MODULE: EL (AI)

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WHAT IS A.I.?

Overview:

- **Section 1: Introduction to Artificial Intelligence (AI)**

- **Section 2: AI Project Cycle**

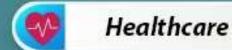- **Section3: AI in Medicine**

- **Section4: GPT in Medicine**

History of AI

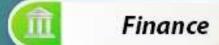Artificial Intelligence (AI) is the ability for a computer to think and learn.

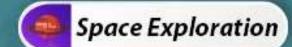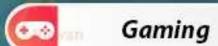**Social Media:** Twitter, Facebook, Instagram, and Snapchat

DIAGNOSIS OF DISEASES

OUTBREAK PREDICTION

MEDICAL IMAGE DIAGNOSIS

APPLICATIONS OF AI IN HEALTHCARE

CLINICAL TRIALS

DRUG DISCOVERY

Electronic Health Records

PERSONALISED MEDICINE

MEDICAL ROBOTS

AI in our daily life

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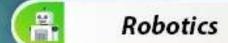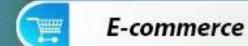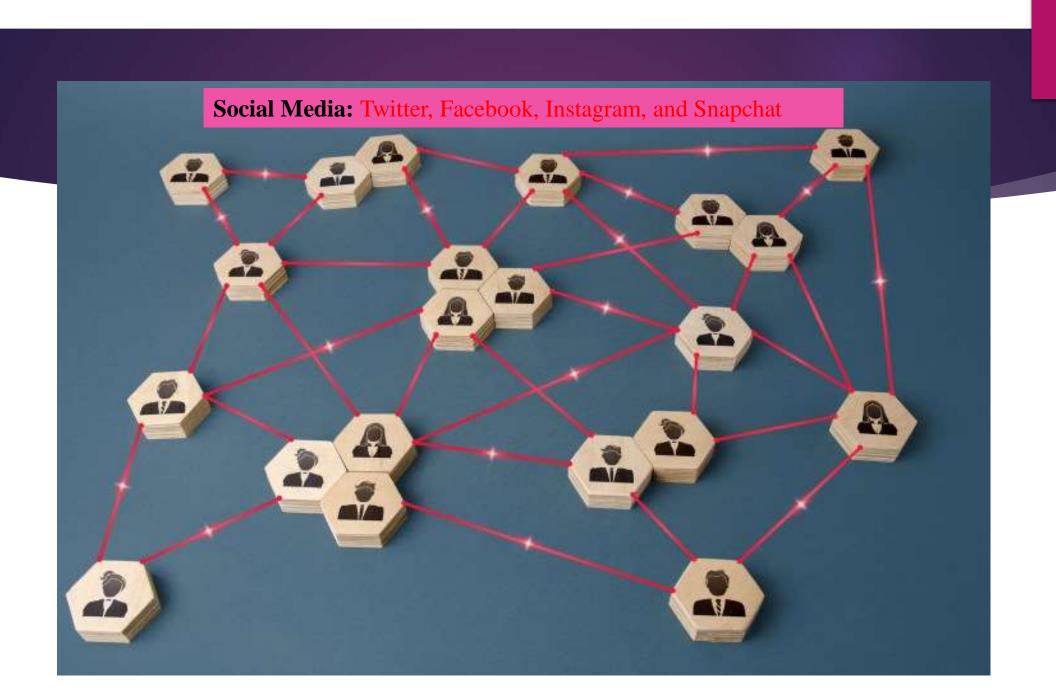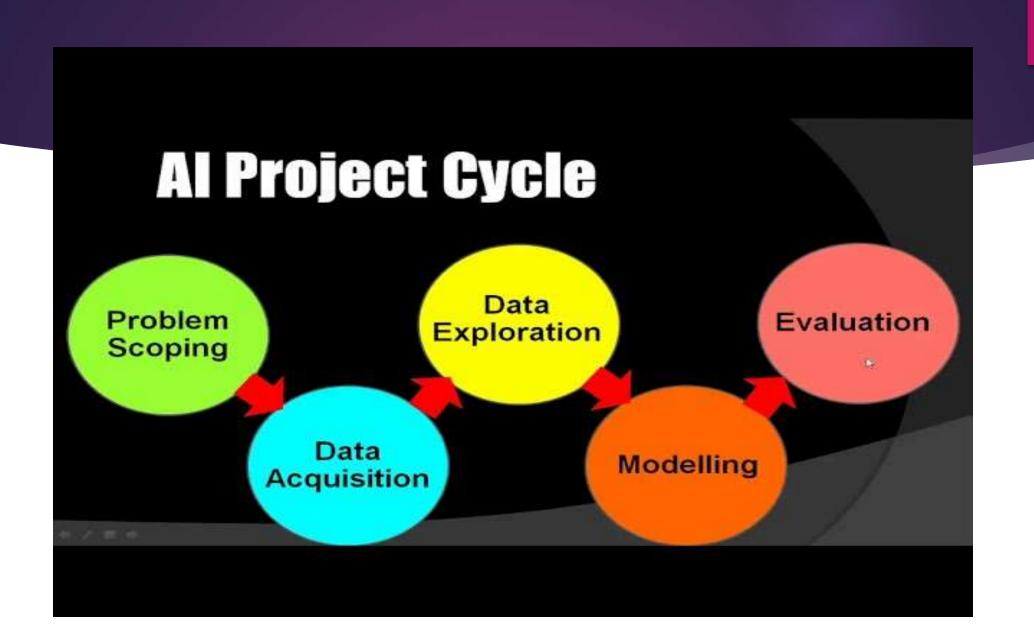
Section 2: AI Project Cycle

