

Lecture 01: Introduction to Data Science and Programming

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Your Course Teacher

- Professor Dr. Swakkhar Shatabda
- Counselling Time
 - Sun/Wed 8:30 AM - 11:10 AM
- Expertise
 - Machine Learning
 - Optimization
 - Computational Biology
- Courses that I take:
 - Artificial Intelligence
 - Machine Learning
 - Reinforcement Learning
 - Deep Learning



Can you prevent egg theft?



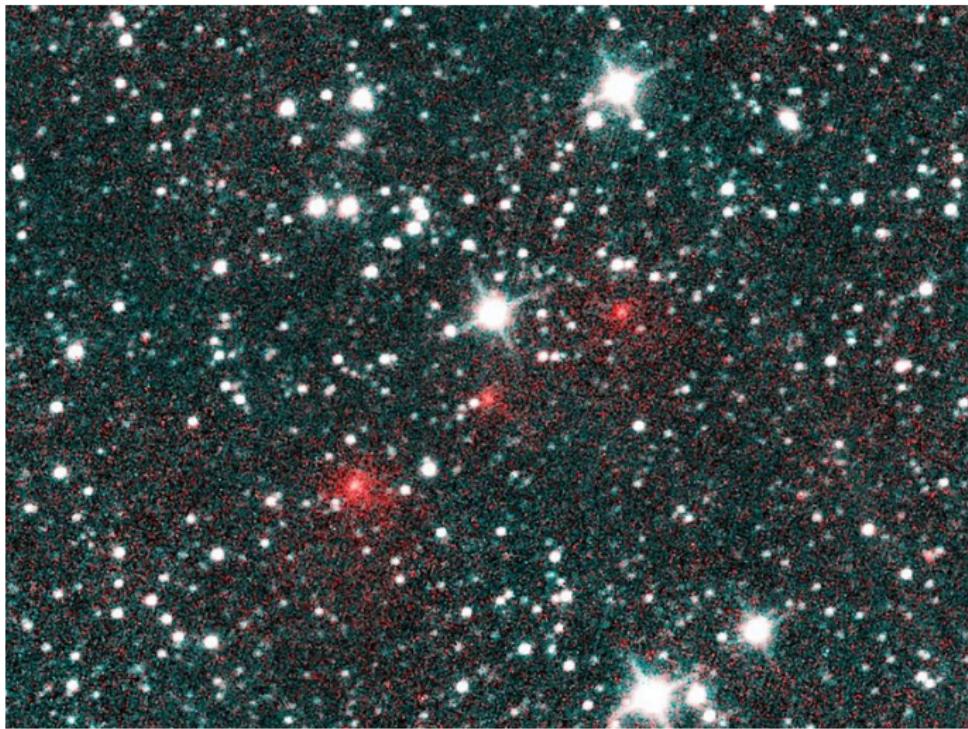
Can you save flood affected people?



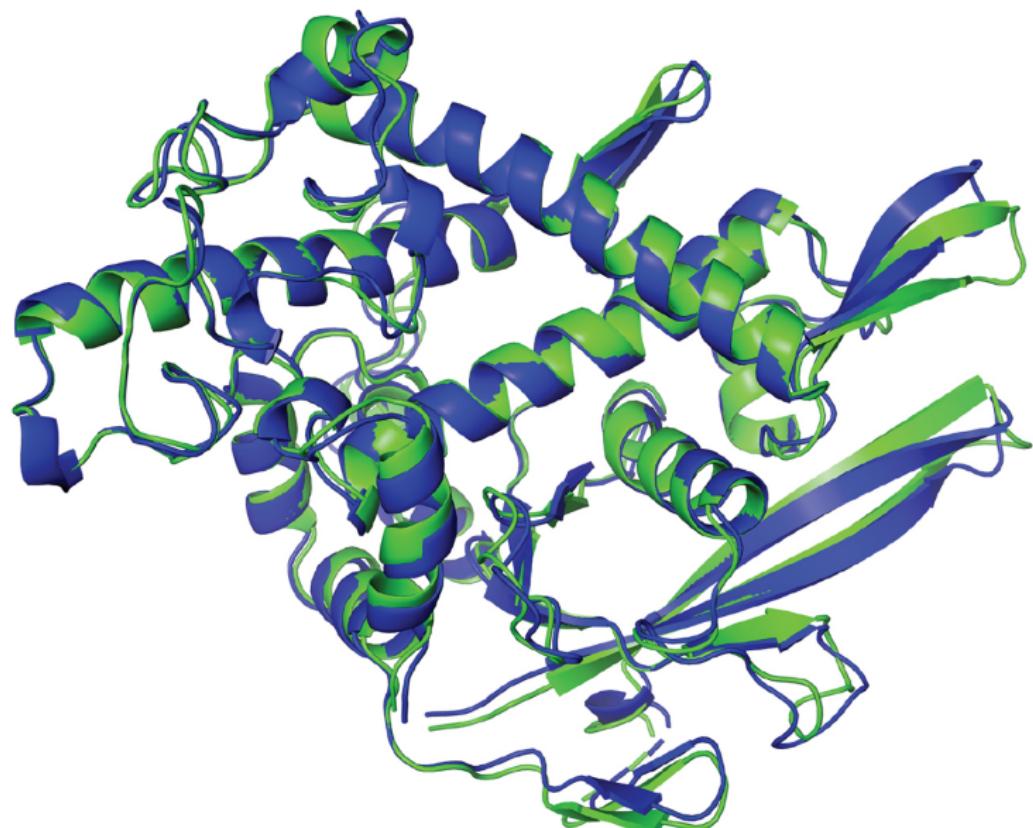
<https://youtu.be/ZaYw0iizLRs>



Astronomy - Can you detect new constellations?



