Department of Statistics Malaysia
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NEWSLETTER

statsmalaysia
DOSM/BMP/4.2018/Series 19

STATSBDA BIG DATA ANALYTICS

BIG DATA with next 4V`s

Value
Data science continues to provide ever-increasing value for users as more data becomes available and new techniques are developed.

Variability
Data science often models variable data sources. Models deployed into production can encounter especially wild data.

Visualisation
Often the *only* way customers interact with models.

Veracity
Reproducibility is essential for accurate analysis.

2012

In 2001, Gartner (perhaps) accidentally abetted an avalanche of alliteration with an article that forecast trends in the industry, gathering them under the headings Data **Volume**, Data **Velocity**, and Data **Variety**.

2013

The inflation continues its inexorable march, and about a decade later we had **the 3 V`s of Big Data** and then **4 V`s**

STRUCTURED DATA

Characteristics:
Pre-defined data model
High organize
Easy to access

Resides In:
Relational databases
Data warehouses

Examples:
Dates
Phone numbers
Social security numbers
ZIP codes
Customer names
Addresses
Product names and numbers
Transaction information

Typical application:
Airline reservation systems
Inventory control
CRM systems
ERP systems

Generated by:
Human or machines

UNSTRUCTURED DATA

Characteristics:
No Pre-defined data model
Text, image, sound, video or other format
Difficult to access

Resides In:
Application
Data warehouses
Data lake

Generated by:
Human or machines

Typical application:
Word processing
Presentation software
Tool for editing media

Examples:
Text files
Report
Email massages
Audio files
Video files
Images
Surveillance imagery

SOURCE: https://www.kdnuggets.com/2017/04/42-vs-big-data-data-science.html

#isiwsc2019 || #MyStatsDay || #mycensus2020

62nd ISI World Statistics Congress ISI 2019 Kuala Lumpur

BANCI Penduduk & Perumahan Malaysia 2020 • Data Anda Masa Depan Kita •

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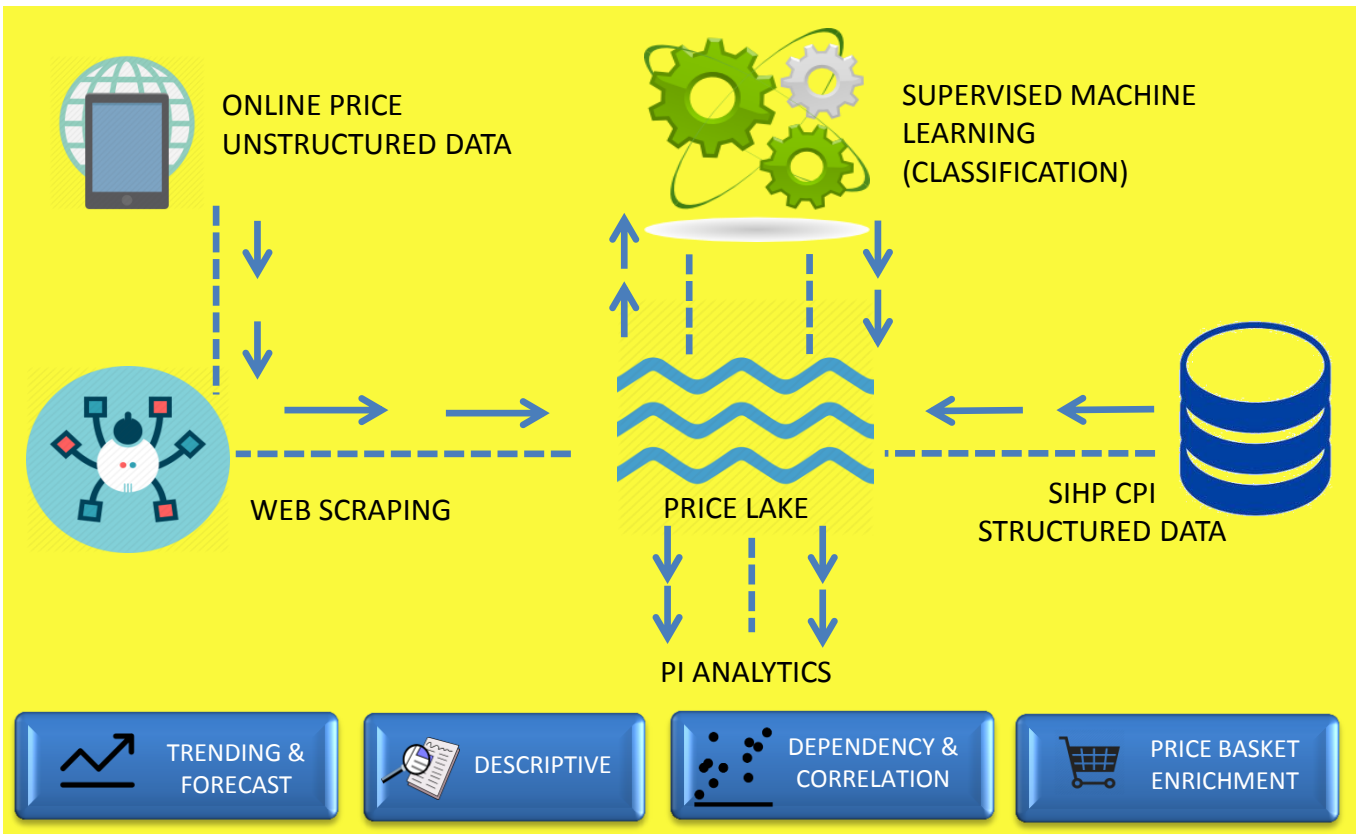
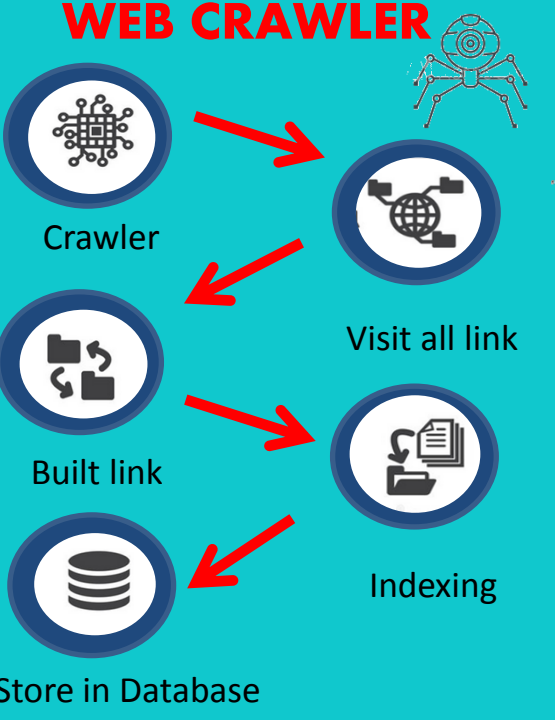