In AI project cycle framework, there are certain stages.

1. Problem Scoping

2. Data Acquisition

3. Data Modelling

4. Evaluation and Development

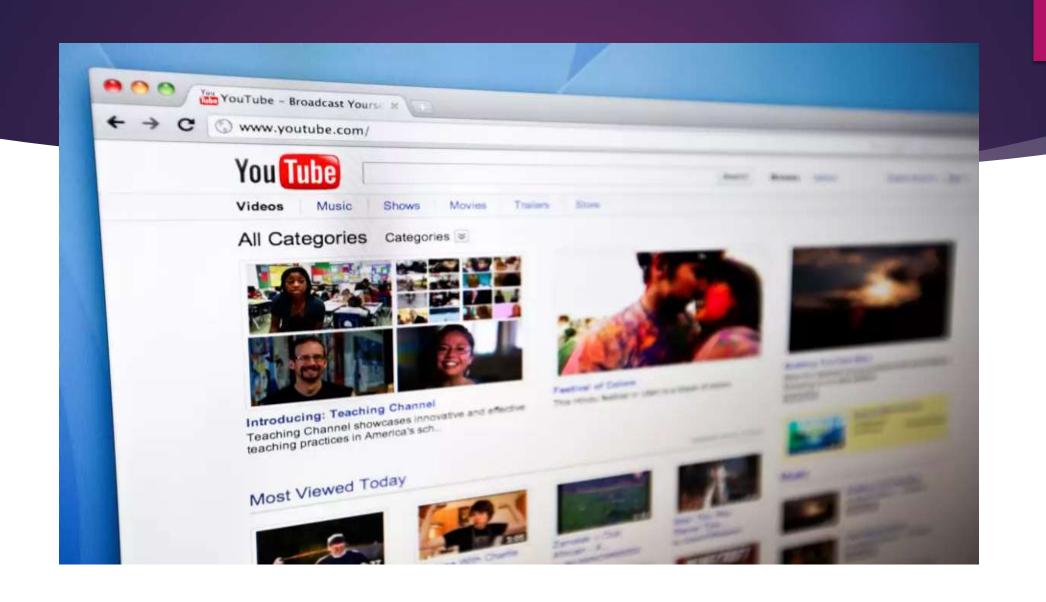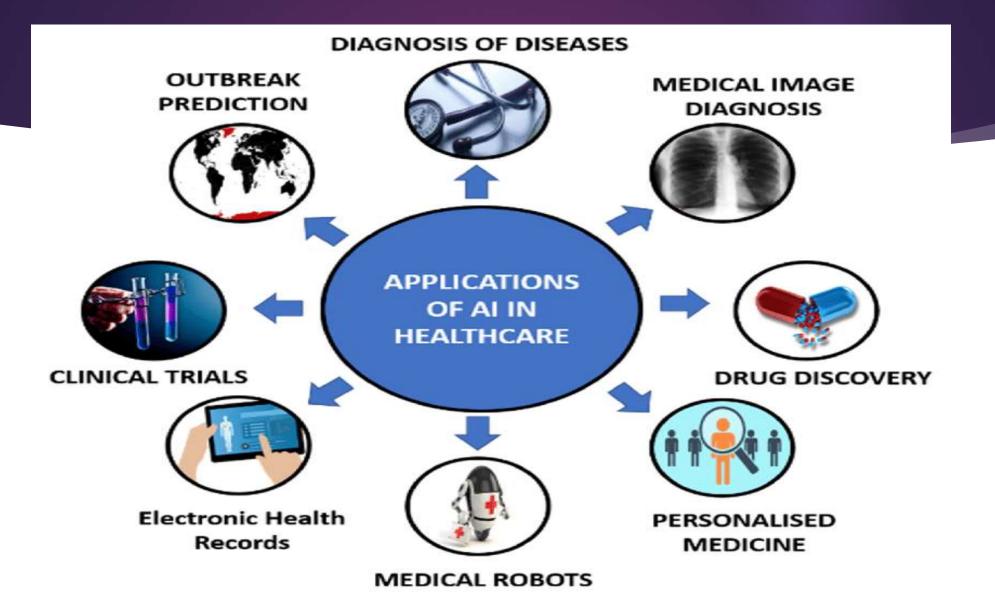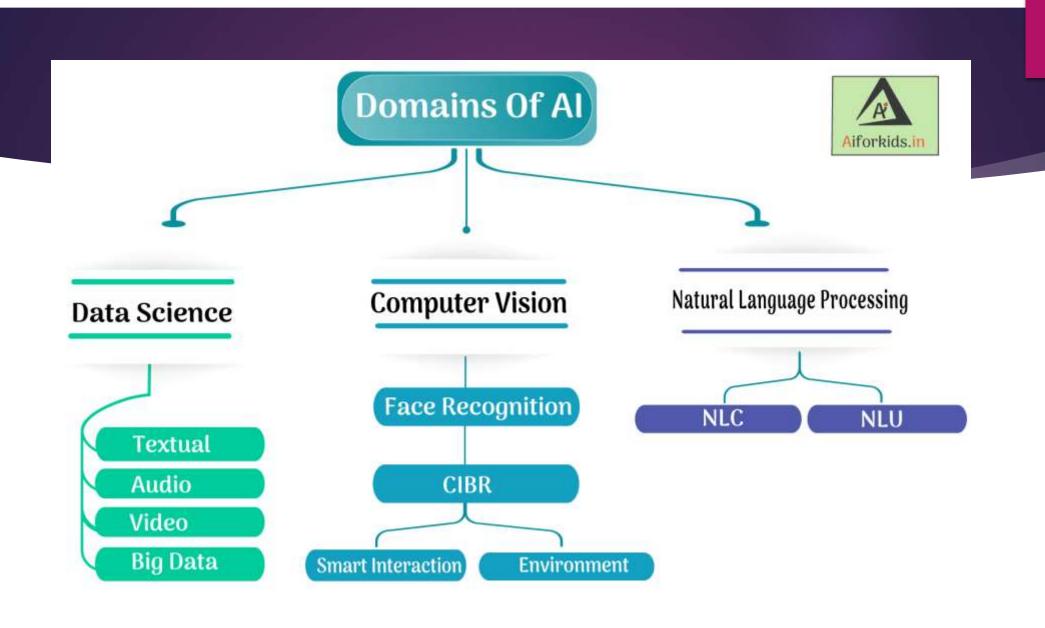# What is 4W Canvas?

