

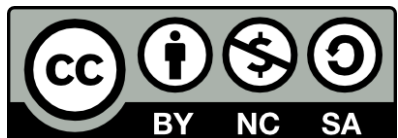
# D1INT – Introdução à Ciência de Dados

2021.1

## Aula 01 Introdução



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# Aula de Hoje

- Pensamento Analítico de Dados (Data-Analytic Thinking)
- Exemplo: Mall Costumer Segmentation Data
- Data Science X Data Mining
- Exemplo: Furacão Frances - 2004

# Data-Analytic Thinking

- Identificar e definir problemas, extrair informações dos dados e desenvolver soluções;
- Grandes investimentos, nos últimos 15 anos, em infraestrutura de negócios para melhorar a capacidade de coletar dados;
- Ampla disponibilidade de dados levou a um interesse crescente em métodos para extrair informações úteis e conhecimento dos dados;
- As empresas em quase todos os setores estão focadas na exploração de dados para obter vantagem competitiva;



# Data-Analytic Thinking

- Antigamente equipes de estatísticos e analistas faziam a exploração manualmente;
- Computadores mais poderosos, a difusão e o desenvolvimento de algoritmos possibilitaram análises mais amplas e profundas;
- Isso deu origem a aplicação comercial dos princípios de ciência de dados e técnicas de aprendizado de máquina;
- Melhorar o pensamento analítico de dados, desenvolve intuição sobre como e onde aplicar a criatividade e o conhecimento do domínio;



# Data-Analytic Thinking

- Algumas aplicações mais amplas das técnicas de mineração de dados.



Marketing direcionado  
(Target marketing)



Publicidade online  
(Online advertising)

# Data-Analytic Thinking

- Algumas aplicações mais amplas das técnicas de mineração de dados.

## Frequentemente comprados juntos



Preço total: R\$2.725,26

Adicionar os três ao carrinho

 Estes itens são enviados e vendidos por vendedores diferentes. [Ver detalhes](#)

- ✓ **Este item:** Câmera Digital EOS Rebel T100 18-55mm f/3.5-5.6 IS III BR, Canon, Preto R\$2.399,00
- ✓ Cartão de Memória SanDisk Micro SD, 64Gb R\$69,00
- ✓ Porta Camera Média preta DCB304, Case Logic, Acessórios para Câmeras Digitais, Preta R\$257,26

Venda cruzada  
(Cross-selling)



Análise de Crédito  
(Credit Score)



# Data-Analytic Thinking

- Algumas aplicações mais amplas das técnicas de mineração de dados.



Detecção de Fraude  
(Fraud Detection)



Vendas de Varejistas –  
Imagens de Satélites  
(Retailers' Sales)

# Exemplo – Mall Customer Segmentation Data

- Conjunto de dados criado apenas para fins de aprendizado dos conceitos de segmentação de clientes (análise de cesta de compras).
- São 200 observações no total;
- Suponha que tenhamos que analisar a base de dados separando os clientes em grupos com características semelhantes para entender melhor esses grupos;





