ASSIGNMENT 2 FRONT SHEET

Qualification	**BTEC Level 5 HND Diploma in Computing**
Unit number and title	Unit 14: Business Intelligence

Submission date	Friday, December 23, 2022	**Date Received 1st submission**	Friday, December 23, 2022
Re-submission Date		**Date Received 2nd submission**	
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Student declaration

I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.

Student's signature	*Duny*

Grading grid

P3	P4	P5	P6	M3	M4	D3	D4

✿ **Summative Feedback:**　　　　　　　　　✿ **Resubmission Feedback:**

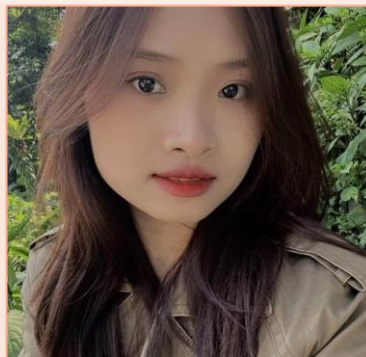| Grade:	Assessor Signature:	Date:
IV Signature:		

Our team

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Thuy Duong

Luu T.Minh

Nguyen Đ.Hung

# Bussiness Inteligence

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01

BI

Define, example, BI techniques, BI tools

What is BI?

Utilizing software and services, business intelligence (BI) transforms data into insightful knowledge that affects a company's strategic and tactical business decisions. BI tools retrieve and analyze data sets in order to provide users with insights into the condition of the business. Analysis results are then shown as reports, summaries, dashboards, graphs, charts, and maps.
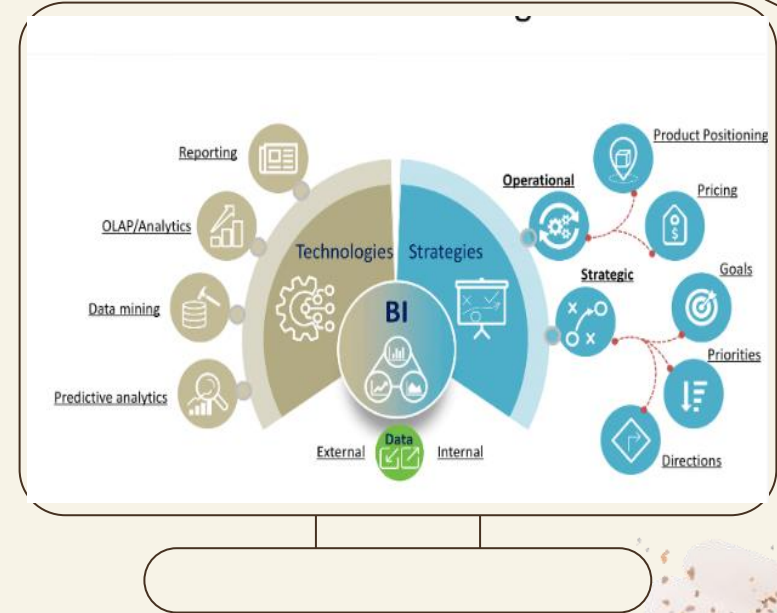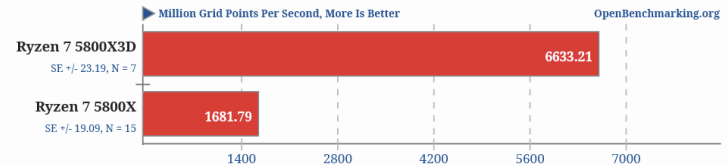
Real examples of how to apply BI on business

Reddit eliminates a data bottleneck:

Reddit is a social media website with a focus on aggregating news and community discussion. It currently ranks seventh in Alexa's list of Top Sites in the United States, and its ability to monetize that traffic relies on their business intelligence.
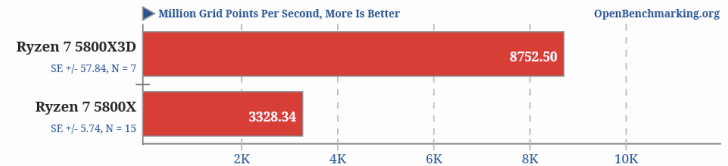