Medicine - can you find drugs or structures?



What is Data Science?

Definition

Data science is an **interdisciplinary** academic field that uses **statistics**, **scientific computing**, **scientific methods**, **processes**, **algorithms** and **systems** to **extract or extrapolate** **knowledge and insights** from **noisy**, **structured**, and **unstructured** data.

- A new paradigm - 'data driven' science.
- A **data scientist** is a professional who creates **programming** code and combines it with **statistical** knowledge to create **insights from data**.



Why do we need programming?

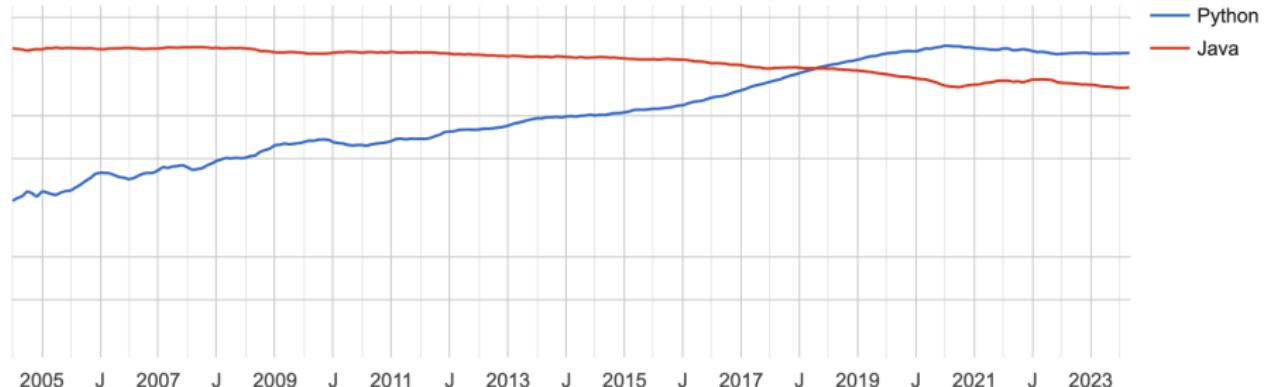
An innovation!

Think of a startup company!
There are multiple users looking for different types of foods. You have list of items and their prices from each food vendor and also a list of items sought by the users. You have to search and match the best options for the users.



Why python?

PYPL PopularitY of Programming Language



<https://www.tiobe.com/tiobe-index/>

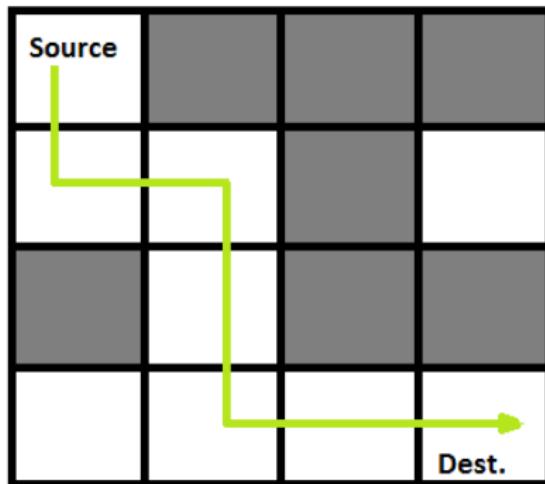


What is a program?

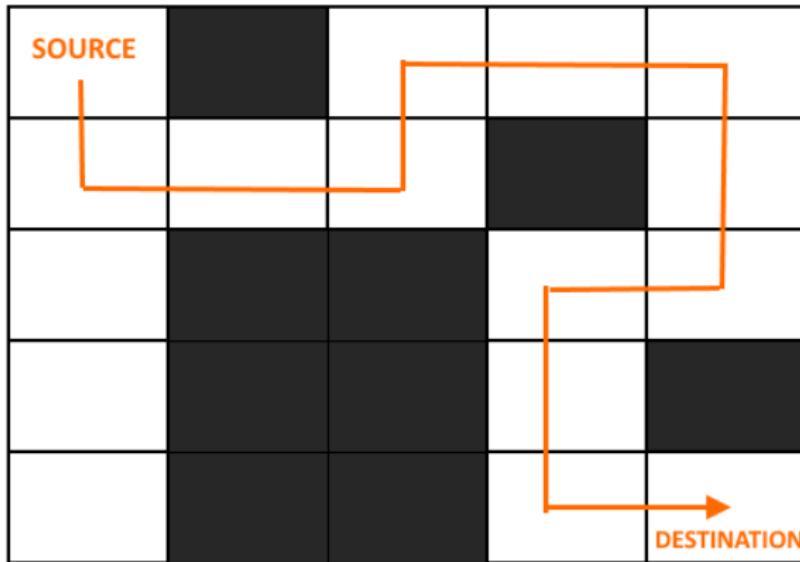
Computer Program

A computer program is a sequence or **set of instructions** in a programming language for a computer to execute.

- Think of a recipe.
- Think of a list or sequence of works to do.



How to write a program?



How to write a program?

- ➊ Create a Code.org account.
You can do this at
https://studio.code.org/users/sign_up.
- ➋ Sign in to your Code.org account.
- ➌ Navigate to <https://studio.code.org/join> and type in section code:
ZGZFVL.
- ➍ Press the "Go" button.
- ➎ Start solving and get the certificate!