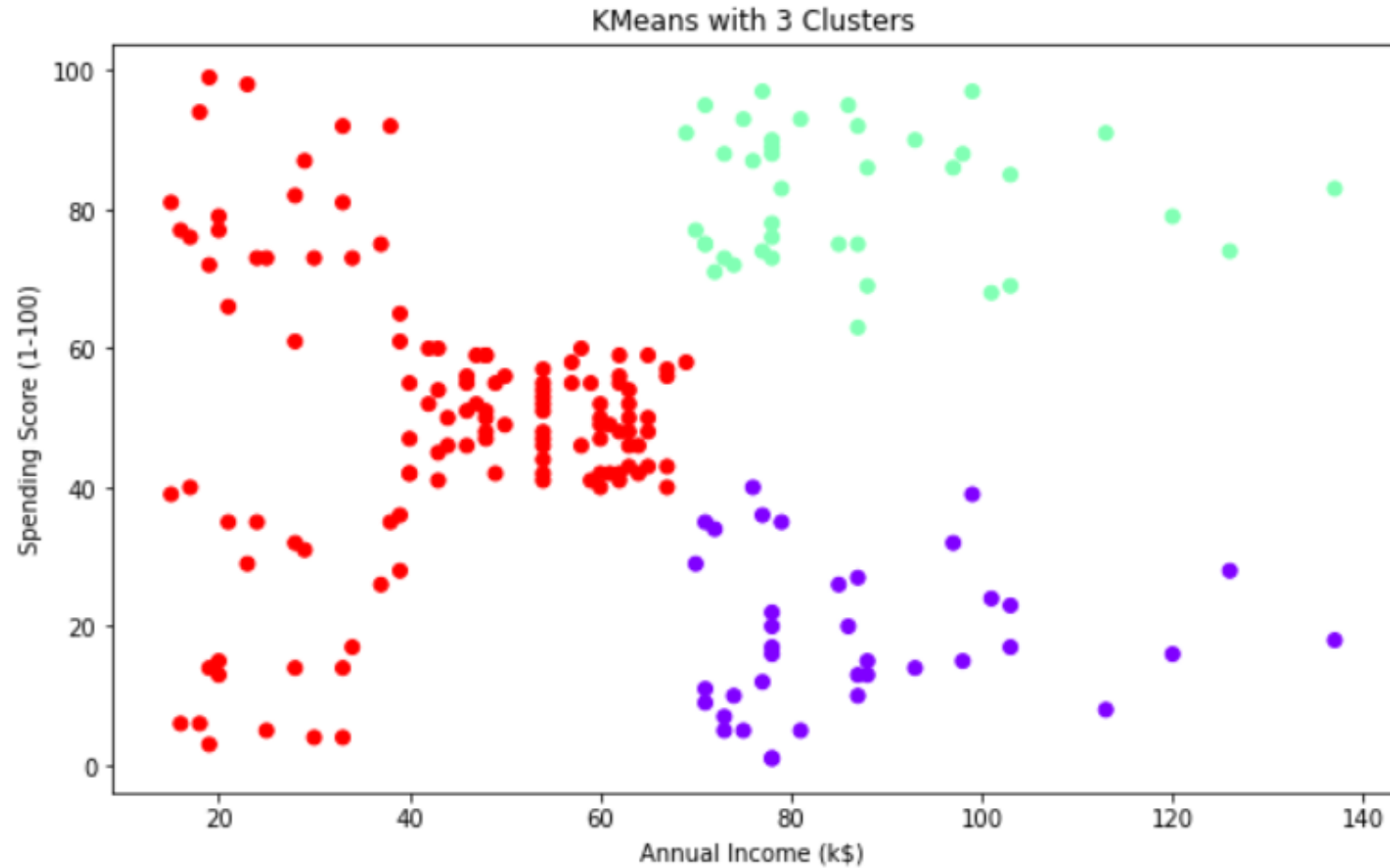
# Exemplo – Mall Customer Segmentation Data

	CustomerID	Gender	Age	Annual Income (k\$)	Spending Score (1-100)
0	1	Male	19	15	39
1	2	Male	21	15	81
2	3	Female	20	16	6
3	4	Female	23	16	77
4	5	Female	31	17	40
...	...	...	...	...	...
195	196	Female	35	120	79
196	197	Female	45	126	28
197	198	Male	32	126	74
198	199	Male	32	137	18
199	200	Male	30	137	83

