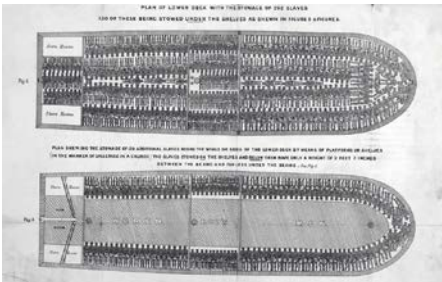# INFORMATION VISUALIZATION I
DAY 1 | MONDAY | 16.12.2013

Drawings of slave ship Brookes by British abolitionist William Elford. 1788

SESSION 1 | 9:30 – 10:30 AM
READINGS
Read/watch, research and think about the following historically significant information visuals and commentaries. Come prepared with 2 questions or comments.
— Eye Magazine Issue 82 (html)
— Visual and Statistical Thinking: Displays of Evidence for Decision Making – Edward Tufte (pdf)
— Works of Kohei Sugiura (tif)
— BBC Design Classics, The London Underground Map (video)
— A Brief History of Data Visualization – Jeffrey Heer (video)

SESSION 2 | 10:45 AM – 12:15 PM
LECTURE / PRESENTATION
— Historical overview
— Case studies and discussion
— Visual perception and cognition
— Visual and statistical thinking

SESSION 3 | 12:15 – 01:30 PM
ACTIVITY + GALLERY + DISCUSSION
Organising and structuring information

LUNCH | 01:30 – 02:30 PM
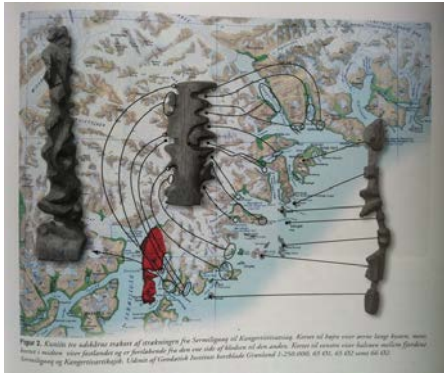
SESSION 4 | 02:30 – 06:30 PM
ASSIGNMENT 1
Read the brief in the following page and begin working on the assignment. You are required to show concepts, iterations, possible prototypes and finalise the design in consultation with me by the end of the day.

Present and discuss your finished visualization in class tomorrow morning at 9:30 AM.

George J. Pinwell: Death's Dispensary
Fun Magazine, 1866

Inuit Cartography. From "Topografisk Atlas Grønland" 2000

Poster commissioned by Planning Office of the city of Münster, Germany. Rllayman. 1990

Danish perception of religious symbols in public professions

Ruin from the city of Sendai, Miyagi prefecture. Japan tsunami 2011

Nadeem Haidary's visualization of caloric consumption per capita in various countries on fork and plates

ASSIGNMENT 1: PHYSICAL / TANGIBLE VISUALIZATION

BRIEF
Physical and tangible representation of data predate perhaps drawing and writing. Pre-historic societies have used stones, bones, wooden sticks and clay tokens to externalize information, support visual thinking and enhance cognition.

Take a small and simple data set and visualize it physically. This assignment emphasizes the importance of a strong organizing principle for the content; the need for a strong visualization; and a high level of finished quality in the final result.

Remember your final visualization is not a postmodernist experimentation, but needs to make sense of an abstract data and make it more digestible and graspable by making it more tangible, more physical, more real.

STAGES
1. Sketch at least five different ideas/concepts and their unique data sets, A4
2. Sketch at least five alternative visualizations for the selected concept, A4
3. Create a full-size pencil rough showing all information for the selected visualization, A3
4. Create the physical model and shoot photographs
5. Compose final photograph to create a poster, A3, full color

REQUIREMENT
Physical visualization and a high quality finished poster. Present and discuss your ideas, design decisions and the final visualization.

REFRENCES/EXAMPLES
— http://www.aviz.fr/Research/PassivePhysicalVisualizations
— http://visualizing.org/galleries/physical-data
— http://www.designboom.com/technology/daily-stack/
— http://datavisualization.ch/showcases/how-to-measure-type/
— http://nadeemhaidary.com/In-Formed
— http://www.wired.com/autopia/2013/07/honda-senna-tribute/
— http://infosthetics.com/archives/2011/04/can_we_keep_up_a_physical_data_visualisation_using_water_and_sponges.html
— http://blog.visual.ly/real-life-dataviz/
— http://www.willembesselink.nl/

INFORMATION VISUALIZATION I
DAY 2 | TUESDAY | 17.12.2013

SESSION 1 | 09:30 – 10:00 AM
PRESENTATION
Present and discuss your physical/tangible visualization.

