Digital Urban Visualization. Understanding Dynamics

Chair of Information Architecture, ETH Zürich
Visualization can help us to understand before unknown properties and relationships.

It uses the human perception capabilities to make information more understandable and helps to clarify and reason about otherwise abstract ideas.
Introduction

French Invasion in Russia 1812: Text

Source: wikipedia.org
French Invasion in Russia 1812: Visualization

Digital Urban Visualization. Understanding Dynamics
Cholera epidemic in London 1854

Introduction

Source: globalsecurity.org
The lecture will introduce you to programming and visualizations.

- Programming (3 weeks)
- Programming + Blender (2 weeks)
- Programming + Rhino (1 week)
- Apply the learned in a small project, e.g. your design studio project and justify it with using data.
You will learn the basic of Python programming.
- The way of thinking in programming.
- Basic concepts and structures.
- Reading & processing big data sets (for visualizations).
- How to use libraries.
We will introduce you to Blender and show you how to use your programming skills to make nice renderings.
You need to have the following software installed on your laptop:
- The newest build of Blender
- Python
- Your favourite programming IDE, e.g. PyCharm (http://www.jetbrains.com/pycharm/)
- Tkinter Python library (https://wiki.python.org/moin/TkInter)
- Python Image library (http://www.pythonware.com/products/pil/)
- To test, if a libraries is installed, open the Python console and type:

  ```python
  import Tkinter, Image
  ```
To pass the course, you need:

- 80% attendance.
- 6 out of the 7 exercises solved.
- Completion of the final project.
You can find all the course material on our course website:
http://www.ia.arch.ethz.ch

We will provide you with:
- Slides
- Tutorials
- Exercises
- Tipps and tricks for the course.