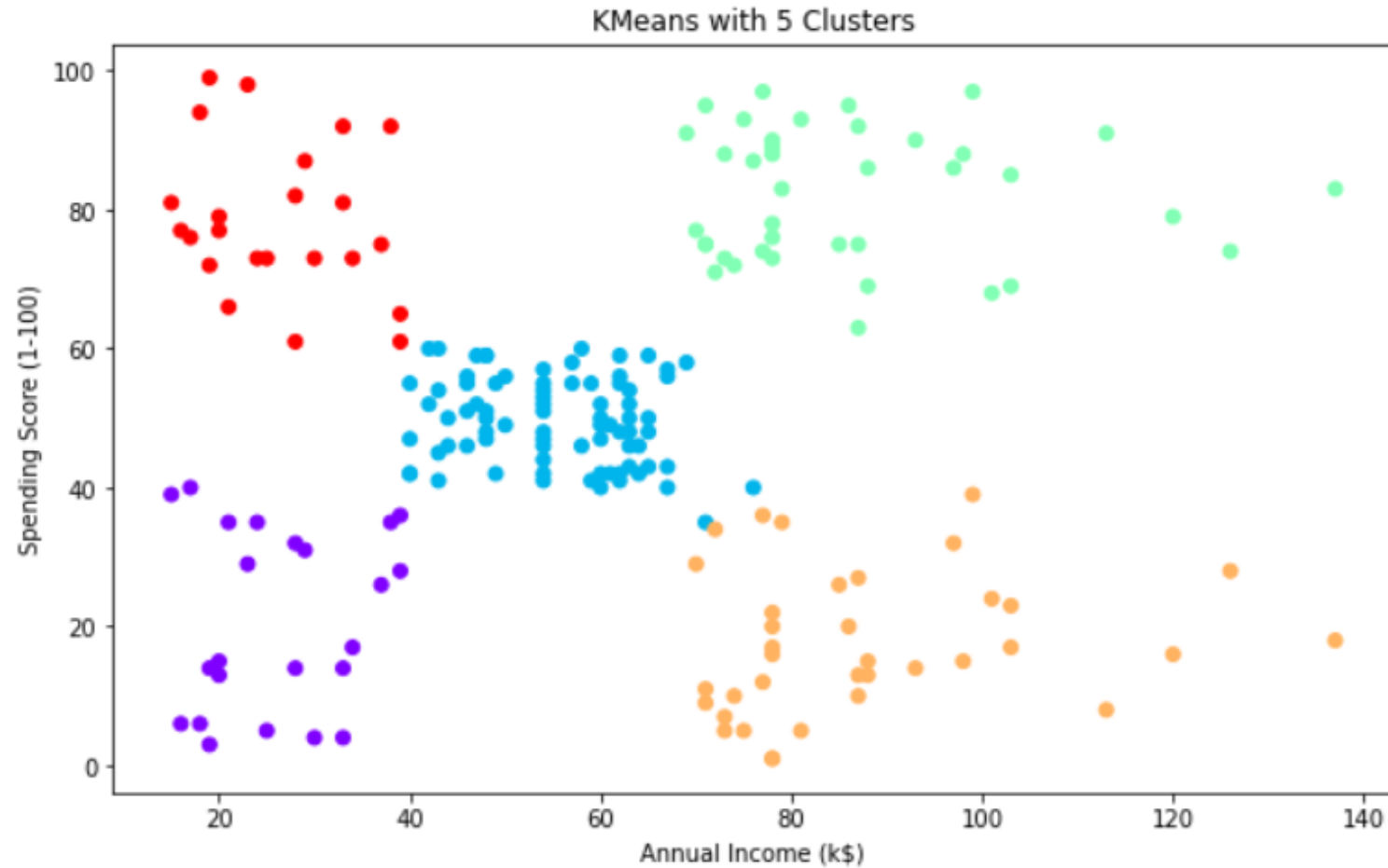
200 rows × 5 columns



# Exemplo – Mall Customer Segmentation Data



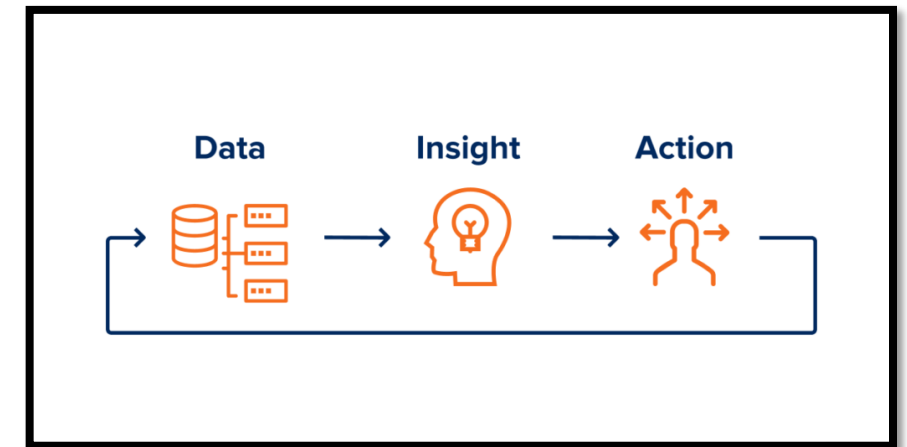
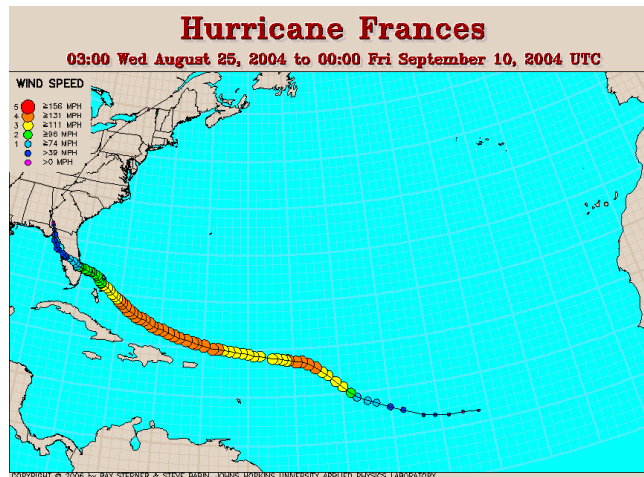
# Exemplo – Mall Customer Segmentation Data