WEB CRAWLER



Web Crawler (also known as a web spider or web robot) is a program or automated script which browses the World Wide Web in a methodical, automated manner. This process is called **Web crawling** or spidering. Many legitimate sites, in particular search engines,use spidering as a means of providing up-to-date data

STATSBDA MODULE

PRICE INTELLIGENCE (PI)

VALUE CREATION

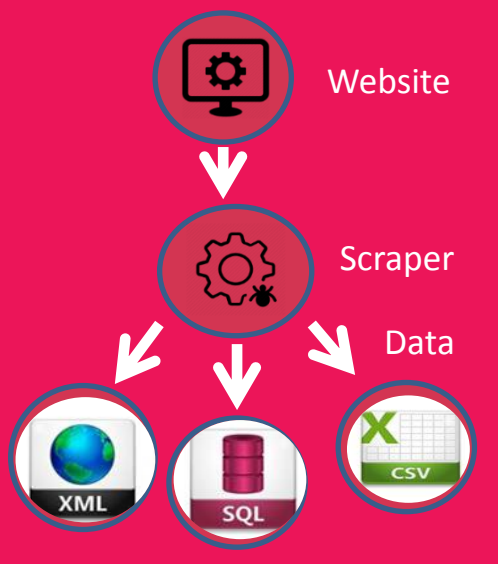
New Data Collection Methodology
New data collection process introduced to cover price of goods sold online

Transform of Business Process
New data collected enable to create holistic landscape of CPI monitoring process

Holistic View of Online & Offline Price
Allow monitoring & forecast future price trend & as valueable input for price control decisions by government

PI's main goal is to create a price list of different goods and provide the solution for consumers on the best prices available. Via **web scraping**, PI extracts the product prices from the internet through a method called **web crawling**. The prices will then be arranged into **structured data** and classified into categories. The consumer can then see for themselves a list of prices from hundreds of sellers and sort out the best prices for them through what we call Price Basket Enrichment, where as the prices are made public.

WEB SCRAPING



Web scraping is a simple method used to **scrap** a **website**. It is the act of extracting data **online** from multiple websites. The process is done by a robot or a program by extracting content from the display output of other programs or **web** pages. Such programs are simply known as a **website scraper**.

SOURCE : https://www.quora.com/What-are-the-biggest-differences-between-web-crawling-and-web-scraping