A Typical Morning

Morning Ruotine

Carried out by TAs

Every Morning, we'll have one hour to recconect with classmates and content.
It has two activities: engagement and recaps.

> *For Full-time Bootcamps, Moring Routine goes from 9 am to 10 am max! It can also be rescoped to only 30 min.*

> *For Part-time Bootcamps, Moring Routine is performed only on Saturdays.*

Part 1 | Engagement

Relaxed activities to share more of who we are, what we are ainterested in and how we feel along this experience.

Part 2 | Recap

Learning Activities designed to review key concepts from the previous days. The purpose is to build a solid foundation for the whole class.

Recaps don't mean to be tests or pasive instruction. Ideally, the studets would be using flip learning techniques, putting their understanding – and misconceptions – at play while collaborating to shared knowledge to move forward. All the class benefits from regular recaps.

Some Ideas ...

– Draw Yourself: Promt the students to "Draw yourself as if your were on holidays right now..."

– House Museum: Bring to classroom some of your favourite hats, mugs or objects at home and share the story with the class.

What works

– Use your whiteboard and adress higher–level concepts. These have the power to condense a lot of learnings and arise possible confusions.

– Prep pair, gruop or class activities where students are requested **to explain or define concepts for themselves.**

– Gamify whenever possible, using apps like Kahoot can turn recaps into very engaging activities!

A Typical Class

Lessons, Activities and Labs

Carried out by LTs

Each day, the Instructor is going to guide the class through new concepts and using new tools. Most of the time will be spent in hands-on activioties promoting active learning

> *For Full-time Bootcamps, every day we will cover two lessons, that sum up to 6 hours of class. There will be 2 "floating" hours every day to accomodate to the class.*

> *For Part-time Bootcamps, every day one lesson will be covered and there are 3 floating hours per Saturday.*

FIRST | Learning objectives & Key Concepts

Learning Objectives will be described at the beggining of every lesson. They are important to identify the skill, proficiency and level of sophistication that's expected by the end. They set the purpose and enhance intrinsic motivation.

Key Concepts are a list of the main ideas represented in this lesson. You can identify them as bullet points linked to relevant documentation.

I DO | Demos

At Ironhack, we really believe active learning is the way to go. Typical "lectures" are often replaced with code-alongs, demonstrations and collaborative activities led by the Instructor.

WE DO | Activities

After a brief exposition to some key concepts, students will rapidly go hands-on and try it out. We embedd activities throughout the classes to diagnose student understanding of a new topic. These assess wheather the class is ready to move forward and learn the next concept.

YOU DO | Labs

Labs are 30min – 60 min exercises, that generally build up to a project by the end of the unit. They represent the first time the students are going to apply the learning by themselves or in pairs.

Labs are meant to be treated as formative assessments. The students develop skill by solving them and the team gains clarity on student progress.

A Typical Afternoon

Feedback, check-ins and sweat!

Carried out by TAs

At the end of the day - *at the end of Saturdays for Part-time courses* - the TAs are going to be available in **Open Office Hours.**

This is the time to ask for clarifications, make questions and share your doubts with the class. While individual inquiries are welcome, teachers will promote identifying what are typical issues and guidance for the whole group. In this way, we make sure we're ready to move forward!

Part 1 | Doubts and Feedback

The TAs are present in the classrom, one by one, students can share their blockers to solve daily labs.

– Study Groups: If we identify many students have the same question, the most effective strategy is to move all the subset of students to a breaokut room.

– Visible and Open: By listing the questions and making them accessible, the whole class benefit from the suggested solution // clarifi cation.

Part 2 | Show & Tell

Show and Tell is the preffered sustainable feedback strategy for this sessions. It consists in randomly picking one student to demo their work.

Part 3 | Exit Tickets

Exit Tickets is a short survey sent by the end of the day, the aim is to once again check on the students and adress blockers by the following day.

Exit Tikets are not mandatory, they might not be implemented consistently. Even if this is not a substitute for your weekly survey – that does appear in the student portal and is mandatory – use Exit Tikets when needed as yet another feedback channel.
We are really reading your commnets!

Part 4 | Code, eat, sleep, repeat.

After Open office hour, you can still keep growing your skills. It's expected that Ironhackers would spend extra 1-5 hours to wrap up the labs for the day.

DATA ANALYTICS

2020 | Version .03

Unit #1

Python SQL Excel

The aim of this unit is to set the fundamentals of Data Analysis: How to ask questions; how to interpret questions; how to read, clean, and explore data; what is Machine Learning and how can it help decision making; how to prepare the data for modeling and fit a linear model, how did I validate the model I built and why did I choose it over others (notions of "what does good look like"); what do the results mean; what is the business relevance of this analysis.