# Furacão Frances - 2004

Hurricane Frances was on its way, barreling across the Caribbean, threatening a direct hit on Florida's Atlantic coast. Residents made for higher ground, but far away, in Bentonville, Ark., executives at Wal-Mart Stores decided that the situation offered a great opportunity for one of their newest data-driven weapons ... predictive technology.

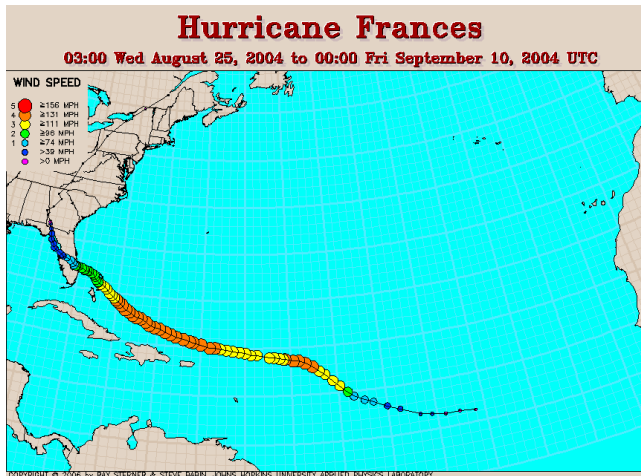
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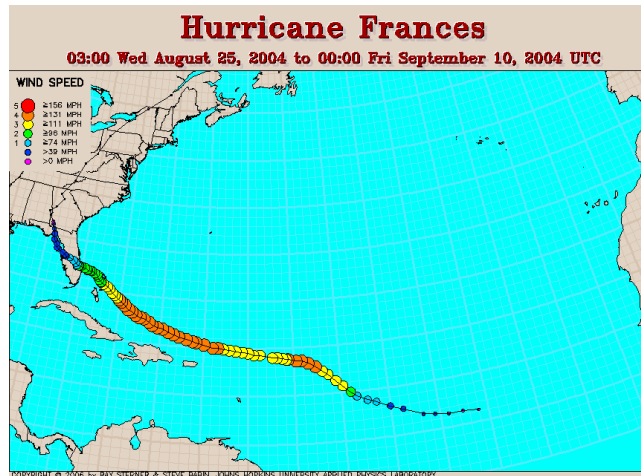
Por que a predição baseada em dados poderia ser útil neste cenário?