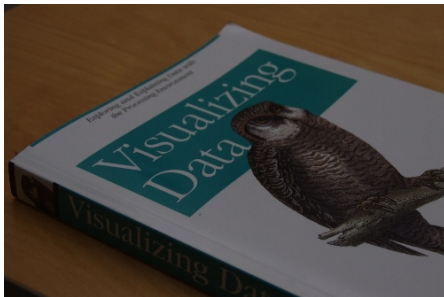**SESSION 2 | 10:00 – 11:00 AM**
READINGS
Read the following 2 chapters on and come prepared with 2 questions or comments.
— [Representing Data](#) – Nathan Yau (pdf)
— The Seven Stages of Visualizing Data – Ben Fry (pdf) download this from unsecure folder

Data Points: Visualization That Means Something by Nathan Yau

Visualizing Data: Exploring and Explaining Data with the Processing Environment by Ben Fry

SESSION 3 | 11:15 AM – 12:15 PM
LECTURE/PRESENTATION
— Encoding data
— Visualization process
— Design framework
— Principles / strategies

SESSION 4 | 12:15 – 01:30 PM
ASSIGNMENT 2
Read the brief in the following page and begin working on the assignment. You are required gather the data; analyse, structure and represent it to aid your narrative; and finalise the design in consultation with me by the end of the day.

Present and discuss your finished visualization in class tomorrow morning at 9:30 AM.
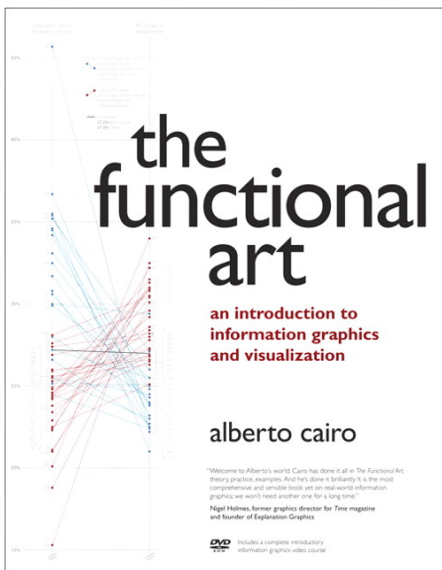
LUNCH | 01:30 – 02:30 PM

SESSION 5 | 03:30 – 05:00 PM
GUEST LECTURE BY ALBERTO CAIRO
Alberto Cairo is a Professor at the School of Communication, Miami University. He is also the author of Functional Art which is an introductory text on the subject. You can read his [complete bio here](#).

SESSION 6 | 05:00 – 06:30 PM
ASSIGNMENT 2 (CONTINUED)

The Functional Art: An introduction to information graphics and visualization by Alberto Cairo

Image source: WSJ

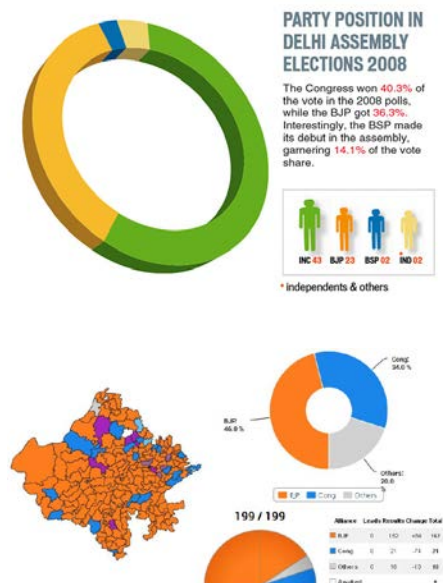## ASSIGNMENT 2: ASSEMBLY ELECTONS DECEMBER 2013

BRIEF

Identify narratives/aspects/issues that you want to explore and highlight through visualization of data from the 5-states assembly elections 2013. Gather and analyse relevant data to identify a data set with the greatest potential for an unique, surprising or hitherto unavailable point of view. Parse, filter, represent and refine to create a static visualization.

