What is a Web Browser?

Introduction

A browser is a software designed to find and display content on the World Wide Web. This content might be **a web page, a pdf document, a picture, a video or any other content**. The richest content is a web page. A web page is usually an HTML document which stands for **Hyper Text Markup Language**. Web browsers are also able to run **CSS (Cascading Style Sheet) and Javascript code**. CSS styles the HTML pages to make them look beautiful. And Javascript gives the page the ability to interact with users, show dynamic content and listen to specific **events**.

Events are fired inside the browser window and tend to be attached to a specific item that resides in it (this might be a single element, set of elements, the HTML document loaded in the current tab or the entire browser window). Different types of events occur on the browser. For example:

* Clicking or hovering the cursor over a button, link, picture, etc.
* Pressing a key.
* Resizing, minimizing, maximizing or closing the browser window.
* Loading a web page.
* Submitting a form.
* Playing, pausing a video.

Browsers have common features like address bar, back and forward buttons, bookmarking options, buttons for refreshing the page and stopping the request and home button to direct the user to the home page.

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| *Web browsers* |

Q: What Is Web Browser?  
A: A web browser is a program that you use to view web pages. Some of the most popular web browsers are Microsoft Internet Explorer, Google Chrome, Mozilla Firefox.

 - Interview Q&A

## Web Browser Structure

### Introduction

Web browsers have seven high level components. These are **User Interface, Browser Engine, Rendering Engine, Networking, Javascript Interpreter, UI Backend and Data Storage**.

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| --- |
| Web browser structure |

 User Interface :The user interface is where the users interact with the browser.

 Browser Engine :The browser engine is the bridge between the user interface and the rendering engine. It relays the necessary information to the rendering engine for performing a render.

 Rendering Engine :The rendering engine is responsible for rendering the requested content and displaying it on the screen. It may be either an HTML, a CSS or a JS content.

 Networking :The networking component uses the URL given by the user and retrieves the page via a protocol called HTTP or a file via FTP protocol.

 Javascript Interpreter :The Javascript interpreter, as the name suggests, interprets and execute the Javascript code of the web page. Then the results are sent to the rendering engine for displaying.

 UI Backend :The UI Backend is responsible for drawing basic widgets like combo boxes and windows. It uses operating system user interface methods.

 Data Storage :The data storage is persistence layer. The browser may need a small storage area to store, process or show data. So there are some mechanisms for storing like localStorage, sessionStorage, IndexedDB, WebSQL and FileSystem.

## What is HTTP?

### Introduction

**Hypertext Transfer Protocol (HTTP)** is an application layer designed within the framework of internet protocol suite. It is used for transferring **text, image, sound, video or any other type of multimedia**[**files**](https://lms.clarusway.com/mod/lesson/view.php?id=1052). When a web browser tries to reach a specific web address, it wants to get in touch with the computer holding all the necessary [files](https://lms.clarusway.com/mod/lesson/view.php?id=1052). So basically the client web browser sends an **http request** to get an HTML content or any specific data staying inside the server computer. When the server computer gets the request, it returns an **http response** containing the information requested.

The statement written in the address bar is called **Uniform Resource Locator (URL)**. URLs are the keys to specify a computer and its IP address in the network. The browser should use this key to find out the IP address of a particular computer. The system that is responsible to hold the values of these keys is [**Domain Name System (DNS)**](https://lms.clarusway.com/mod/lesson/view.php?id=943) [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015). If the DNS server knows the address, it answers. Otherwise, the DNS server starts to ask other DNS [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015) and fetches the information at the end. Therefore DNS gives it back to the browser and the browser can find the way to the correct destination using HTTP and other related protocols.

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| Client and server model |

What is HTTP?

HTTP Request and Response

As mentioned before, HTTP (Hypertext Transfer Protocol) is a request-response protocol. A client on one side (web browser) asks or requests something (a resource located on the server) from a server (a computer responsible to respond to that request) and the server on the other side sends a response to that client. But before this request and response activities, a connection should be established. When we open our browser and write down the URL (Uniform Resource Locator), we are making the first step to connect to the resource. The URL is the address of that resource. It could be a website or a web service, a pdf or anything similar. If we pull apart the URL, we will see the structure like the one below.