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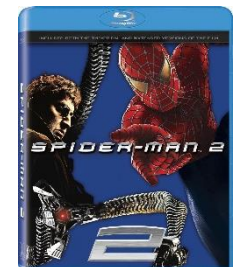
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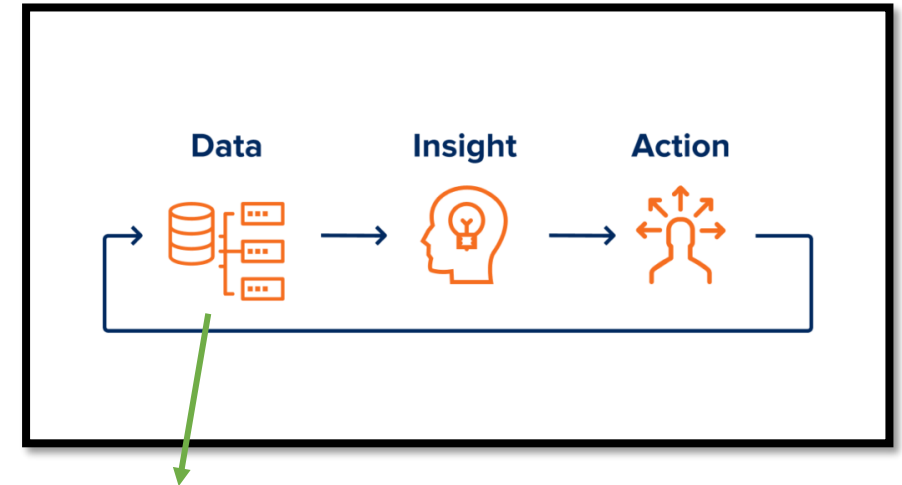
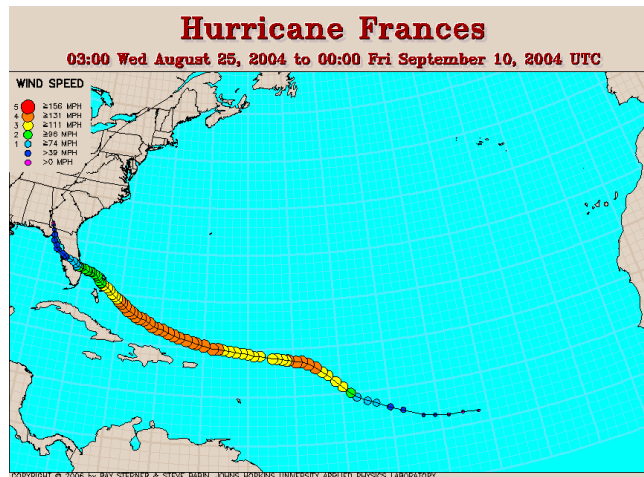




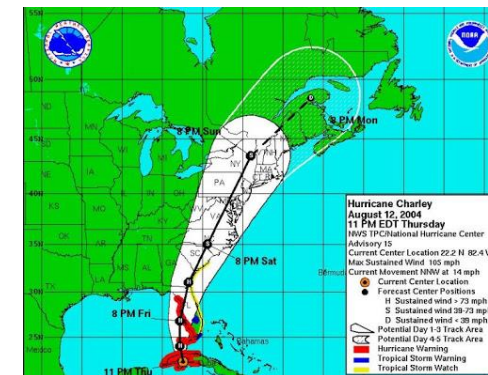
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## Furacão Charley - Agosto

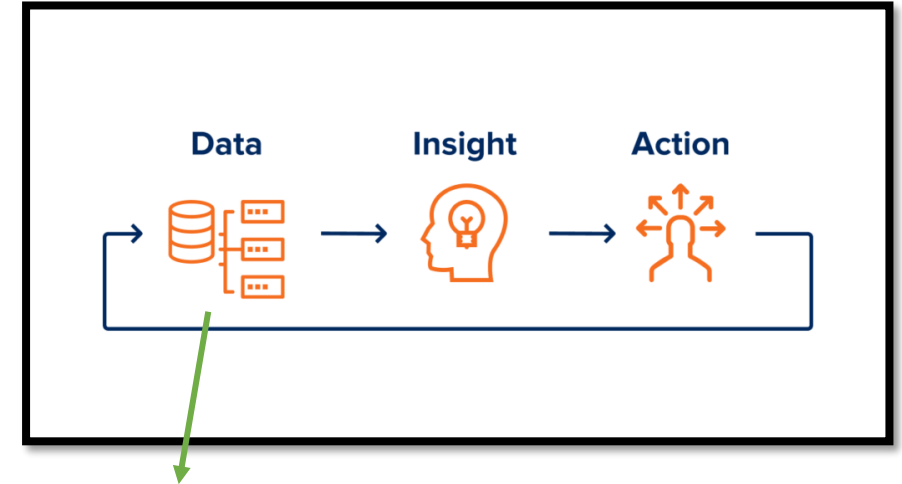
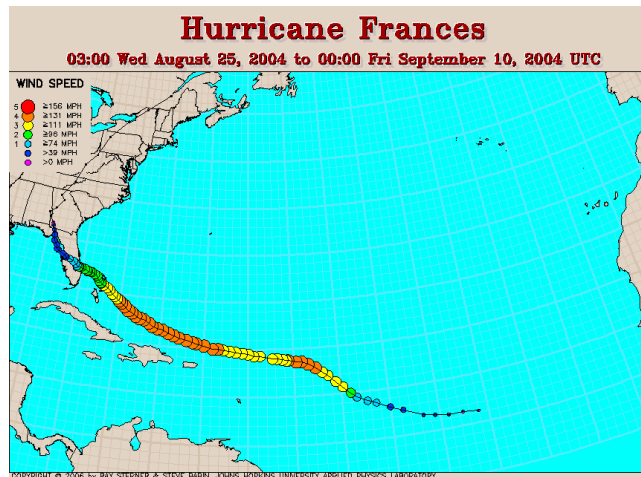