The visualization is meant for print Newspaper (Broadsheet, 750mm x 600mm) and you should assume it will be accompanied by an article or commentary.

STAGES

1. Identify and gather at least five different ideas/concepts and their unique data sets, A4
2. Select the one with the most potential
3. Apply Ben Fry's 7 stages of visualizing process and Nathan Yau's data representing principles to sketch at least five alternative visualizations for the selected concept, A4
4. Create a full-size pencil rough showing all details in final layout of the selected visualization, A3
5. Create final visualization in Adobe Illustrator, compose in a national broadsheet, page 3, above the fold, print display, full color

REQUIREMENT

High quality finished mock up of newspaper with graphic. Present and discuss your ideas, design decisions and the final visualization.

A handful of data visualizations that appeared in the mainstream media. Assembly elections 2013

REFRENCES/RESOURCES

— http://eciresults.ap.nic.in/ (Election Commission of India
— Assembly Elections December 2013 Results)
— http://www.ndtv.com/elections
— NY Times U.S. Elections 2012 Visualizations: http://www.nytimes.com/interactive/2012/12/30/multimedia/2012-the-year-in-graphics.html

Best Charts of 2013
— http://www.thewire.com/politics/2013/12/best-charts-maps-and-interactives-2013/356091/
— http://qz.com/156778/our-favorite-charts-of-2013/
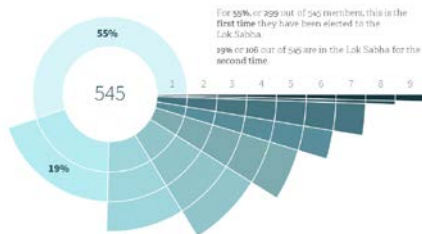
INFORMATION VISUALIZATION I
DAY 3 | WEDNESDAY | 18.12.2013

SESSION 1 | 10:00 – 11:30 AM
PRESENTATION + GUEST CRITIQUE
Present prototypes and discuss the progress of your Election 2013 visualization.

We will have [Pooja Saxena](#) and [Nirbheek Chauhan](#) of [The Ballot](#), which releases weekly visualizations depicting statistics about India's democracy.

SESSION 2 | 11:45 AM – 01:00 PM
GUEST LECTURE/PRESENTATION
Pooja Saxena and Nirbheek Chauhan wil share the story of *The Ballot* -- why they decided to do it, what the general process behind their work is, and challenges in making multilingual visualizations.
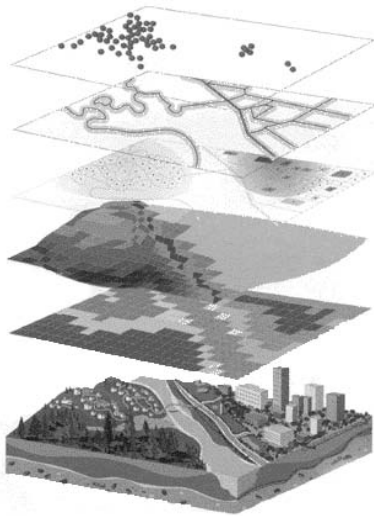
LUNCH | 01:00 – 02:00 PM

SESSION 4 | 02:00 – 06:30 PM
ASSIGNMENT 2 (CONTINUED)

Visualization of election history of the current Lok Sabha members by the Ballot

Graphic Designer Erin Jang made this NYC subway map for her 3 year old nephew

The Image of the City by Kevin Lynch

Illustrator Ellis Nadler's map of the solar system drawn From memory

Everything is just minutes away in a Bangalore real estate marketing map

SESSION 1 | 09:30 – 10:00 AM
GALLERY
Display your finished Election visualization.

SESSION 2 | 10:00 – 11:00 AM
READINGS
Read the following *The New Yorker* article, and 2 chapter notes from Lynch's *The Image of the City (1960)*. Come prepared with 2 questions or comments.
— Getting There: The science of driving directions by Nick Paumgarten (html)
— The City Image and its Elements – Kevin Lynch (pdf)
— The City Form – Kevin Lynch (pdf)

SESSION 3 | 11:15 AM – 12:15 PM
LECTURE/PRESENTATION
— Relevance of mental maps
— Key elements and techniques for wayshowing
— Mental maps in neuroscience and cognitive psychology
— Historical and present day design mapping innovations
— Mappings and their social context

SESSION 4 | 12:15 – 01:30 PM
ACTIVITY + GALLERY + DISCUSSION
You will be asked to respond to requests to locate/describe places, routes and events, centered on/around the NID Bangalore campus. The questions are not quoted here, but will be given to you as we proceed, so as to avoid priming you. After completing the activity, create a gallery of your responses.

