Chapter – 7 Artificial Intelligence

Lesson Objective :

- Introduction to Function
- Coding using functions
- Break and continue statements

Skills to be attained : Knowledge on AI and its type, various branches of AI.

Tools / Websites / Resources :

1. https://www.onlinegdb.com//

2. gedit text editor in Hitech lab

Teacher Led Instructions :

What is Artificial Intelligence ?

Artificial Intelligence (AI) is like teaching computers to think and make decisions on their own, similar to how humans do. It helps machines learn from experiences, solve problems, and perform tasks that usually need human intelligence.

Key Points:

1. **What is AI?**
    - AI is when computers do tasks that normally require human intelligence, like recognizing faces, understanding speech, or even playing games.
    - Examples of AI are voice assistants like Siri or Alexa, or when YouTube recommends videos for you to watch.

2. **How does AI learn?**
    - AI learns through **data** (information). For example, if you show a computer 100 pictures of cats and dogs, it can learn to tell the difference between the two.

Types of AI:

1. **Narrow or Weak AI:** Designed for specific tasks (e.g., image recognition, language processing)

2. **General or Strong AI:** Human-like intelligence, capable of performing any intellectual task

3**. Super intelligence**: Significantly more intelligent than human beings

AI applications:

1. Robotics
2. Natural Language Processing (NLP)
3. Computer Vision
4. Expert Systems
5. Machine Learning
6. Deep Learning
7. Neural Networks

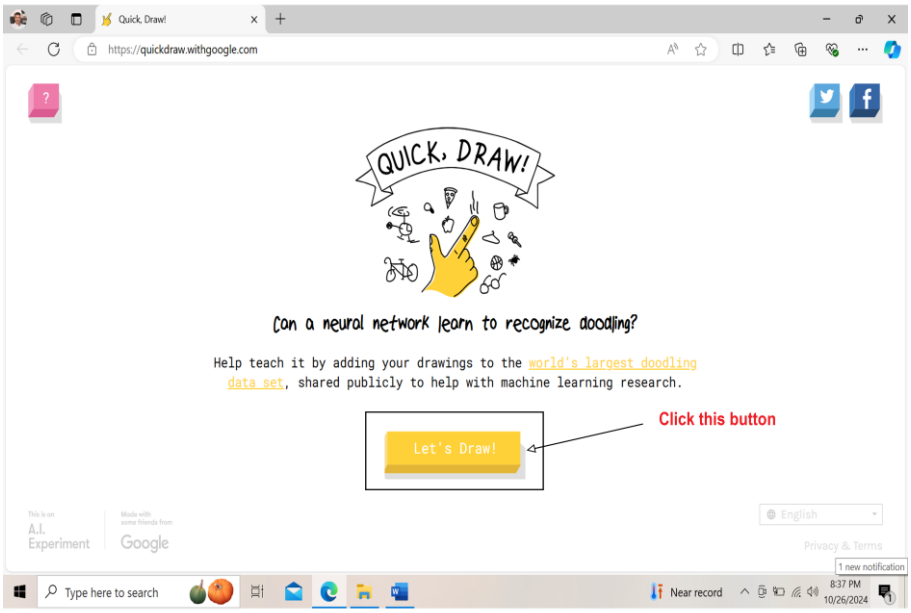
AI is not about creating new knowledge, but about collecting and processing data to take decisions and implement it in intellectual way. It rests on three basic pillars:

