphic/Daniel Niblock

What is an interface?

What is an interface?

What is an interface?

What is an interface?

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Weather

Sitemap

Queries on Prices & Arrivals

◆ Commodity-wise, Market-wise Daily Report

◆ Market-wise, Commodity-wise Daily Report

◆ Market-wise Daily Report for Specific Commodity

◆ Weekly Price trend for specific Commodities

◆ Commodity Prices during last week

◆ Market-wise Prices during last week

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Address http://agmarknet.nic.in/cmmrep.asp   Go   Links   SnagIt

Commodity-wise, Market-wise Daily Report

Enter year (yyyy): 2005

(Enter year & Press "Tab" to refresh Calender)

Click the date on calender to see report (Green - Data Reported, Red - Data Not Reported)

January

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

February

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27	28					

March

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17	18
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May

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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June

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26	27	28	29	30		

July

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24	25	26	27	28	29	30
31						

A

Su	Mo
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7	8
14	15
21	22
28	29

September

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3

October

Su	Mo	Tu	We	Th	Fr	Sa
						1

November

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5

Dec

Su	Mo

http://agmarknet.nic.in/arrivals1.htm - Microsoft Internet Explorer

Done   Internet

start   N.   N.   N.   N.   h.   m.   O.   W   M.   EN   97%   11:58 AM

Commodity-wise, Market-wise Daily Report

Enter year (yyyy): 2005

(Enter year & Press "Tab" to refresh Calender)

ort (**Green - Data Reported**, **Red - Data Not Reported)**

February

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March

Su	Mo	Tu	We	Th	Fr	Sa
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April

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June

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26	27	28	29	30		

July

Su	Mo	Tu	We	Th	Fr	Sa
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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August

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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

October

Su	Mo	Tu	We	Th	Fr	Sa
						1

November

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5

December

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3

Commodity-wise, Market-wise Daily Report

Select the commodities and click Submit button at the bottom of the page

Commodities Reported on (30/04/2005)

Cereals

Bajra	☐	Barley	☐
Jowar	☐	Maize	☐
Paddy	☐	Ragi	☐
Rice	☐	Wheat	☐

Drugs & Narcotics

Arecanut(Betelnut/Supari)	☐	Betal Leaves	☐
Isabgul (Psyllium)	☐		

Dry Fruits

Cashewnuts	☐

Fibre Crops

Cotton	☐

Forest Products

Antawala	☐	Other Forest Product	☐
Tamarind Fruit	☐	Tamarind Seed	☐

Fruits

Apple	☐	Banana	☐
Chikoos(Sapota)	☐	Grapes	☐

Dry Chillies	☐	Garlic	☐
Ginger	☐	Methi Seeds	☐
Soanf	☐	Turmeric	☐

Vegetables			
Ashgourd	☐	Banana - Green	☐
Beetroot	☐	Bhindi(Ladies Finger)	☐
Bitter gourd	☐	Bottle gourd	☐
Brinjal	☐	Cabbage	☐
Capsicum	☐	Carrot	☐
Cauliflower	☐	Chilly Capsicum	☐
Cluster beans	☐	Coriander	☐
Cucumbar	☐	Drumstick	☐
French Beans (Frasbean)	☐	Green Chilly	☐
Green ginger	☐	Gwar	☐
Knool Khol	☐	Leafy Vegetable	☐
Lemon	☐	Little gourd (Kundru)	☐
Mango (Raw-Ripe)	☐	Methi	☐
Onion	☐	Other Vegetable	☐
Peas cod	☐	Peas Wet	☐
Pointed gourd (Parval)	☐	Potato	☑
Pumpkin	☐	Raddish	☐
Ridgeguard	☐	Snakeguard	☐
Spinach	☐	Squash(Chappal Kadoo)	☐