Take some time to take in and compare responses. We will then discuss the following aspects and others.
— What differences can we notice in between the sets and within each of them?
— do any responses take significantly different approaches?
— What features are commonly included?
— How accurately are they represented, intentionally or not, and what is the effect?

LUNCH | 01:30 – 02:30 PM

SESSION 5 | 02:30 – 06:30 PM
ASSIGNMENT 3
Read the brief in the following page and begin working on the assignment.

ASSIGNMENT 3: MENTAL CITIES

BRIEF
Systematically locate and describe data of your choice on the NID Bangalore campus and present ('mash up') more than one layer of mapped data and explore relationships between them, towards producing a relevant or useful display or design.

STAGE 1
Your data collection could focus on the following or any other you think of:
— sets of objects or spaces, such as in a field guide
— types of spaces, by use, look, feel or other attributes
— study of a single space, object or person
— movement or dwelling of individuals or groups
— counting people or things
— timing of journeys, incidents or encounters
— content of conversations
— your thoughts and feelings
— songs you were listening to
— tracing decisions or paths taken by you or other people
— chance-generated paths e.g. decided by rolling a dice or accompanying people wearing red
— data trails; networked communications, system events, processes and transactions e.g. book lending/returning at the library

Means of capture could include:
— marks and notes on paper copies of
— times or timings
— other measurements
— sketches
— photography
— sound recording or notation
— found objects

For best results in the second stage of the assignment, you should consciously choose a different focus or means of capture to your class mates.
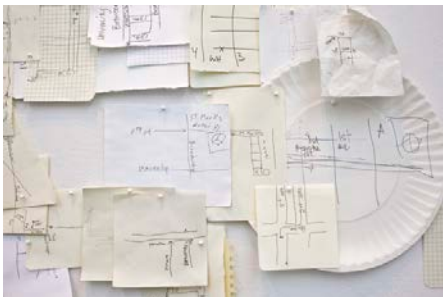
STAGE 2
After browsing the gallery of mappings, form groups of three to collaborate on producing a composite display or design.

Along with the mappings produced by individuals, groups might use or draw upon:
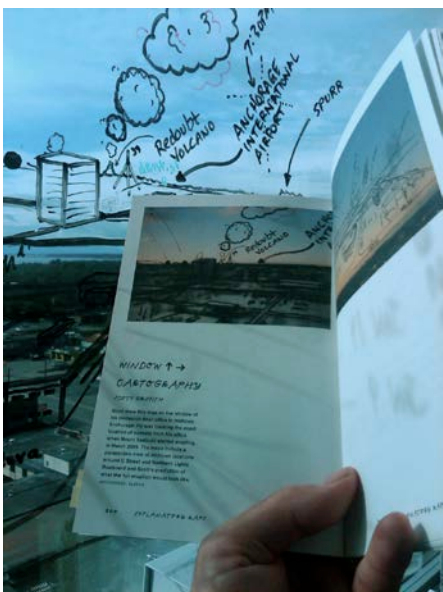— the campus map as published on the school website
— aerial or on-site photography from Google Maps or another source
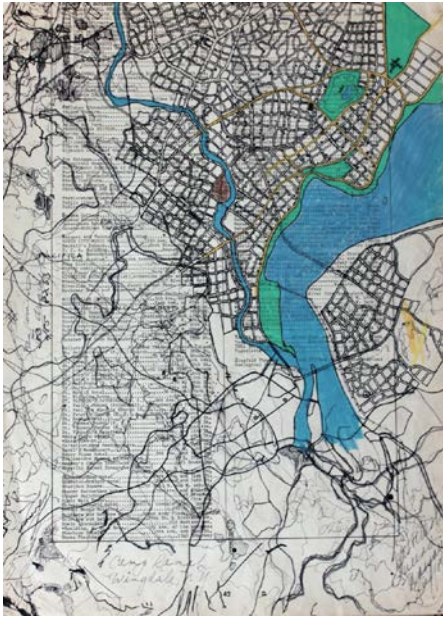
PERRY STEINDEL, Untitled, 1965

NOBUTAKA AOZAKI, From Here to There, 2012-

SCOTT GRIFFITH, Untitled photo, 2010

REQUIREMENT

Possible outputs:

— Mashed-up display or map
— visualised design intervention – building, space, object, furniture, performance, discovery tool or aid (mappings as research)

REFRENCES

Personal Maps. "I collect personal maps people draw. One's memory and perception of a place is very personal, so each map is a reflection, however small or large, of how the individual connects to their environment: knowing, organising, and understanding it".