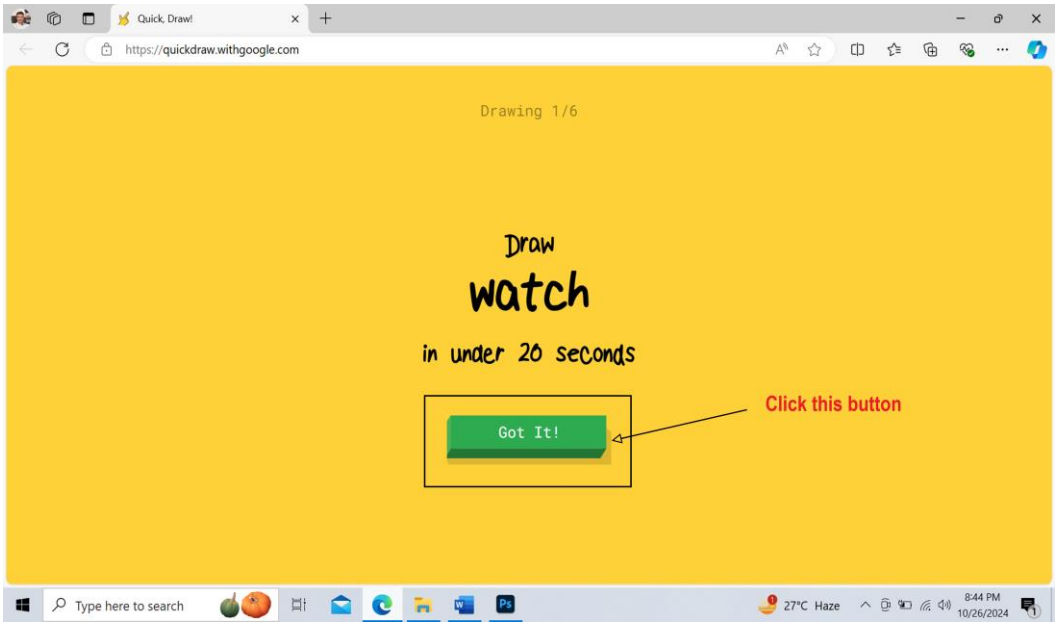
- **Data.** This is the information collected and organised to automate tasks. It can be numbers, texts, images, etc.
- **Hardware.** This is the computing power that allows us to process data faster and more accurately.
- **Software.** It consists of a set of instructions that allow a machine to accomplish a task.

Student Activities :

1. Quick, Draw! (10 minutes)

- **Website**: https://quickdraw.withgoogle.com/
- **What it is**: This is an AI game where you draw objects, and the computer tries to guess what you're drawing. It shows how AI can recognize patterns and learn to identify images.
- **Why it's useful**: It's a fun way to understand how AI uses pictures to learn and guess!



