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# Data Analytics Fundamentals Fundamentos de Análisis de Datos

*Connect Session #1*

06/12/2020

A person's hand is shown typing on a laptop keyboard. The laptop screen displays a data visualization interface with various charts and graphs. The entire image is overlaid with a semi-transparent teal color. The text "Welcome to Udacity!" is centered in the upper half of the image in a white, sans-serif font.

# Welcome to Udacity!

Where your journey into the data world begins!

# What do we expect from you?

During the week, you are expected to work an estimated from 10 - 15 hours on your Nanodegree classroom program on your own so that you are prepared for the following week's session.






**15 HOURS / WEEK**

You have to watch your ND videos in your classroom, to start all you have to do is to log into your [classroom.udacity.com](https://classroom.udacity.com) and get started your learning journey on the class right away.

Watch this [video](#) to know more about your classroom experience.

# Learning objectives

Learn programming skills needed to uncover patterns and insights in large data sets.

	SKILLS	COURSES	PROJECT PORTFOLIO
<p>Time: 4 months</p> <p>Skill level: Intermediate</p> <p>Tools Used:</p> <div>    </div>	<ul style="list-style-type: none"> <li>Investigate a dataset using Python data analysis packages</li> <li>Gather, assess, and clean data for analysis</li> <li>Manipulate data in a database using SQL</li> </ul>	<ul style="list-style-type: none"> <li>Introduction to Python</li> <li>Introduction to Data Analysis</li> <li>Data Wrangling</li> <li>Introduction to SQL</li> </ul>	<ul style="list-style-type: none"> <li>Explore Weather Trends</li> <li>Explore US Bikeshare Data</li> <li>Investigate a Dataset</li> <li>Wrangle and Analyze Data</li> <li>Investigate a Relational Database</li> </ul>



# We want to know you!

What is your name?

What do you do?

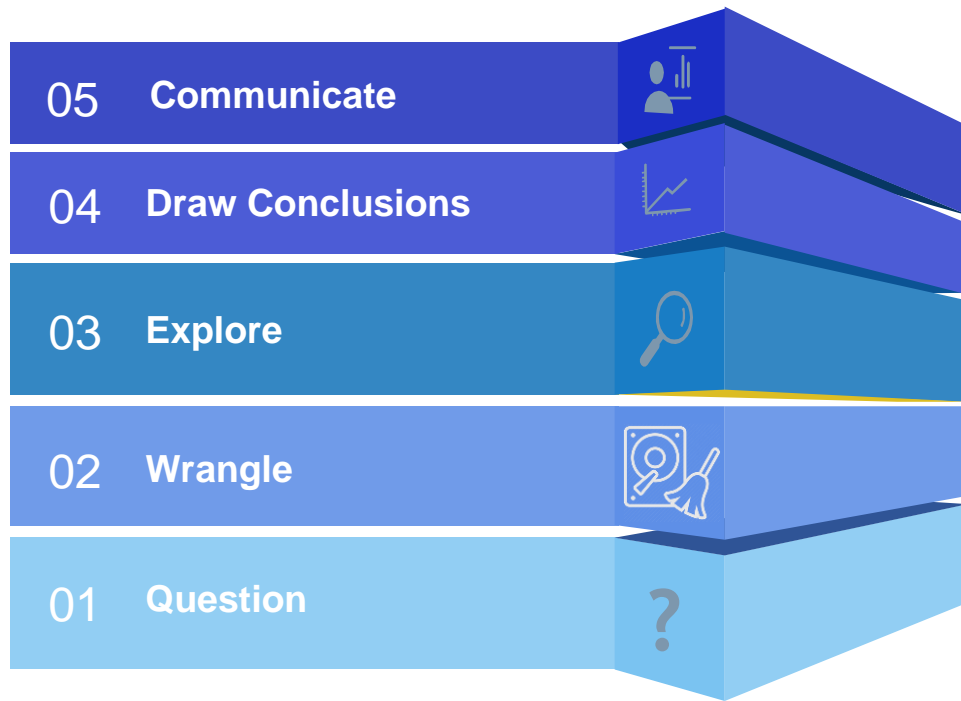
Why Data?