Case Study: Healthcare for all

Lab: Customer Analysis

Unit #2

Python SQL

The aim of this unit is to learn how to extract and analyze data stored in databases: recognizing two main different types of Databases, identifying the power of SQL, understanding how to query a structured database, manipulating categorical variables, identifying data anomalies and normalizing data, gathering data from various sources, applying window functions, interpreting Entity relations diagrams (ERD) and a brief intro to classification models.

Case Study: Banking

Lab: Movie Marketplace

Unit #3

Python SQL

The aim of this unit is to boost SQL skills to query complex databases: joining multiple tables, normalising databases and performing nested subqueries. We will also introduce multi-class classification and the problem of class imbalance.

This unit works as a continuation of the previous unit (2). The output is a classification model built using Python. The students will reinforce their understanding of the whole data process.

Case Study: Banking

Lab: Movie Marketplace

KEY:

- Study Weeks
- Project Weeks

ML Algorithms:

- Linear Regression
- Logistic Regression
- Unsupervised Learning (K-means)

Soft Skills:

- Bussines
- Project Management
- Analysis
- Presentation

DATA ANALYTICS

2020 | Version .03

Unit #4

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Python SQL Tableau

The aim of this unit is to expand their comprehension of the Data Analysis toolkit and supervised Machine learning. They are going to expand their data cleaning skills with RegEx, extract features from datasets and tune a KNN approach/methodology considering the bias-variance trade-off.

They will also get introduced to Business Intelligence's main concepts and tools.

Case Study: ⚕️ Healthcare for all

Lab: 🛍️ Customer Analysis

Unit #5

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Python SQL Tableau Presenting

The students will choose their challenge, from both algorithms we learned in the past 4 units. The project briefs are optimized for their portfolio.

For the PT format, unit 5 extends with one extra mini-project that is scheduled right after Unit 1. The aim of this mini project is to foster autonomy, project management skills, and problem-solving at an early stage in the program.

Classification: 🏠 Real Estate

Regression: 💸 Risk Analysis

Part-Time: ⚽ Fifa Players

Unit #6

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Python SQL Tableau Excel

The aim of this unit is to boost their Data Analysis skills and consolidate advanced use of the main tech Stack: mapping and understanding the business problem, using advanced functions and detailed expression in their code, optimizing their process using stored procedures in SQL, using excel macros to automate some spreadsheet operations, and finally creating dashboards to visualize results.

Case Study: 💰 Banking

Lab: 🎥 Movie Marketplace

KEY:

- Study Weeks
- Project Weeks

ML Algorithms:

- Linear Regression
- Logistic Regression
- Unsupervised Learning (K-means)

Soft Skills:

- 💼 Bussines
- 🔨 Project Management
- 📉 Analysis
- 🗣️ Presentation

DATA ANALYTICS

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Unit #7 🌟

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Python

The aim of this unit is to take students' understanding of the logic behind the engineering just one level higher! A lot of the effort in this unit is critical, deep, thinking. We'll be introducing ensemble methods (specifically tree-based algorithms) and deal with high-dimensional datasets. An important inclusion in the ML workflow, is hypothesis testing (including ANOVA).
In this unit, the class will find opoportinities for debate, critical thinking and deep reflection.

Case Study: ⚕ Healthcare for all

Lab: 🛍 Customer Analysis

Unit #8

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Python HTML Tableau Presenting

The aim of this unit is to polish their data analytics and engineering skills by performing an end-to-end data product: we will create a program that takes an input from the user and automatically collects data from the internet through web scraping and APIs; then it goes through a clustering model and finally returns an output back to the user.
They will implement agile methodologies to develop the product and finally they will "sell it" with an engaging presentation

Project: 🎵 Song Reccomender

Unit #9

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Python SQL Tableau Excel Presenting

This is the end of the Bootcamp and the beginning of your career in Data Analytics! Students will complete a full-circle Data Analysis project going through all the process and applying what we've studied in the course.

We'll provide them with datasets and ideas of projects to work with from the main hiring industries, or they can propose their own preference according to their goals.

KEY:

- Study Weeks
- Project Weeks

ML Algorithms:

- Linear Regression
- Logistic Regression
- Unsupervised Learning (K-means)

Soft Skills:

- 💼 Bussines
- 👞 Project Management
- 📉 Analysis
- 🗣 Presentation