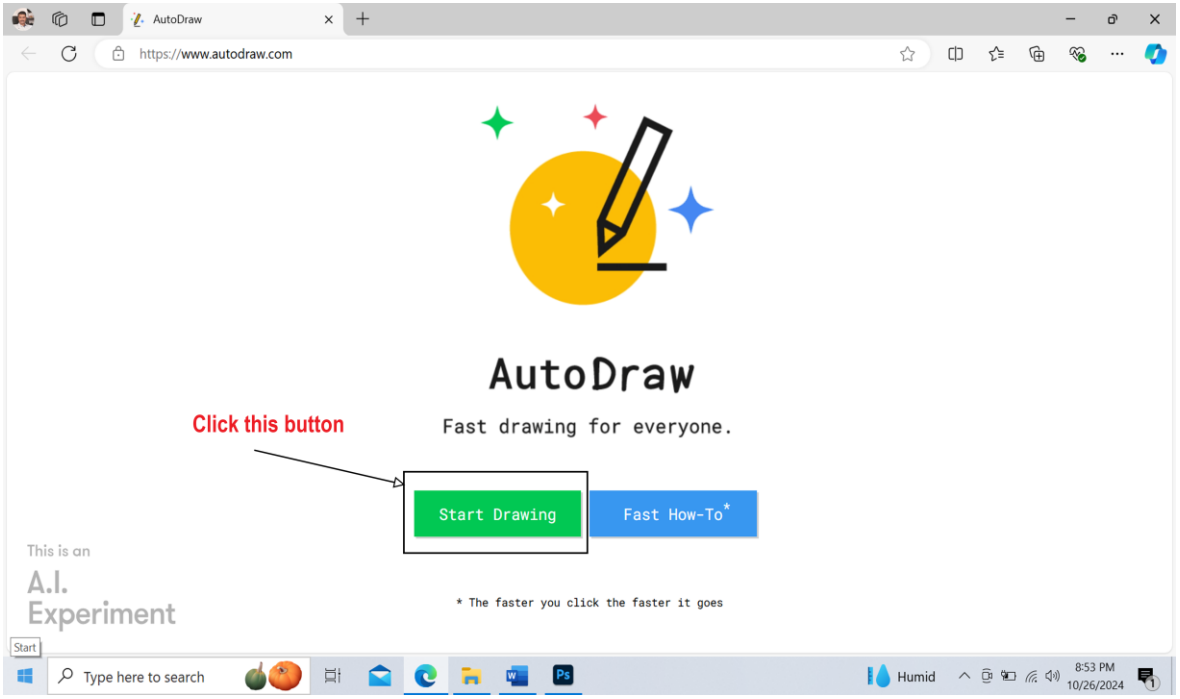


In the next window, you draw a watch in 20 seconds.

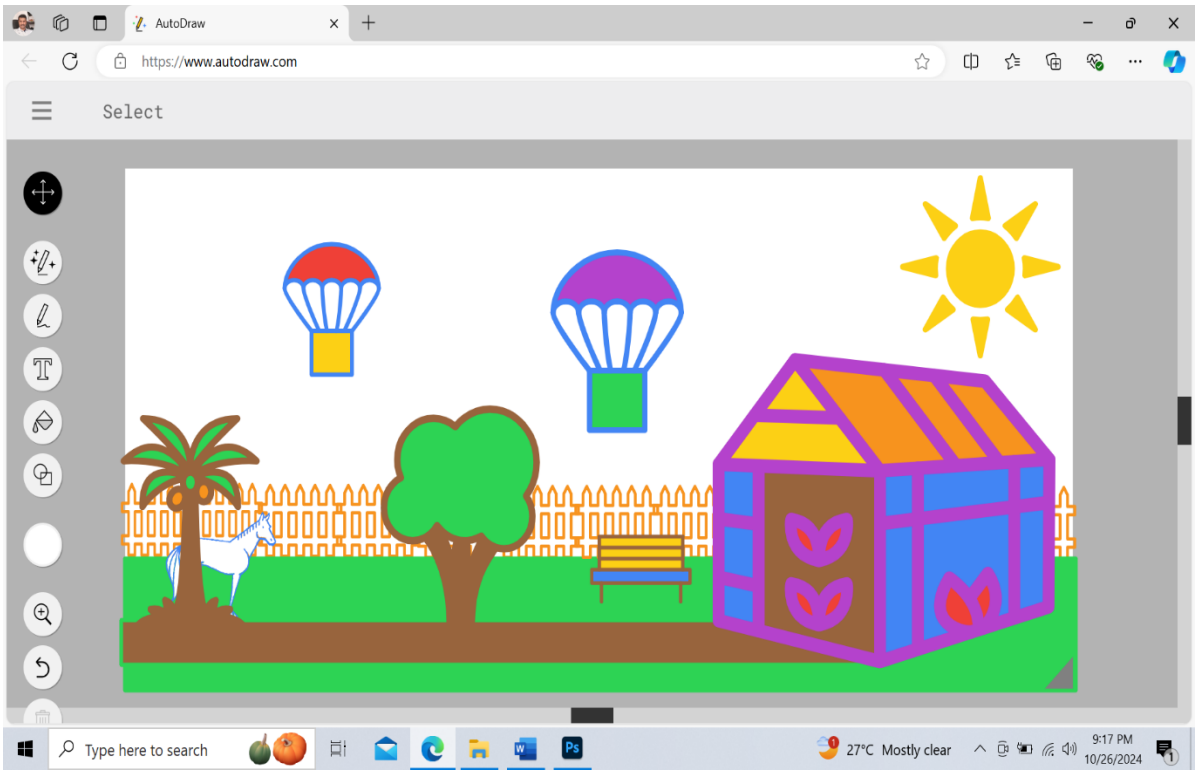
2. Auto Draw

Website: https://www.autodraw.com/

- **What it is**: It pairs machine learning with drawings from talented artists to help everyone create anything visual, fast.
- **Why it's useful**: it can guess hundreds of drawings and we look forward to adding more over time.



Draw the following picture.



Conclusion :

Students will get an idea the applications of artificial intelligence and practically they will gain knowledge about a few AI tools and their uses.