Commodity-wise, Market-wise Daily Report On 30/04/2005

NR: Not Reported

Group : Vegetables

Commodity: Potato

Market	Arrivals (Tonnes)	Origin	Variety	Minimum Price (Rs./Quintal)	Maximum Price (Rs./Quintal)	Modal Price (Rs./Quintal)
Assam						
Lanka	20	NR	Other	500	600	550
P.O. Uparhali Guwahati	45	NR	Other	400	580	550
Bihar						
Biharsharif	13.8	NR	Other	550	650	600
Gaya	0.1	NR	Local	580	620	600
Patna (Musallahpur)	NR	NR	Desi	500	550	525
Patna City	NR	NR	Desi	640	800	720
Sasaram	20	NR	Red	500	550	525
Gujarat						
Bharuch	48	NR	Other	500	600	550
Rajkot	378	NR	Potato	475	575	550
Vadhvan	20	NR	Potato	500	550	525
Haryana						
Gohana	NR	NR	Kufri Giriraj	200	400	300
Shahabad	0.7	NR	Local	300	400	350
Sirsa	7.1	NR	Other	200	500	400

Haryana						
Gohana	NR	NR	Kufri Giriraj	200	400	300
Shahabad	0.7	NR	Local	300	400	350
Sirsa	7.1	NR	Other	200	500	400
Sonepat	NR	NR	Other	400	500	450
Himachal Pradesh						
Bilaspur	2	NR	Other	300	600	550
Kullu	0.7	NR	Other	550	600	580
Mandi	3	NR	Other	350	600	500
Jammu & Kashmir						
Narwal Jammu (F&V)	72	NR	Other	550	650	600
Pulwama (F&V)	10	NR	Other	500	700	600
Udhampur	75.2	NR	Other	600	650	625
Vessue	36	NR	Jalander	700	760	730
Karnataka						
Kolar	4	NR	Local	300	600	500
Kundapura	1	NR	Potato	600	1000	900
Madhya Pradesh						
Chhindwara	2.2	NR	Other	350	650	500
Maharashtra						
Kolhapur	101.2	NR	Other	300	650	500
Mumbai	737	NR	Other	450	800	625
Solapur	66	NR	Other	350	650	450
NCT of Delhi						
Keshopur	77.75	NR	Other	400	525	488
Orissa						

What is the purpose of Interaction design?

Develop usable products that are

1. Easy to learn
2. Easy to use
3. Error free
4. Easy to remember
5. Provide an enjoyable experience

What is the purpose of Interaction design?

Easy to learn:

o How quickly can a typical novice user start using the product?
o How quickly can a novice user become an advanced beginner and an advanced beginner become a competent performer?
o How much of training and practice is necessary for a novice to reach an acceptable level?

What is the purpose of Interaction design?

Easy to use:

- How quickly can a user complete the task at hand?
- How accurately can a user complete the task at hand?

What is the purpose of Interaction design?

Easy to remember:

- Can the user form an accurate mental model of how the product functions?
- Can this model be used to learn advanced features of the product or even other products of similar nature?
- How much effort and time is required to re-learn what a user has forgotten?

What is the purpose of Interaction design?

Provide an enjoyable experience:

- How much did the users like the product?
- How does it compare over competition?

Interaction design challenges

Designing software

- o Design for the mind, not body – cognitive friction
- o Designing an unknown product

Interaction design challenges

Designing software

Several specialized teams need to work together
- Management or Client, Analysts, Engineering, R&D, Developers, Designers, QA, Users
- What gets made comes from a partnership between all parties
- Breaking up work across groups creates communications problems
- Cross functional design teams create a shared perspective

Interaction design challenges

Designing software
Several specialized teams need to work together
Designing for people "not like us"
- US / Europe / Japan / Middle East
- Anesthetists / Cardiac Surgeons / Lawyers
- Cerebral Palsy Patients / Blind / Unskilled / Illiterate
- Postmen / Bus Conductors / Paanwalas
- Checkout Cashiers / Marketing Executives / College Students

Interaction design challenges

Designing software
Several specialized teams need to work together
Designing for people "not like us"
User work is complex and detailed
o   We need to capture the details and the whole picture together

Interaction design challenges

Designing software
Several specialized teams need to work together
Designing for people "not like us"
User work is complex and detailed
'User requirements' keep changing
o The more a client sees, more clearly he knows what he wants

Assignment 1

Find 3 unique usability problems in the day-to-day objects that you have observed or encountered

Describe them in 3 slides in a presentation

Submit as a Google drive link on 12-1-14, by 8 pm