Antecipar a demanda incomum por produtos e enviar estoque para as lojas antes da chegada do furacão.

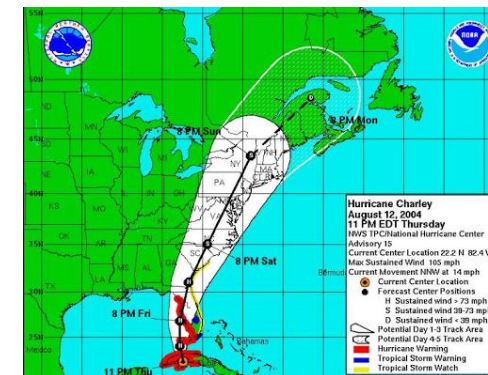
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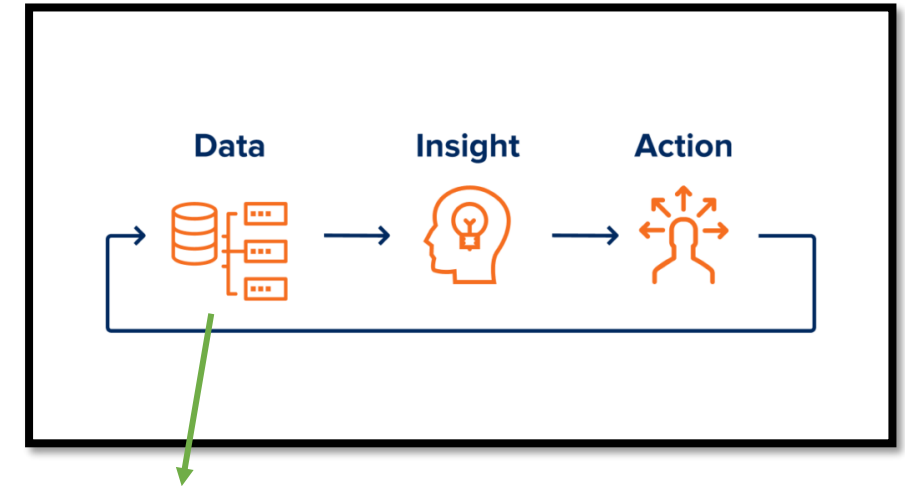
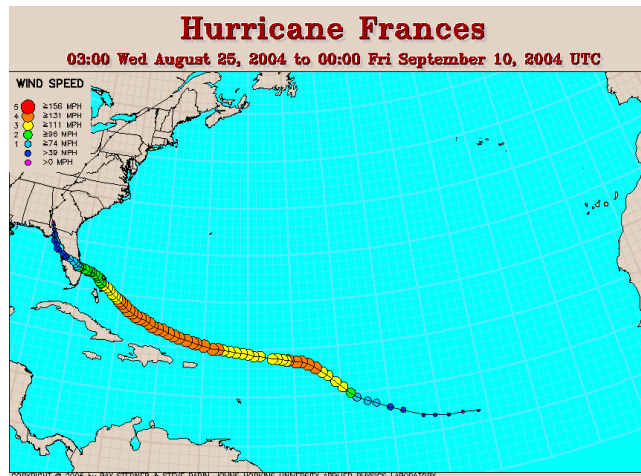


Quais são os produtos mais vendidos antes da chegada de um furacão?

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## Furacão Charley - Agosto



# Dúvidas?



# Bibliografia Básica

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