Key definition:

# DATA ANALYSIS

**Data** is defined as distinct pieces of information. Data comes in different forms: numbers, text, images, audio, video...

**Data Analysis** is a process of inspecting, cleaning, transforming and modelling data with the goal of discovering useful information, informing conclusions and supporting decision-making.



Q: Where do Analysts spend most of their time?

# What is Data Science?

## “The art of processing and learning things from data”

**Interdisciplinary field”** - Data science is inherently broad, with elements of statistics, programming and business.

**About processes and systems** - This makes data science different from statistics. It's not just about results - it's about processes and systems.

**To extract knowledge or insights from data** – This is what makes data science different from software engineering. It's not just about systems, it's about learning something.

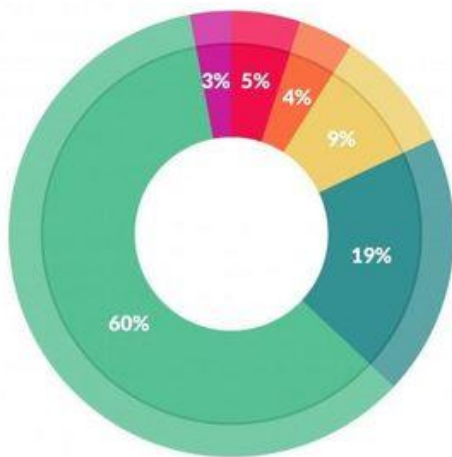
**In various forms, either structured or unstructured** – Again, statisticians don't traditionally work with all the forms of data that data scientists use.

**Which is a continuation of some of the data analysis fields such as statistics, data mining, and predictive analytics, similar to Knowledge Discovery in Databases** – Reiterating that data science is interdisciplinary. One of the key distinctions of data science is that it uses skills from programming and statistics.

“Data for Decision Making”

# What do you need to learn?

Dealing with unstructured, messy and big datasets is a key skill, and finding trained analysts who are able to deal with such data is a major business problem. As an analyst you'll spend most of your time data cleaning, and so being trained in how to do this is a key skill.



What data scientists spend the most time doing

- Building training sets: 3%
- Cleaning and organizing data: 60%
- Collecting data sets: 19%
- Mining data for patterns: 9%
- Refining algorithms: 4%
- Other: 5%





# Preparing your start

Best practices

# Asking questions?

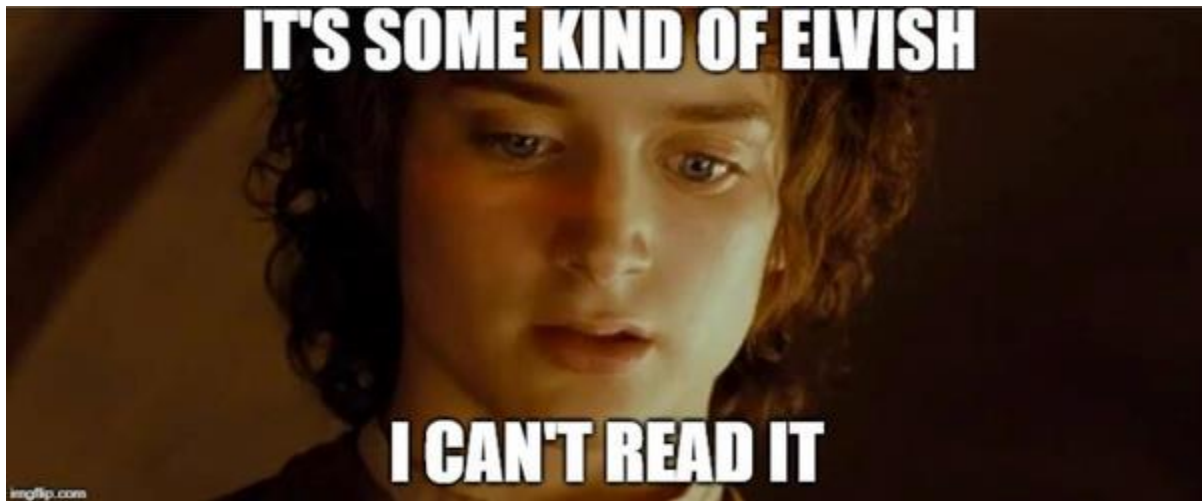
“There are no silly questions, it’s just silly who doesn’t ask”