WHO

WHAT

WHERE

WHY
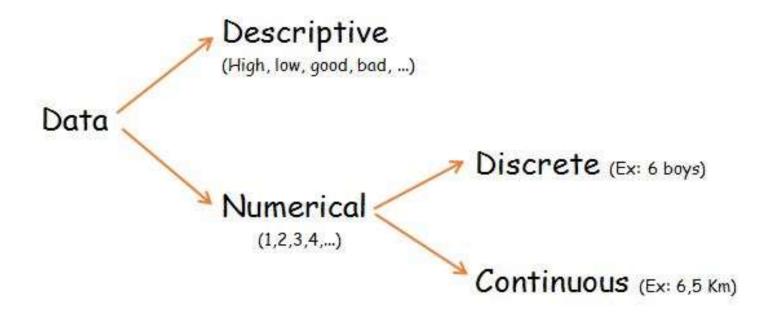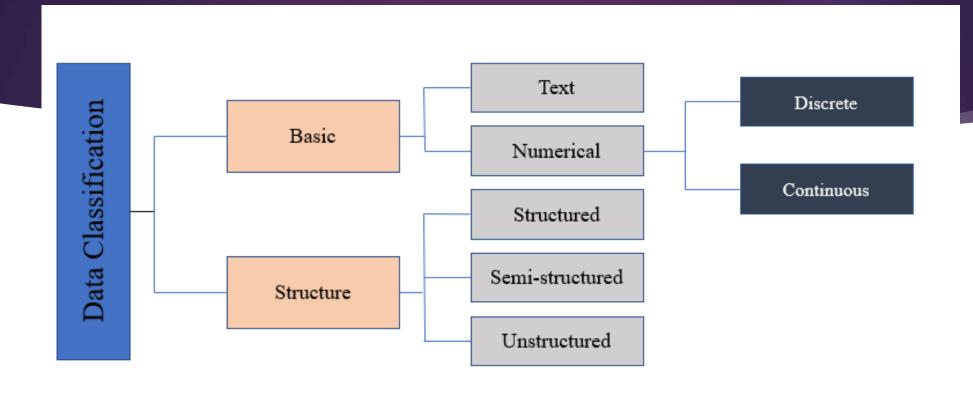
The 4Ws are:
- Who are you solving for?
- What is the problem?
- Where the problem exists?
- Why are you solving it?

AI Project Cycle

Play the video

Data-type

Data
- Descriptive (High, low, good, bad, ...)
- Numerical (1,2,3,4,...)
  - Discrete (Ex: 6 boys)
  - Continuous (Ex: 6,5 Km)

Section3: AI in Medicine

AI Applications in Diagnosis and Treatment

1. Diagnose diseases

2. Develop drugs faster

3. Personalize treatment

4. Improve gene editing

AI Applications in Diagnosis and Treatment

1. Diagnose diseases
Such as:

- Detecting lung cancer or strokes based on **CT scans**
- Assessing the risk of sudden cardiac death or other heart diseases based on **electrocardiograms** and **cardiac MRI images**
- Classifying skin lesions in **skin images**
- Finding indicators of diabetic retinopathy in **eye images**

