

Practical Business Python

Lecture 1: Introduction

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Agenda

1. Introduction
2. Syllabus & course roadmap
3. What this course?

1. Introduction

About me

Hello! My name is [legor](#).

- Assistant Professor ([link](#)), Woosong University
- Ph.D. (Public Policy), KDIS (ROK, 2022)
- M.A. (Public Policy), KDIS (ROK, 2014)
- M.A. (International Economics), KNEU (Ukraine, 2009)
- B.A. (International Economics and Management), KNEU (Ukraine, 2008)
- Background: international finance & central banking
- Research interests: banking and central banking, computational data science

Some Info:

- email: ievysh@wsu.ac.kr
- office: W19 #223
- [Google Scholar](#)
- [Linkedin](#)
- [ResearchGate](#)
- [GitHub](#)

About you

- What's your preferred name?
- Where are you from?
- Background survey [link](#)
- Expectation survey [link](#)

General things

- Prerequisites:
 - access to the internet and a computer (laptop) are required
- Our Goals:
 - to look through concepts and tools of PBP to further apply in real-life practice
 - a **smart consumer** of data science
 - an **informed producer** of elementary data science product
 - see that Data Science is *fun* :-)
 - ~~become a pythonista ~~
- Our Principle:
 - learning by doing
 - mutual respect
 - put one's efforts
- **My role**: to guide you through the course, i.e. **mentoring and facilitating**
- Your suggestions are welcomed (through **KSS** survey, etc.)!

Our communication

- Check LMS regularly for materials and messages
- Feel free to approach me before or after class
- **Office hours:** *Thu 11 am - 12 pm* or by appointment. You are welcome to discuss course-related issues and questions, career plans, etc.
- Check / use **LMS** (incl. messages in-there)
- **Emailing policy:** email me to set up a one-to-one meeting or in the case of some urgent issues.
 - Please indicate the course name / section in the subject line and the issue (e.g., *[Practical Business Python (Sec 1)] Meeting request*)
 - Please write at least two times when you would like to meet and a brief description (1-2 sentence) why you want to meet up with me
 - I may not reply on time (so email me in advance)

2. Syllabus & course roadmap

The course in a nutshell

1. Practical Business Python basics
2. Practical implication (class assignments and a project)
 - Functional (data collection, cleaning, visualization, analysis, etc.)

Broad coverage

- **Formal/core curriculum:**

- Concepts
- Understanding
- Real-life cases
- Problem-solving
- Application

- **Hidden curriculum:**

- Values
- Communication
- Cooperation
- Discussions
- Standards

Logistics & materials

- Check out the syllabus
- A typical class will focus on concepts, tool and technique overviews, and practical exercises
- The lecture notes will be made available at least one or two days beforehand

Course materials:

- **Lecture notes**
- Wes McKinney (2022). *Python for Data Analysis*
- Joel Grus (2020). *Data Science from Scratch*
- DataCamp Classroom

Study Suggestions

1. Reading materials before class
2. Attend lectures (20% of your grade)
3. Be active in class (don't miss and perform in-class activities)
4. "The best way to learn ... is to stay on top of it as you go along. The worst way is to cram the night before exams." (c)

Typical failer profiles

1. Couldn't care less
2. Struggle with English
3. Personal issues
4. Data science (computer) PTSD

1. Couldn't care less

- Great indifference
- Missing lectures
- Coming/leaving late/early
- No in-class activities
- Doing something else in class
- Cheating / free riding

DROP IT

2. Struggle with English

- Trouble with listening/reading comprehension
- Poor vocabulary
- Hard time with new terminology

It's okay, just push harder

3. Personal issues

- Health
- Family
- Job
- Universe against you

Come talk to me asap

4. Data science (computer) PTSD

- Traumatic data science experiences
- Mental blocked
- Electrical appliances turn off all around you

Just patience & work harder

To remember

- Checking attendance is your own *responsibility*.
 - See the Attendance app guide for students [here](#).
 - **Come with attendance issues right at the end of the class**, if any.
 - I will not be able to fix it later.
 - Excused absence (hospital visits, etc.) - go to talk to the TA.
- If you miss some in-class assignments, you may ask to take them later during office hours.
- Don't postpone any talks about your grades to the very end of the semester.

3. What Is Practical Business Python?

It is Business analytics with *Python*

Nowadays, it's the most popular language

Top 20 Most Popular Programming Languages in 2022 & Beyond		
Rank	Programming Language	Market Share
1	Python	27.61%
2	Java	17.64%
3	JavaScript	9.21%
4	C#	7.79%
16 filas más • 22 sept 2022		

Pythons is pure poetry

```
import this

# Output
The Zen of Python, by Tim Peters

Beautiful is better than ugly.
Explicit is better than implicit.
Simple is better than complex.
Complex is better than complicated.
Flat is better than nested.
Sparse is better than dense.
Readability counts.
Special cases aren't special enough to break the rules.
Although practicality beats purity.
Errors should never pass silently.
Unless explicitly silenced.
In the face of ambiguity, refuse the temptation to guess.
There should be one-- and preferably only one --obvious way to do it.
Although that way may not be obvious at first unless you're Dutch.
Now is better than never.
Although never is often better than *right* now.
If the implementation is hard to explain, it's a bad idea.
If the implementation is easy to explain, it may be a good idea.
Namespaces are one honking great idea -- let's do more of those!
```

Purposes

A [MicroStrategy](#) survey found that businesses around the world are utilizing data to

- Improve efficiency and productivity (64 %)
- Achieve more effective decision-making (56 %)
- Drive better financial performance (51 %)