ASKAP 1.0
Test: tConvolve OpenMP - Gridding

ptsh

▶ Million Grid Points Per Second, More Is Better

OpenBenchmarking.org

Ryzen 7 5800X3D
SE +/- 23.19, N = 7 — 6633.21

Ryzen 7 5800X
SE +/- 19.09, N = 15 — 1681.79

1400   2800   4200   5600   7000

1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

ASKAP 1.0
Test: tConvolve OpenMP - Degridding

ptsh

▶ Million Grid Points Per Second, More Is Better

OpenBenchmarking.org

Ryzen 7 5800X3D
SE +/- 57.84, N = 7 — 8752.50

Ryzen 7 5800X
SE +/- 5.74, N = 15 — 3328.34

2K   4K   6K   8K   10K

1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

BI techniques:

1

Collection techniques

Cleansing, labeling...

2

Analysis techniques

Report, queries, dashboards..

3

Analysic techniques
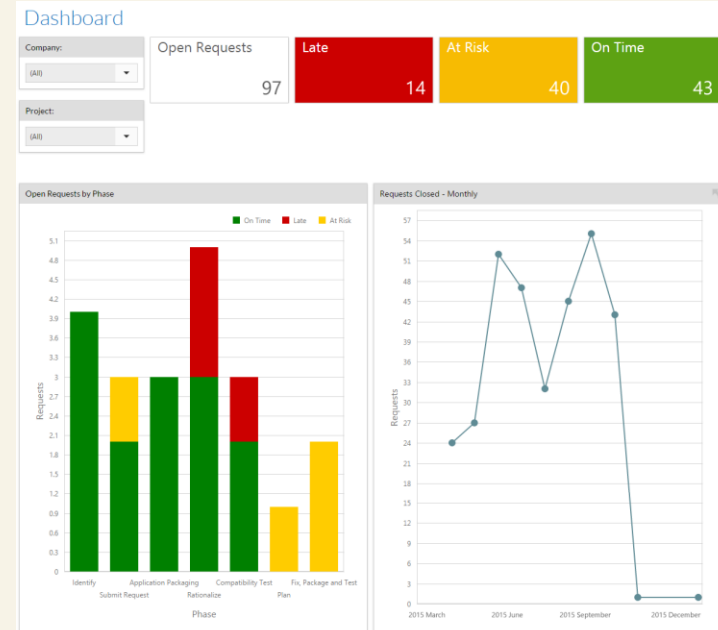
Regression, machine learning

Collection techniques

- **Cleansing:** Cleaning involves identifying and removing false data from a data set.

- **Labeling:** The act of associating information with different data points is known as data labeling, sometimes known as data tagging, and it helps machine learning (ML) computers better grasp the meaning of the data.

Analysis Techniques

- **Report:** Data is pulled and read from on-site and cloud-based data sources at your firm via BI reporting tools.

- **Queries:** In databases that employ SQL, the query analysis process is used to figure out how to better optimize queries for performance.

- **Dashboard:** Dashboards are reporting tools for business intelligence (BI) that compile and show important data and key performance indicators (KPIs) on a single screen, allowing users to monitor and assess company performance quickly.

Analytic techniques

- **Regression:** A type of predictive modeling technique called regression analysis looks at the connection between an independent variable (or variables) and a dependent (objective) variable.

- **Machine learning:** Machine learning is a subset of AI with the specific goal of learning as much as possible from information (data) without explicit programming.

BI tools

Programming tools (Python)

Venus is the second planet from the Sun

Data visualization tools

Jupiter is the biggest planet of them all

What is Programming tool?

- An interpreted, object-oriented, high-level programming language with dynamic semantics
  - Easy to learn syntax emphasizes readability

Benefits of Python

1. Easy to read, learn and code

Venus has a beautiful name and is the second planet from the Sun

2. Dynamic Typing

It's the closest planet to the Sun and the smallest one in our Solar System

3. Free, Open Source

It's full of iron oxide dust, which gives the planet its reddish cast

4. Extensive Third-Party Libraries

Jupiter is a gas giant and the biggest planet in the Solar System

Data visualization tool?