Detecting **lung cancer** from CT Scans

Assess **cardiac health** from electrocardiograms

Classify **skin lesions** from images of the skin

Identify **retinopathy** from eye images

AI Applications in Diagnosis and Treatment

1. Diagnose diseases

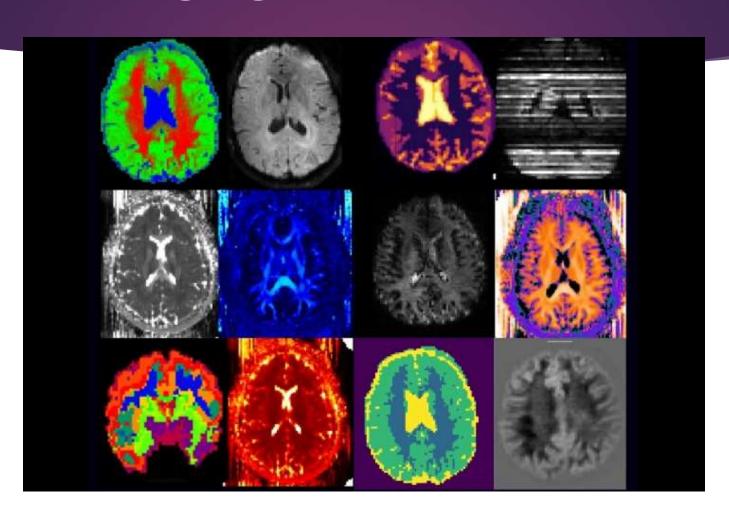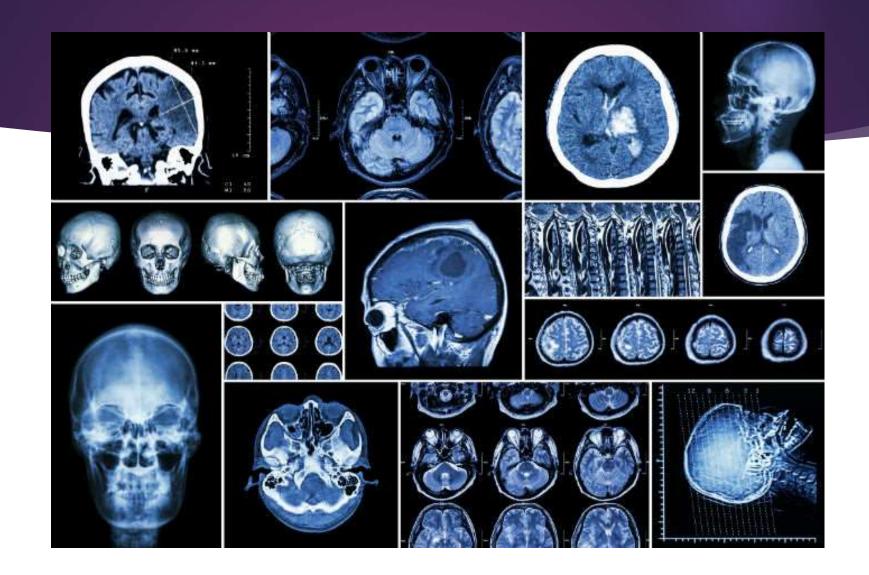**2. Develop drugs faster**

The 4 Stages in Drug Development

Identify **target** molecules → Discover **effective drugs** → Speed up **clinical trials** → Find **biomarkers** for diagnostics

AI Domains

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AI Data in Medicine

1. **Electronic Health Records (EHRs):**
2. **Medical Imaging Data:**
3. **Genomic Data:**
4. **Laboratory Test Data:**
5. **Patient-Generated Health Data:**
6. **Clinical Trial Data:**
7. **Biomedical Research Data:**
8. **Population Health Data:**
9. **Data Security and Privacy:**
10. **Big Data Analytics:**

Medical Imaging Data

Patient-Generated Health Data

AI Applications in Diagnosis and Treatment

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General AI tools:

- ChatGPT
- Bard
- Microsoft Bing (Edge)
- Poe

► GPT tools in medicine:

- MedGPT
- gpt-MD
- PredictionHealth
- Scolary
- FullcodeMedicial

Thank You!