Hand drawn Maps Association. "… a large collection of maps in both physical and digital formats comprising an immense variety of unique interpretations of place".

The Beauty of Maps is a BBC series that "[looks] at maps in incredible detail to highlight their artistic attributions and reveal the stories that they tell".

Strange Maps. "Frank Jacobs loves maps, but finds most atlases too predictable. He collects and comments on all kinds of intriguing maps—real, fictional, and what-if ones—and has been writing the Strange Maps blog since 2006".

Maps as metaphor. A series of map-based illustrations by Christoph Niemann.

Locals vs. tourists. A set of maps showing where people take photos in various cities around the world. The results are broken down into tourist photos and photos taken by locals.

From Here to There. Meet the Man Trying to Save the Lost Art of Hand-Drawn Maps.

Bangalore Old and New. (via Parag) "Play around with opacity to switch between the new Bangalore vs old Bengaluru. You can clearly see the diminishing lakes in this".

A look into the Map Room at the University of Cambridge. (via Kenneth) "The article shows two maps but you are left wondering what maps may reside among its collection of a million maps".

Mumbai Suburban Rail Map. (via Rasagy) "Recently saw two schematic maps of Mumbai locals done by students of Prof. Mandar Rane (IDC). Apart from the gorgeous output, I love how it is presented as a dialog, highlighting the process and thinking behind the exercise".

INFORMATION VISUALIZATION I
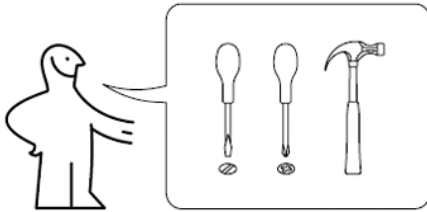# DAY 5 | FRIDAY | 20.12.2013

SESSION 1 | 09:30 – 10:30 AM
PRESENTATION
Present your individual mappings and group mash-ups.

SESSION 2 | 10:45 – 11:45 AM
READINGS
Read the following 2 chapters on and come prepared with 2 questions or comments.
— Understanding Comics: The Invisible Art by Scott McCloud (pdf)
— Comics & Sequential Art by Will Eisner – reader Chapter 2 - Imagery (pdf)

SESSION 3 | 12:15 – 01:30 PM
LECTURE / PRESENTATION
— Information vs. instruction
— Visual narratives
— Graphic devices in sequential art

LUNCH | 01:30 – 02:30 PM

SESSION 4 | 02:30 – 06:30 PM
ASSIGNMENT 4
Read the brief in the following page and begin working on the assignment. You are required to show concepts, iterations, layouts and finalise the design in consultation with me by the end of the day.
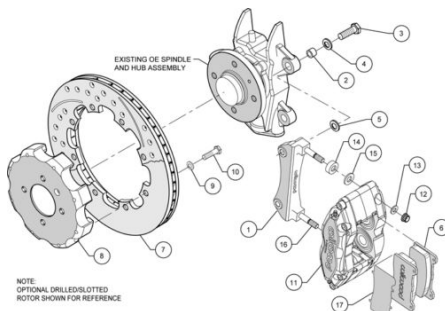
Present and discuss your finished diagram on Monday during the final presentations.