As the market-leading choice for modern business intelligence, the Tableau platform is known for taking any kind of data from almost any system, and turning it into actionable insights with speed and ease. It's as simple as dragging and dropping.

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Benefits of Tableau

1. Data visualization

2. Quickly create interactive visualization

3. Easy to implementation

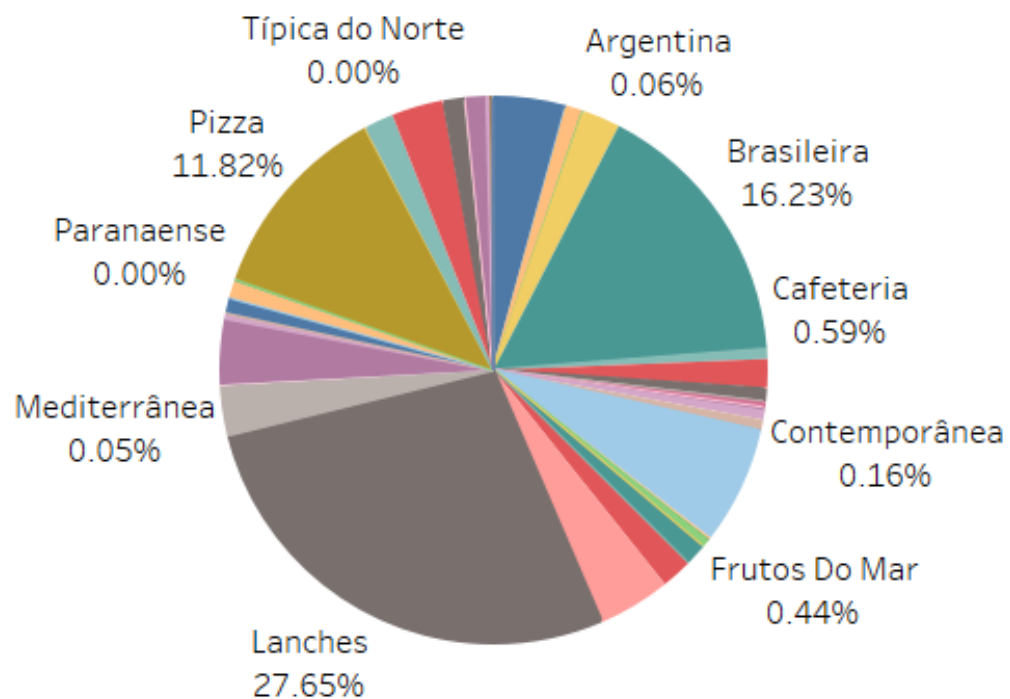4. Tableau can handle large amounts of data

