# Special Topics in Design I
# DSL 810

# Topic 1
# Introduction and Website Design

# Instructor: Jay Dhariwal,
# Asst. Prof., IIT Delhi

24th July 2019

# Introductions

- [Myself](#)
- TAs: Sachin Tanwar, Sanju Ahuja

# What is this course about?

- Hands-on prototyping with electronics (sensors, actuators, etc.). Students would be able to get started with programming microcontrollers (Arduinos, PCB, etc.) and create user interface for their projects (Web, PC, Mobile Apps).
- Tentative class schedule

# What is this course about?

- [How to Make Almost Anything](#)

- [Fab Academy](#)

- [Example](#)

- Instructables, DIY sites for making.

# Why this course?

- Seminar
- Smart India Hackathon
- Vipul: Interaction Design with Embedded Systems https://www.youtube.com/watch?v=zNofmEdwRzY
- https://www.youtube.com/watch?time_continue=84&v=FlvRrptT1kk
- https://www.youtube.com/watch?v=3vvbEJmq3is

Department of Design, IIT Delhi

I came, I saw, I conquered.
                    -Julius Caesar

Students of IIT Delhi

I ideate, I make, I venture.
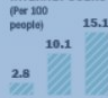
## GALLOPING INDIA

**TELECOMMUNICATION**
India has the second highest telecom subscriber base (2010)

MOBILE USERS (Million)
166 — 2006
752 — 2011
864 — 2013
969 — 2014
SOURCE: TRAI 2015

INTERNET USERS (Per 100 people)
2.8 — 2006
10.1 — 2011
15.1 — 2013
SOURCE: WORLD BANK

**SPACE TECHNOLOGIES**
India has emerged as a significant player in building & launching satellite to both polar and geo-synchronous transfer space orbit

**NUCLEAR TECHNOLOGIES**
Leads with advanced nuclear technology like Fast Breeder Reactor

**MISSILE TECHNOLOGIES**
Self reliance in missile technology with successful completion of Integrated Guided Missile Development Programme (IGMDP).

**LIFE SCIENCES, BIOTECHNOLOGY**
Spearheading low cost drug delivery to deprived sections in India and other parts of the world.

## CANTERING INDIA

**CIVIL AVIATION**
Ninth largest civil aviation market in the world, still no indigenous aircraft manufacturing capability.

PASSENGER HANDLING CAPACITY (Million)
72 — 2006
233 — 2011

CARGO HANDLING CAPACITY (Million MT)
1.59 — 2006
2.39 — 2011
SOURCE: MoCA 2012

**SERVICES**
Contributes to 60% of the country's GDP, but skewed IT enabled services (ITeS) in rural India.

**CHEMICAL PROCESS INDUSTRIES**
12th largest producer in the world & 3rd largest in Asia in terms of volume, but a net importer of chemicals.
SOURCE: TV2035 MANUFACTURING TECHNOLOGY ROADMAP

**ROAD TRANSPORTATION**
Notable progress in road infrastructure, but economic losses due to inadequate maintenance, poor handling of congestion and increasing accidents

ROAD NETWORK ('000 km)
2327 / 1260 — 1991
3373 / 1972 — 2001
4690 / 2749 — 2011
4865 / 2838 — 2012
● Total Road ● Rural Road
SOURCE: MoRTH 2011-12

## TROTTING INDIA

**FOOD & AGRICULTURE**
Wastage of one-third of the produce hinders growth, but still manages to contribute 10.3% of India's total exports in 2013-14.
SOURCE: MINISTRY OF COMMERCE, 2013-14

**ENGINEERING**
INDIA'S ENGINEERING EXPORT (USD Billion)
33.7 — 2008
32.6 — 2010
58.6 — 2012
62.3 — 2014
SOURCE: IEF REPORT, 2015

MANUFACTURING: % SHARE IN GDP (INR '000 crores)
8000 — 16.4
6000 — 16.0
4000 — 15.6
2000 — 15.2
0 — 14.8
FY 2005 — FY 2012

**ELECTRONICS & COMMUNICATION**
Leader in software export; on the flip side, is also a large importer of critical hardware & general use electronic items.