Assembly man from IKEA instruction manuals
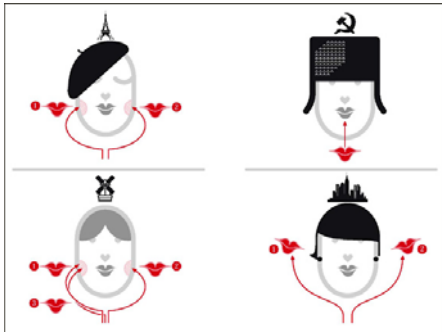
Wordless Diagram by Nigel Holmes
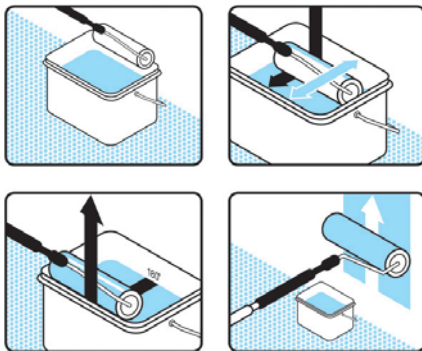
Juton Paint Instructional Diagram by Darren Whittington

Wilwood Disc Brake Kit Instructional Diagram

Adapter kit for Garmin GPS device

ASSIGNMENT 4: WORDLESS DIAGRAMS

BRIEF
Pouring milk from a packet or changing a diaper may seem like mundane activities, but when visualized on paper in step-by-step diagrams, they take on unusual lives of their own. In this assignment you will create a wordless diagram(s) to instruct how things work or how events occur.

While the objective of a narrative is to explain by giving the reader a vicarious experience of the intent through a story, the objective here is to explain by enabling the reader to sequentially step through the intent.
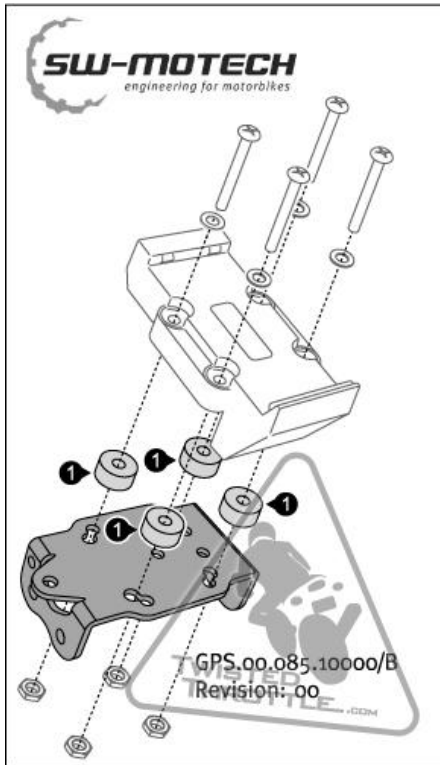
STAGES
1. Sketch at least five different ideas/concepts, A4
2. Sketch at least five alternative layout & visuals for the selected concept, A4
3. Create a full-size pencil rough showing all information for the selected visualization, A3
4. Compose final sequence to create a poster, A3, full color or mock up of fold if user manual

REQUIREMENT
High quality finished diagram(s). Present and discuss your ideas, desgin decisions and the final visualization

REFRENCES
— I Can't Stop Thinking, Scott McCloud
http://www.scottmccloud.com/1-webcomics/icst/index.html
— IKEA assembly instructions
http://www.ikea.com/ms/en_US/customer_service/assembly_instructions_new.html
— Chrisware, Building Stories
http://www.nytimes.com/2012/10/21/books/review/building-stories-by-chris-ware.html
— Designing Effective Step-By-Step Assembly Instructions
http://graphics.stanford.edu/papers/assembly_instructions/

Hindu mythology on temple structure
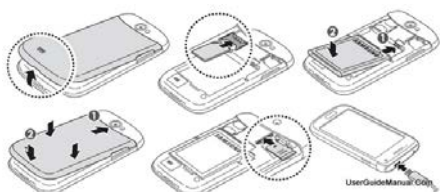
Samsung Galaxy user manual

INFORMATION VISUALIZATION I
DAY 6 | MONDAY | 23.12.2013

FINAL PRESENTATION
Display and discuss all 4 assignments in a coherent presentation, reflecting on the design process, lessons learnt, key takeaways and personal goals (in the field of information visualization).

SESSION 1 | 09:30 – 11:00 AM
1. Sindhu Rao
2. Sindhu MS
3. Shivani
4. Satabhdi
5. Sachin

SESSION 2 | 11:30 AM – 01:00 PM
6. Nila
7. Nikhil
8. Mrinmayi
9. Manali
10. Lalit

LUNCH | 01:00 – 02:00 PM

SESSION 3 | 02:00 – 03:30 PM
11. Kavita
12. Deepika
13. Atul
14. Agrima
15. Aatur

SESSION 4 | 04:00 – 05:00 PM
Concluding remarks and course evaluation.

END