URL = http: // host : port / path ? query

The host is the computer where the resource is stored. The host computers are given a human readable alias and this alias defines the IP address of the hosting computer in the URL. The port is the port number of the hosting computer and the path is the address where the resource file is located in the hosting computer. The query parameter is the value we give to the resource file while we try to establish the connection.

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| *Request Message* |

If the URL starts with **HTTP** and there is no port value, the default port number is 80. If it starts with **https**, then the default port number is 443. The **path** and the **query** characters are optional. When the connection is established, the medium is available for transferring the request. But what is this request? A request is a text message and it has 4 parts which are request line, headers (optional), a blank line and a message body (optional).

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| *Request Message Example* |

The server responds to that request with an HTTP response message. The structure of the response message is similar to the request message. The one thing changed is the status line in place of the request line. A status line consists of the protocol version followed by a numeric status code and its associated meaning. Status code element is a 3-digit integer where the first digit of the status code defines the category of response. There are 5 categories. These categories are in its general state are expressed below.

* 1xx -> Informational
* 2xx -> Success
* 3xx -> Redirection
* 4xx -> Client Error
* 5xx -> Server Error

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| *Response Message Example* |

The rest is handled by the browser and its engines.

Q: What is status code in HTTP?  
A: It is a standard response code given by web [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015) on the Internet. It helps to identify the cause of a problem when a web page or other resource does not load properly. There are two major group of HTTP status code error exist:

* 4xx Client Error
* 5xx Server Error

 - Interview Q&A

Q: What are the header fields in HTTP?  
A: HTTP header fields allow the client and server to pass information with the request and response message. Following are the header fields in HTTP:

* **General header:**It applies for both request and response message.
* **Request header:** It contains information for the request message.
* **Response header:** It is used to contain response header information sent by the web server.
* **Entity header:**It is used to contain more information about the body of the entity.

What is HTTP?

Certificates and HTTPS

**SSL** stands for Secure Sockets Layer and, in short, it's the standard technology for keeping an internet connection secure and safeguarding any sensitive data that is being sent between two systems, preventing criminals from reading and modifying any information transferred, including potential personal details. The two systems can be a server and a client (for example, a shopping website and browser) or server to server (for example, an application with personal identifiable information or with payroll information).

**TLS** (Transport Layer Security) is just an updated, more secure, version of SSL. We still refer to our security certificates as SSL because it is a more commonly used term.

**HTTPS** (Hyper Text Transfer Protocol Secure) appears in the URL when a website is secured by an SSL certificate. The details of the certificate, including the issuing authority and the corporate name of the website owner, can be viewed by clicking on the lock symbol on the browser bar.

Q: What are SSL certificates?  
A: SSL is a standard security protocol which ensures confidentiality and integrity of data while in transit. It encrypts the data flow between the web browser and web server, hence ensures confidentiality. Also, web server and browser exchanges key to decrypt the data, which ensures the integrity of data.

 - Interview Q&A

Q: What are the benefits of HTTPS certificate?  
A: The major benefits of HTTPS certificate are:

* Customer information like credit card number and ATM pin is encrypted and cannot be easily tracked.
* Customers trust and prefer to purchase from the sites that use HTTPS protocol.
* This protocol shows authenticate register domain as secure connection.

## Cookies

### Cookies

A **cookie** is a tiny little file that’s stored on your computer. It contains the address of the web site and codes that your browser sends back to the web site each time you visit a page there. Cookies don’t usually contain personal information or anything dangerous; they’re usually innocuous zararsiz and useful.

When you browse the web, the webserver needs to know who you are if you want to do things that require logging in or putting items in a virtual shopping cart or completing any other process that requires web site to remember information about you as you move from page to page. The most commonly used trick that allows web sites to keep track of what you’re doing is called setting cookies.

The **advantages** of cookies are:  
\* The cookies are simple to use & implement,  
\* They do not require any server resources,  
\* They are stored on the user’s computer, so, no extra burden on the server,  
\* They are light in size so they occupy less memory and you do not need to send back the data to the server.

The **disadvantages** of cookies are:  
\* The cookies are not secure as they are stored in a clear text, hence no sensitive information should be stored in cookies,  
\* They may pose to a possible security risk because anyone can open and tamper kurcalama with the cookies.