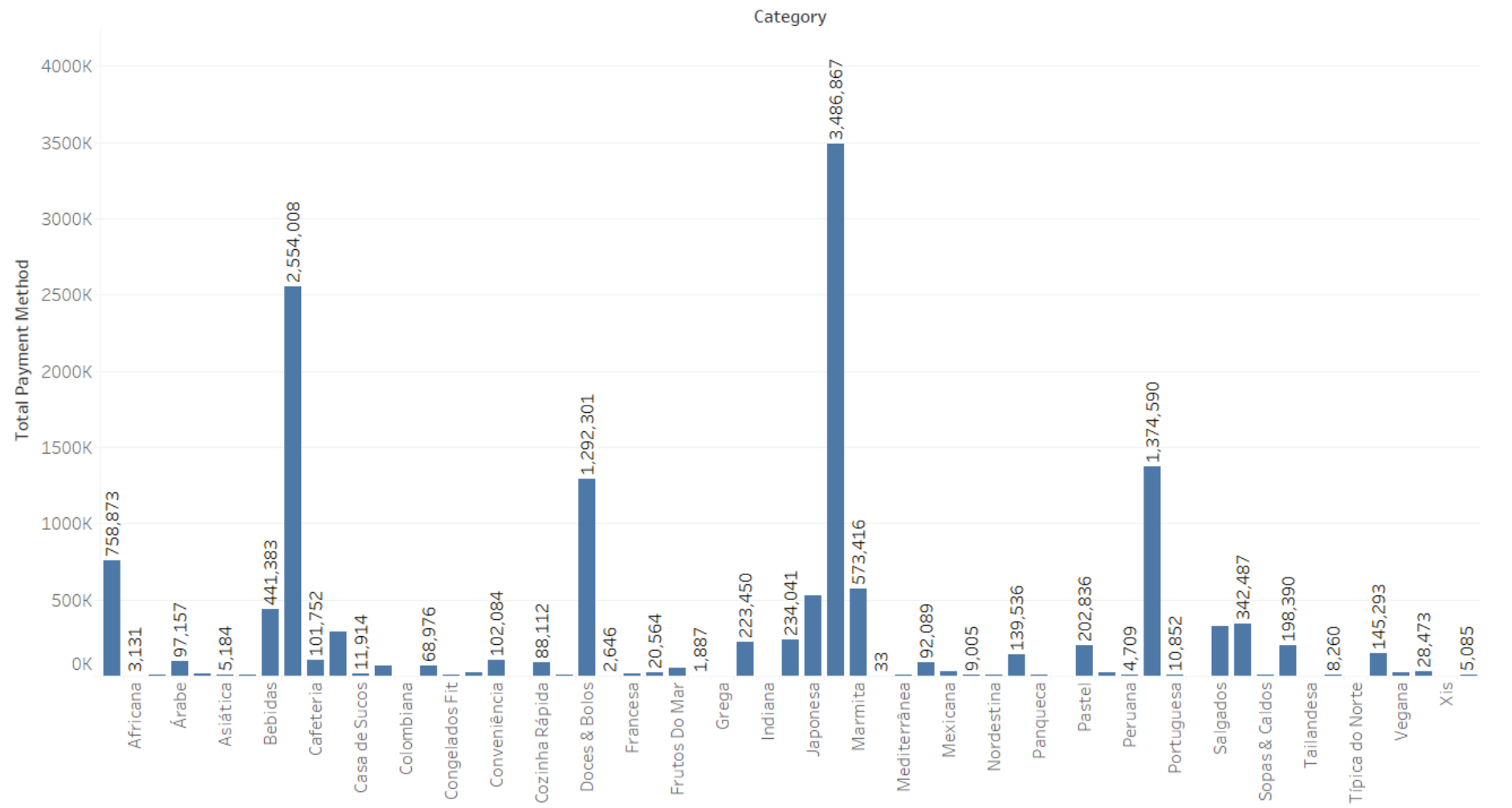# 02 Demonstration about BI

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Category and Total Tag

Pie chart showing category distribution:
- Típica do Norte: 0.00%
- Argentina: 0.06%
- Brasileira: 16.23%
- Cafeteria: 0.59%
- Contemporânea: 0.16%
- Frutos Do Mar: 0.44%
- Lanches: 27.65%
- Mediterrânea: 0.05%
- Paranaense: 0.00%
- Pizza: 11.82%

Category and Total Payment Method

Category and Price Range

Category

Bar chart showing Price Range by Category:

- Africana: 25,049
- (unlabeled): 118
- Árabe: 5,943
- Asiática: 380
- Bebidas: 20,743
- (unlabeled): 107,124
- Cafeteria: 16,101
- Casa de Sucos: 4,013
- Colombiana: 2,657
- Congelados Fit: 1,658
- Conveniência: 3,602
- Cozinha Rápida: 49,099
- Doces & Bolos: 131
- Francesa: 1,031
- Frutos Do Mar: 85
- Grega: 9,038
- Indiana: 13,508
- Japonesa: 35,583
- Marmita: 140,577
- (unlabeled): 18,549
- Mediterrânea: 514
- Mexicana: 2,124
- Nordestina: 5,976
- Panqueca: 7,839
- Pastel: 317
- Peruana: 75,190
- Portuguesa: 803
- Salgados: 13,006
- Sopas & Caldos: 8,860
- Tailandesa: 302
- Típica do Norte: 7,340
- Vegana: 1,426
- Xis: 206