- Explain the problem as clearly as possible.
- What did you expect to see? What are you seeing instead?
- What error message are you seeing (if any)?
- What was the last thing you changed or added in your code before things stopped working?



# Writing code

When you trying to look at the code you wrote a month ago...



When you first start learning to program it can be difficult enough to write code that actually works. Why should you also spend time making your code look good? Well, code style is about much more than looking good.

# Coding style



## snake\_case

Pros: Concise when it consists of a few words.  
 Cons: Redundant as hell when it gets longer.  
`push_something_to_first_queue`, `pop_what`, `get_whatever...`



## PascalCase

Pros: Seems neat.  
`GetItem`, `SetItem`, `Convert`, ...  
 Cons: Barely used. (why?)



## camelCase

Pros: Widely used in the programmer community.  
 Cons: Looks ugly when a few methods are n-worded.  
`push`, `reserve`, `beginBuilding`, ...



## skewer-case

Pros: Easy to type.  
`easier-than-capitals`, `easier-than-underscore`, ...  
 Cons: Any sane language freaks out when you try it.



## SCREAMING\_SNAKE\_CASE

Pros: Can demonstrate your anger with text.  
 Cons: Makes your eyes deaf.  
`LOOK_AT_THIS`, `LOOK_AT_THAT`, `LOOK_HERE_YOU_MORON`, ...



## nocase

Pros: Looks professional.  
 Cons: Misleading af.  
`supersexyhippohypothalamus`, `bool penisbig`, ...

# Commenting code



Places to include comments:

- Explaining why you've done things a certain way

- Explaining the results of an analysis in a script

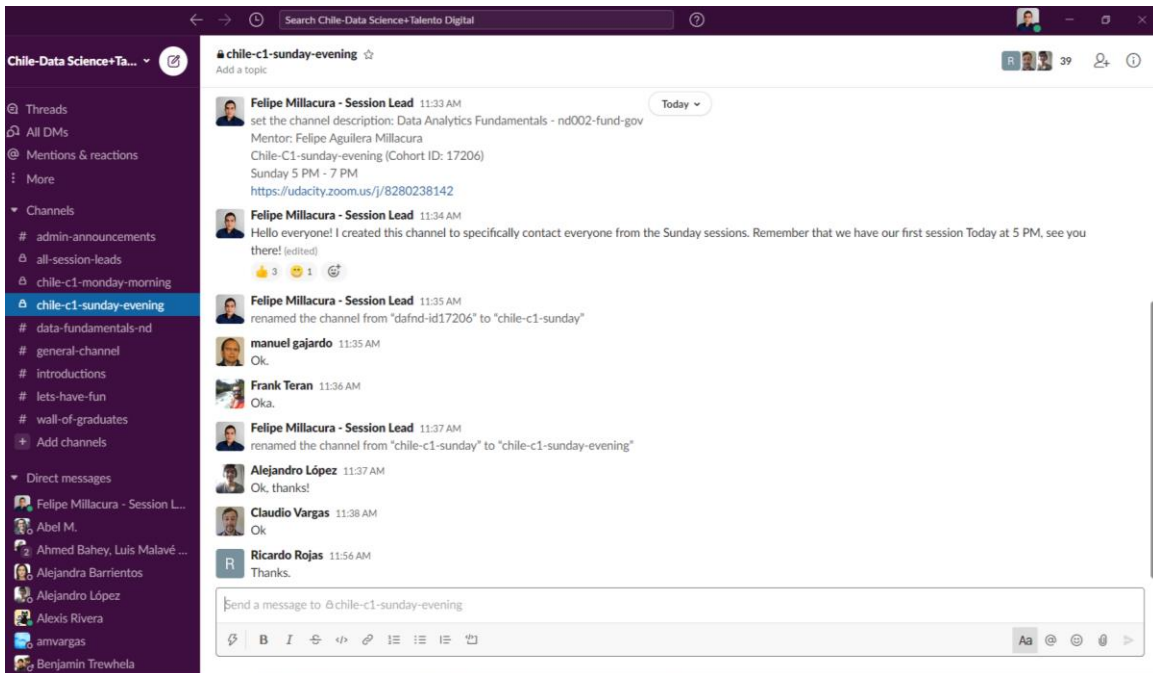
- Explaining a particularly confusing line of code