Concepts

- *Data science* is an interdisciplinary field that uses scientific methods, processes, algorithms and systems to extract or extrapolate knowledge and insights from noisy, structured and unstructured data, and apply knowledge from data across a broad range of application domains. Data science is related to data mining, machine learning and big data ([Wiki](#))
- *Data analytics* (a subfield of data science) is the science of analyzing raw data to make conclusions about that information ([Invest](#))
- **Business analytics** is the process of using quantitative methods to derive meaning from data to make informed business decisions (the Harvard Business School [Online](#))

Business Analytics vs. Data Science

- The difference between business analytics and data science lies in **how data is used**
- Business analytics is concerned with extracting meaningful insights from and visualizing data to facilitate the decision-making process, whereas data science is focused on making sense of raw data using algorithms, statistical models, and computer programming
- Despite their differences, **both business analytics and data science glean insights from data to inform business decisions**

Business Analytics vs. Data analytics

- Data analytics does not have to be used in pursuit of business goals or insights. It is a broader practice that includes business analytics
- BA involves using data analytics tools in pursuit of business insights. However, because it's a general term, data analytics is sometimes used interchangeably with business analytics

Business Analytics methods

1. *Descriptive*: The interpretation of historical data to identify trends and patterns
2. *Diagnostic*: The interpretation of historical data to determine why something has happened
3. *Predictive*: The use of statistics to forecast future outcomes
4. *Prescriptive*: The application of testing and other techniques to determine which outcome will yield the best result in a given scenario

Business Analytics tools

- Open Source Tools:

- R and Python
- Apache Spark
- SQL

- Famous Tools:

- Excel
- Power BI
- Tableau
- SAS
- Microstrategy

The benefits of Business Analytics

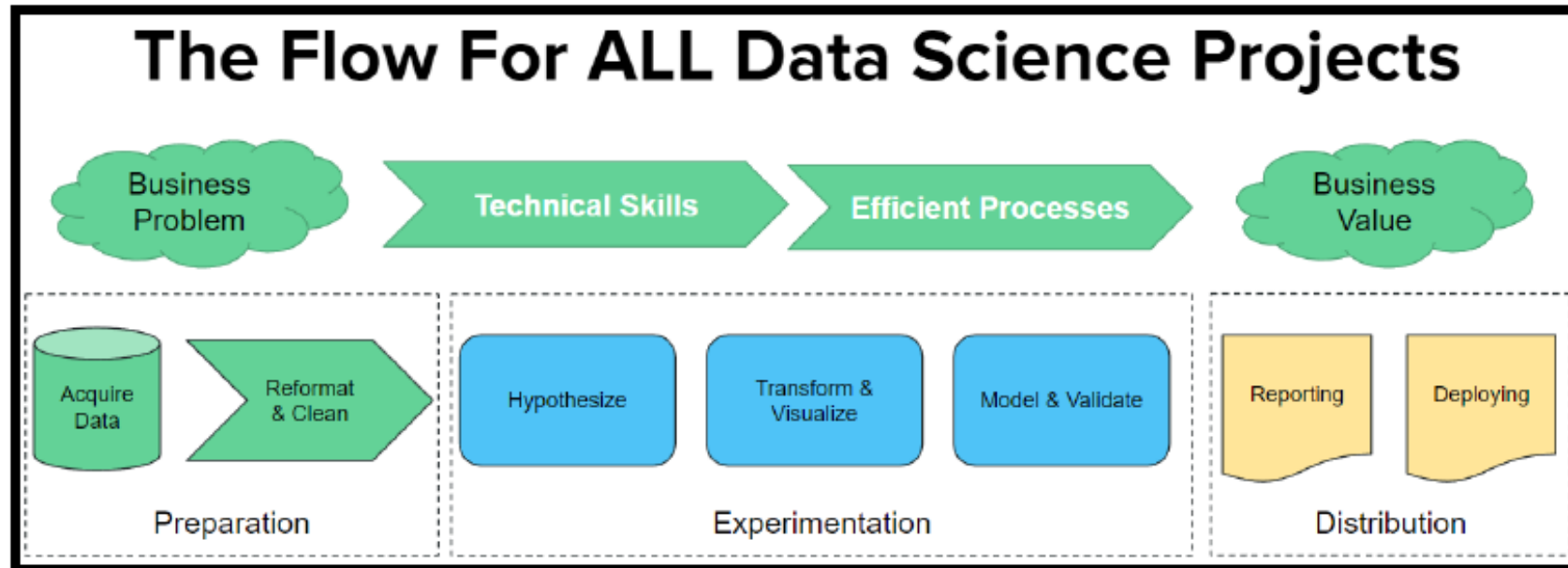
1. More informed decision-making
2. Greater revenue
3. Improved operational efficiency

Typical problems in Business Analytics

1. Too many data sources [link](#)
2. Lack of skills
3. Data storage limitations
4. A lack of understanding from the business side of the benefits and actual power of data science

Data Science workflow

Matt Dancho. Everything You Should Already Know About Data Science.



Main focus



**Learning
Data Science**



**Learning how to
solve business
problems**

- Instead of learning data science
- Study learning **how to solve problems** via some tools application

[source link](#)

Example

Step 1: Start with a problem.

Example. One person enjoys drinking beer, specifically *Corona Extra* (who doesn't?). But he had a tough time finding new ones to try.

Step 2: critically think about the problem. Can I find data? Yes, he found a CSV of beers with all sorts of data like alcohol content, type of beer (lager, ipa, wheat, etc)

What would solve this problem? -> An easy-to-use app that recommended 10 beers to try.

Step 3. Research & build.

Example. He built a small web app that recommends 10 beers based on user preferences.

How did he get started? -> He researched...

What it takes to make a web app. How to make product recommendations. How to do it in R

[Source link](#)

Any QUESTIONS?