15.64%
India's share in world software market in 2013-14

<2%
India's share in world electronic equipment production in 2013-14
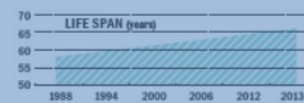SOURCE: ESC REPORT

**MATERIALS & PROCESSING**
Industry rising in sectors like Steel though technology breakthroughs in metals like Titanium, Nickel, Magnesium etc still awaited; De-growth in mining sector prevails
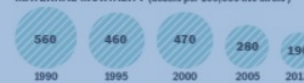
## WALKING INDIA

**HEALTHCARE**
Lack of affordable healthcare systems, inadequate infrastructure and expensive diagnostics

LIFE SPAN (years)
70
65
60
55
50
1988  1994  2000  2006  2012  2013

INFANT MORTALITY RATE (deaths per 1000 live births)
94 — 1988
74 — 1994
68 — 2000
57 — 2006
42 — 2012
41 — 2013

MATERNAL MORTALITY (deaths per 100,000 live births)
560 — 1990
460 — 1995
470 — 2000
280 — 2005
190 — 2013
SOURCE: WORLD BANK

**ADVANCED SENSORS**
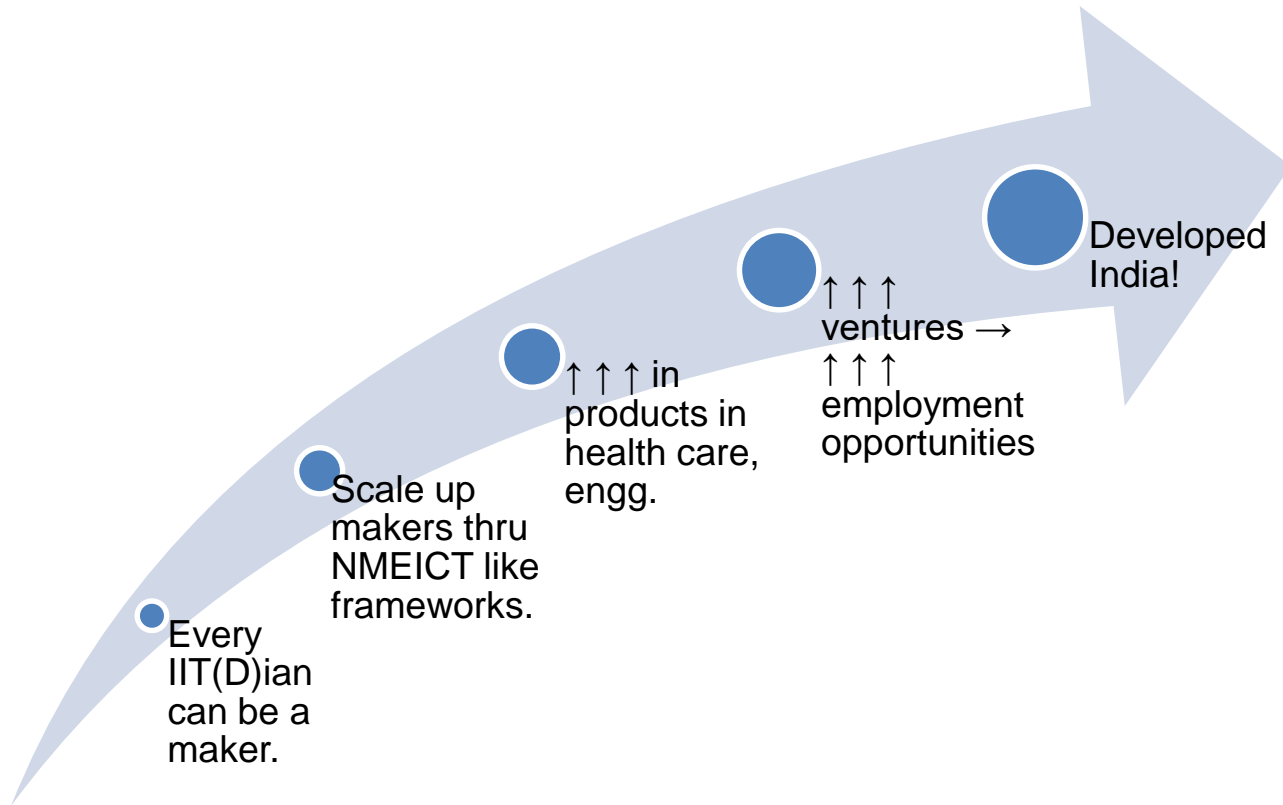Low indigenization, banking solely on import.

**WATERWAYS**
Less than 1% share of cargo; short of fairways, terminals, navigation aids and fleets

Figures are for corresponding financial years

Source: Technology Vision 2035, TIFAC, Govt. of India, 2015

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↑ ↑ ↑ Indigenous design and manufacturing is the need of the hour

Developed India!

↑ ↑ ↑
ventures →
↑ ↑ ↑
employment
opportunities

↑ ↑ ↑ in
products in
health care,
engg.

Scale up
makers thru
NMEICT like
frameworks.

Every
IIT(D)ian
can be a
maker.