Category and Rating

Category and DFee

Típica do Norte 0.01%

Argentina 0.08%

Brasileira 17.74%

Peruana 0.05%

Mediterrânea 0.07%

Contemporânea 0.18%

Lanches 22.82%

Japonesa 3.40%

Frutos Do Mar 0.42%
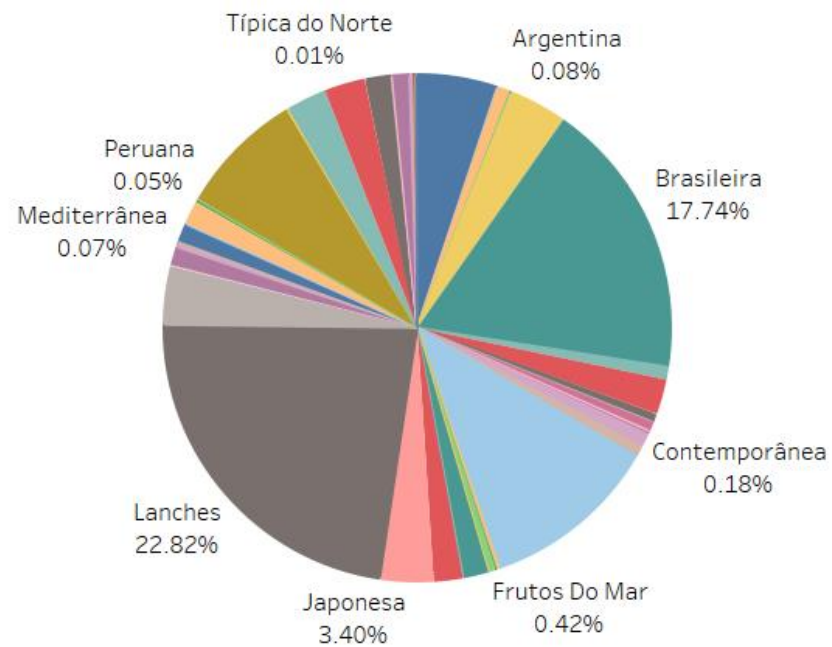
Category

Category	
Gaúcha	[Gaúcha](#)
Grega	[Grega](#)
Hambúrguer	[Hambúrguer](#)
Indiana	[Indiana](#)
Italiana	[Italiana](#)
Japonesa	[Japonesa](#)
Lanches	[Lanches](#)
Marmita	[Marmita](#)
Marroquina	[Marroquina](#)
Mediterrânea	[Mediterrânea](#)
Mercado	[Mercado](#)
Mexicana	[Mexicana](#)
Mineira	[Mineira](#)
Nordestina	[Nordestina](#)
Padaria	[Padaria](#)
Panqueca	[Panqueca](#)
Paranaense	[Paranaense](#)
Pastel	[Pastel](#)
Peixes	[Peixes](#)
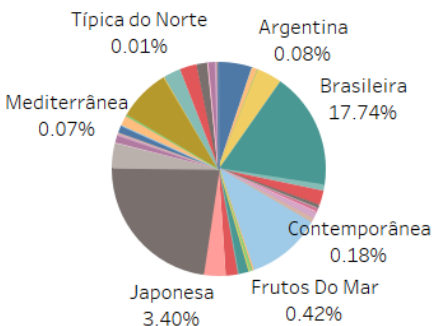
Category and Price Range