90% of all code comments are unnecessary

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# Community

# Communications



**PLEASE** make sure you use the same email address as the one you used to create your Udacity account throughout the whole program and across platforms!

# Udacity Virtual Connect setup



## ***Typical virtual connect session schedule (~1.5 hours)***

10 min

Round the room  
attendance

10 min

Discussing  
student progress

70 min

Students activities and roadmap for  
the coming project

30 min

Student Q&A (optional)





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# FAQs

Every time you submit a project, you will receive in-depth, personalized feedback on your project submission from one of our expert project reviewers. Project review usually take from 2 to 3 days. Once your review is ready, you will get an email to notify you and you will be able to view it. There are three results for the review:

## Non-gradable

The reviewer was not able to grade your project. You either submitted the wrong files or the files submitted cannot be opened because they are in an unsupported format. You can resubmit your project again from your classroom after addressing these issues.

## Requires Changes

Your project didn't meet rubric specifications. The reviewer will highlight which part that requires to be edited so that you pass the project on your next submission. You can resubmit your project again after editing it through your classroom.

## Meets Specifications

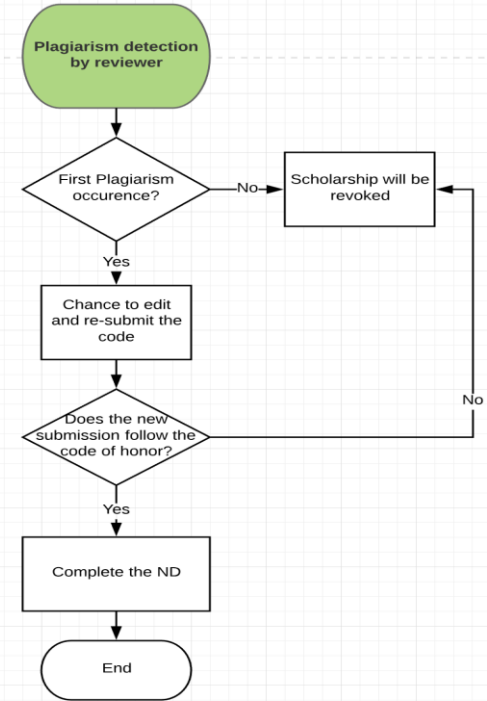
You've successfully completed the rubric requirements and passed your project.



## Be aware of plagiarism, though!

- Project submissions must consist of original work
- Submitted projects will be scanned for plagiarism
- Students who are found to have plagiarised will risk their Nanodegree being revoked as seen to the right
- Read the honor code and the rubric carefully in all projects

**DON'T COPY**





# Revoking Warning


To avoid the risk of getting **revoked** from your Nanodegree and losing your scholarship, make sure you:

1. Submit your first projects on time and stay on track.
2. Attend your weekly **Connect Session** because attendance is mandatory.
3. Follow your [weekly schedule](#) and make the necessary progress in your classroom.