# Logistics

- Grading
- WhatsApp group (Admin)
- Windows OS (Mac?)
- Laptop access? Computer access?
- Class hours: Tuesday 9 am – 11 am in Prototyping Studio (WS-209)
- Wednesday 3 pm – 5 pm in Design Studio (WS-213)
- Prototyping Studio cleanup and upkeep (3 TAs) + help with DSL 732.

# Introductions

- Yourself(https://forms.gle/YwYpDEyEFqqdMYi66)

- Peer to peer learning (helping each other, each one with different strengths)

# Website Design

- Understand the functional side of interaction design
- Digital repository/Portfolio
- Blogging/Documentation to remember.
- User Web Pages, WinScp
- Epizy
- Template 1 (Basic html)
- Template 2 (Vibhuti)
- Internet access, Sublime Text Editor, MAMP

# [User Web Pages](#), [WinScp](#)

# WinScp specifics

- As per advice on [User Web Pages for IIT Delhi](#):
- Folder name is public_html for PhD students.
- Website link: [http://web.iitd.ac.in/~userid](http://web.iitd.ac.in/~userid)
- Folder name is private_html for Bachelors and Masters students.
- Website link: [http://privateweb.iitd.ac.in/~userid](http://privateweb.iitd.ac.in/~userid)

# Epizy website

- [https://infinityfree.net/](https://infinityfree.net/)
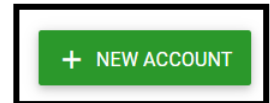


Thanks to Vibhuti Sagar, Summer Intern 2019

# Epizy website

- Verify email

**Accounts**
Active Accounts: 0 / 3

No accounts yet. Create an account now.

    +  NEW ACCOUNT

**Use a free subdomain**

Enter a free subdomain...

yourname                                      .epizy.com              ▼

**Use a custom domain**

# Epizy website



Upload files in htdocs folder

Please follow the shared Template Document for further instructions.

# Epizy

- Epizy 10 MB limit so compress images before uploading and videos only as youtube links.
- Quota per student at IIT Delhi (Please find out?)
- Questions

# Website building

- app.infinityfree.net
- https://www.sublimetext.com/3
- https://www.mamp.info/en/downloads/
- https://www.w3schools.com/
- hello_world.html
- https://wordhtml.com/
- View source code in different browsers
- HTML5 (html, css, javascript)
- Wordpress

# 30<sup>th</sup> July 2019

# 30th July 2019

# Basic html template

- [Example](#)
- index.html
- about.html
- assignments.html
- project.html

# Compressing images for the web

- Resize them in Paint.
- https://compressjpeg.com/ to batch compress them

- Web.whatsapp.com for compressing images

- Download imagemagick
- Commands to compress images

- Do it in a folder where permissions to write there: C:/Users/jay
- Create a folder – compress_images.
- Command prompt. cd compress_images
- Place images to be compressed in this folder.

- magick -quality 20 home_web.jpg home_web_cmp.jpg
- magick home_web.jpg -resize 20% home_web_compressed.jpg

# Compressing images with Imagemagick

Batch compress images in a folder: Bat file

- [https://www.howtogeek.com/tips/how-to-compress-a-folder-of-images-easily-with-a-batch-file-in-windows/](https://www.howtogeek.com/tips/how-to-compress-a-folder-of-images-easily-with-a-batch-file-in-windows/)


- @echo off
  for %%f IN (*.jpg) DO **magick** -quality 20 "%%f" "%%f"
- compress_images.bat file place in C:/Windows
- Run compress_images in the folder where images are kept.

# Creating and uploading videos

- Create a youtube channel – uploading videos, embed videos in the basic html template
- ffmpeg (downloaded with imagemagick)
- http://academy.cba.mit.edu/classes/computer_design/video.html
- http://archive.fabacademy.org/2017/fablabkochi/students/299/learn.w2.html
- ffmpeg -i presentation.mp4 -b:v 512k presentation_512.mp4
- Download Kdenlive video editor (Example), start twice?
- Important for project presentations

# Other options

- Fab Academy [Notes](Notes) [Video](Video)
- freecsstemplates.org
- [https://www.youtube.com/watch?v=7gfJNk_SAbU](https://www.youtube.com/watch?v=7gfJNk_SAbU)
- WordPress

# Assignment 1a

- Set up your website and document this process.

- Document as you work from now on.

- No hard deadline for submission of assignment 1 as of now. (Get settled.)

# Vibhuti's template

- Template document
- Instructions

# Summary

- Overview of the course
- Website design and development
- Local testing of the website
- Use a website hosting service
- Working with a html-css website template for the class
- Compressing images and videos
- Video editing with Kdenlive