Category and DFee
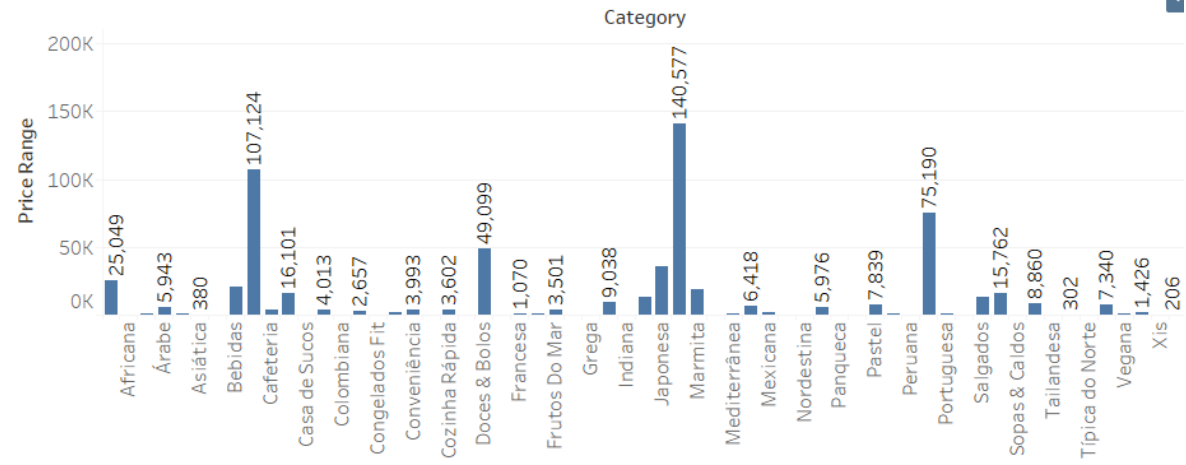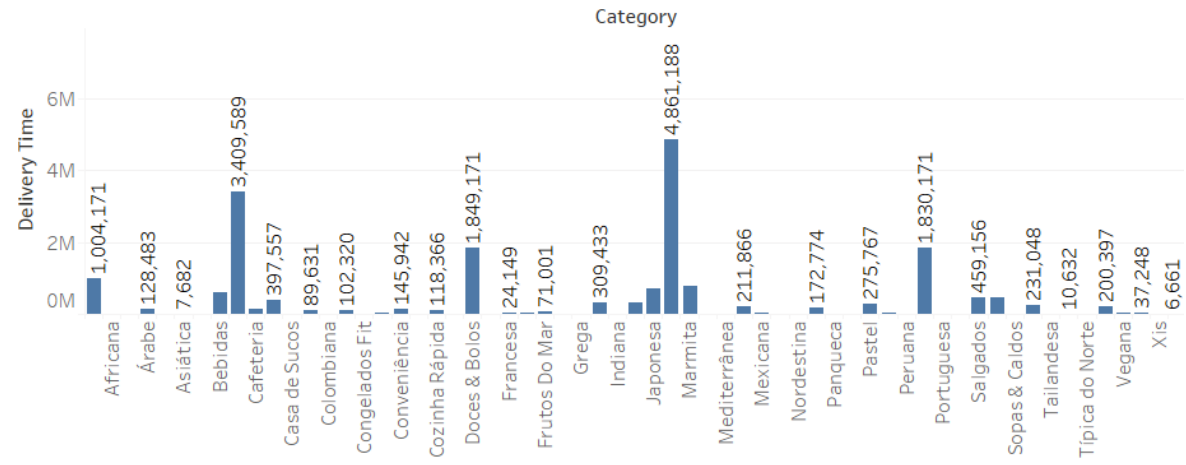
Category and DTime

03 Point of View

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How business intelligence tools can contribute to effective decision-making-

BI tools use OLAP (Online Analytical Processing) to help businesses perform data analysis, monitor KPIs, and generate all kinds of reports. As a result, companies can identify business trends (both negative and positive), communicate findings to their stakeholders, and gain actionable insights to make informed decisions.

How business intelligence tools can contribute to effective decision-making-

Benefits of BI tools include:

- Quick reports and analysis
- Actionable business insights
- Increase customer and stakeholder satisfaction
- Market trends past, present and future
- competitive analysis
- Increase operational efficiency
- Sales increase
- Better, more informed decisions

Example on our restaurant

01 For the marketing department, BI tools really help and promote its effects. It helps them analyze the results of their campaigns and advertising output. And it helps them adjust their spending for better returns.

02 For sales, business intelligence helps find the best path and best practices, customer acquisition costs and time, process improvement, and annual sales and revenue analysis.

03 Business intelligence helps HR departments track and manage things like employee turnover, attrition rates, hiring processes, and more.

04 Besides, every other department in the company will benefit directly or indirectly from business intelligence.

Evaluate how they can use BI tools for extend their target audience and make them more competitive within the market.

1. Increase productivity

2. High quanlity data

3. Quick report

4. Operational efficiency

5. Identify market trends

6. Profit margin

7. Competitor analysis

a

Thank you for listening!