Follow the the rules above to avoid losing your scholarship in the revoking cycle that will happen by the end of the **3rd week** of this scholarship.

**Tip:** Project reviewing might take from 1 to 3 days. We highly encourage you to try to submit your project as soon as you can and not wait until the last minute.

# Weekly schedule

Week	Date (Start of week)	Project due	Before session	Session
Week 1	12-5-2020		Start watching videos from Welcome to the Nanodegree Complete sections: - Welcome to the Nanodegree - The Life of a Data Analyst - Intro to SQL Start P1: Explore Weather Trends	Welcome to the Program Intro to SQL
Week 2	12-12-2020	12-18-2020	Start watching videos from Introduction to Python Complete sections: - Why Python - Data Types & Operators - Data Structures <b>Pass P1: Explore Weather Trends</b>	Data Types, Operators, Data Structures hands on
Week 3	12-19-2020		Continue watching videos from Introduction to Python Complete sections: - Control Flow - Functions	Control Flow, Functions hands on
Week 4	12-26-2020		CHRISTMAS BREAK 	
Week 5	1-2-2021		Continue watching videos from Introduction to Python Complete sections: - Scripting - Numpy - Pandas	Numpy, Pandas hands on
Week 6	1-9-2021	1-15-2021	Continue watching videos from Introduction to Python Complete sections: - Advanced Topics <b>Pass P2: Explore US Bikeshare Data</b>	Finish P2: Explore US Bikeshare Data Python refresher activity
Week 7	1-16-2021		Start watching videos from Introduction to Data Analysis Complete sections: - Anaconda	- Career Session "Elevator Pitch" for 30 minutes at the end of your technical session, conducted by your Session

# Weekly schedule

Week	Date (Start of week)	Project due	Before session	Session
Week 8	1-23-2021		Continue watching videos from Introduction to Python Complete sections: - The data analysis process - Case studies - Programming workflow for data analysis	Activity Case study
Week 9	1-30-2021	2-5-2021	<b>Pass P3: Investigate a Dataset</b>	Finish P3: Investigate a Dataset
Week 10	2-6-2021		Start watching videos from Data Wrangling Complete sections: - Introduction to Data Wrangling - Gathering Data Start P4: Wrangle and Analyze Data	Data wrangling activity
Week 11	2-13-2021		Continue watching videos from Data Wrangling Complete sections: - Assessing Data - Cleaning Data Continue P4: Wrangle and Analyze Data	Data wrangling activity
Week 12	2-20-2021		Continue P4: Wrangle and Analyze Data	Data wrangling activity
Week 13	2-27-2021	3-5-2021	<b>Pass P4: Wrangle and Analyze Data</b>	Finish P4: Wrangle and analyze data
Week 14	3-6-2021		Start watching videos from Introduction to SQL Complete sections: -Basic SQL -SQL Joins	Introduction to SQL Part 1 (Basic SQL & SQL Joins)
Week 15	3-13-2021		Continue watching videos from Introduction to SQL Complete sections: -SQL Aggregations -SQL Subqueries & Temporary Tables -Work on P5: Investigate a Relational Database	Introduction to SQL Part 2 (SQL Aggregations & SQL Subqueries & Temporary Tables)
Week 16	3-20-2021	3-26-2021	Continue watching videos from Introduction to SQL Complete sections: -SQL Data Cleaning <b>Pass P5: Investigate a Relational Database</b>	Introduction to SQL (SQL Data Cleaning) + Discussing P5: Investigate a Relational Database
Week 17	3-27-2021		<b>Finish &amp; GRADUATE</b> 	

# The end goal!



## Congratulations Sabrina! You've earned it.

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 [DOWNLOAD SYLLABUS](#)

<https://confirm.udacity.com/UR76TRQ9>





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# Udacity Team wishes you a very successful Learning Journey





