



A STEAM project for Empathy, Resilience and Creativity

BIG DATA & ANALYTICS

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Summary

This seminar will cover the basics of Big Data and Analytics for processing and visualization purposes. Students will become familiar with the basic concepts around data collection and processing through various examples of recent advances in the field and learn about the relative fields. They will have the opportunity to gain hands on experience and become familiar with the SQL language. This seminar is perfect for students who are interested in pursuing careers in engineering, technology, or related fields.

Key elements

<i>Key elements</i>	<i>Big Data / Data Engineering / SQL / Visualisation / Plot / Data Processing</i>
Subject	<i>Big Data and Analytics</i>
Topic	
Age of students	12-17
Preparation time	10 hours
Teaching time	4-6 hours
Online teaching material	
Offline teaching material	
Resources used	

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Trends

Big Data Processing / Weather Data / Weather Analysis / Data Visualisation

21st century skills

Creativity, Critical thinking, collaboration and communication, Information and Communication Technologies literacy

Lesson Plan

Name of activity	Procedure	Time
Introduction to Data	Using the .pptx material guide your class through the basic concept about data definition and data utilization. Connect these concepts with familiar notions of everyday life (e.g. provide examples of everyday use of data for decision making).	30 mins
Examples of Big Data use	Explain the reasons that led to the introduction of big data and the needs that have emerged due to the ever-increasing generation of data. Provide several real-life examples of how big data are exploited in many fields.	30 mins
SQL Demonstration	Explain the basic programming skills that are required to process and visualize data using the most widely used programming language for data analysis, SQL. Introduction to basic instructions of SQL and how each one of them is used.	1 hour
SQL Examples	Hands on demonstration of data analysis examples using the provided data sets where the students have the opportunity to think, collaborate and solve the given challenges exploiting the previously acquired knowledge.	1 hour

Assessment

Here we include as an example the image of a rubric teachers can use to assess their students:

Students' and teachers' feedback after the implementation of the Learning Scenario during the Pilot phase of the project

Student feedback

Teacher's remarks

About STEAM EmbRaCe project

This Learning Scenario has been created in the framework of the STEAM EmbRaCe project.

Annex 1

Annex 2