Q: What is Cookie?  
A: Cookie provides a simple way to identify session among a group of HTTP/HTML requests. The cookie value is often an index into a table stored in the memory of a Web server that points to an in-memory object holding the user's records. This has many potential problems: If the user's request is routed to a different server in a subsequent request, the session information is unknown to the server.  
If the user is routed to a different server and the server is part of an application cluster, then all the [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015) that could receive the user's request must have a way to synchronize the session data. Storing cookies and synchronizing sessions among clusters of server usually requires configuration, storage space, and memory.

Security and Password

Introduction

Security is the state of being free from danger or threat. There are 3 main types of security in computing:

**1. Physical Security:** Using physical barriers to prevent unauthorized access to data (like locking the door of the server room).  
**2. Software Security:** Fixing flaws in your application that could grant attackers unwanted levels of access to your systems.  
**3. Network Security:** Security of networked services (websites, [databases](https://lms.clarusway.com/mod/lesson/view.php?id=995), etc).

The computer is like a castle with walls, inside and outside are very different. The bad guy cannot just access the bytes outside the computer but inside the computer at will. The bad guy needs to work at it.

A couple of bad guy strategies:

* obtain a password allowing access
* trick the computer into running bad guy code

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| *Bad guy will want to access your castle from open doors (network)* |

Security and Password

Access Control

Access Control is a framework for controlling who has access to what resources on a system. There are many ways to implement Access Control, but the three basic principles of Access Control are **Identification**, **Authentication**, and **Authorization**.

* **Identification:** Who is this person?
* **Authentication:** Is this the person who he claims to be?
* **Authorization:** Is this person allowed to perform this action?

Security and Password

Passwords

Passwords are the de facto form of Authentication for computers, but they aren’t a perfect solution. Passwords are hard to remember and surprisingly easy for computers to guess.

There are some problems for passwords:

* People use same passwords for different accounts,
* People use simple passwords that are easy to guess,
* Passwords are hard to remember.

Solutions to these problems:

* Using a password manager,
* Changing passwords regularly,
* Using multi-step authentication.

Cyber Attacks

Phishing

**Phishing** is the fraudulent attempt sahte girisim to obtain sensitive information such as usernames, passwords, and credit card details by disguising oneself as a trustworthy entity in an electronic communication. Typically carried out by email spoofing sizdirma or instant messaging, it often directs users to enter personal information at a fake website that matches the look and feel of the legitimate site.

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| *Phishing web site acting like Paypal's official website* |

Phishing is an example of social engineering techniques being used to deceive users. Users are often lured by communications purporting iddia etmek to be from trusted parties such as social web sites, auction sites, banks, online payment processors or IT administrators. The above screenshot belongs to a phishing site, not the genuine PayPal site. If you type your username and password at this fake site, your credentials will be sent to the bad guy and then he will gain access to your account.

Q: Explain Phishing and how to prevent it.  
A: Phishing is a Cyberattack in which a hacker disguises as a trustworthy person or business and attempt to steal sensitive financial or personal information through fraudulent email or instant message.  
You can prevent Phishing attacks by using the following practices:

* Don’t enter sensitive information in the webpages that you don’t trust
* Verify the site’s security
* Use Firewalls
* Use AntiVirus Software that has Internet Security
* Use Anti-Phishing Toolbar

## Cyber Attacks

### Malware

The term **malware** is a contraction of **mal**icious soft**ware**. Put simply, malware is any piece of software that was written with the intent of damaging devices, stealing data, and generally causing a mess. Viruses, trojans, spyware, and ransomware are among the different kinds of malware.

A **computer virus** is a type of malicious code or program written to alter the way a computer operates and is designed to **spread** from one computer to another.

A Trojan horse or **Trojan** is a type of malware that is often disguised as legitimate software. Trojans can be employed by cyber-thieves and hackers trying to gain access to users' systems. Users are typically tricked by some form of social engineering into loading and executing Trojans on their systems.

**Spyware** is a type of malware that's hard to detect. It collects information about your surfing habits, browsing history, or personal information (such as credit card numbers), and often uses the Internet to pass this information along to third parties without you knowing.

**Ransomware Trojan** is a type of cyberware that is designed to extort money from a victim. Often, ransomware will demand a payment in order to undo changes that the Trojan virus has made to the victim’s computer.

|  |
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| Bad guy |

Q: Define Spyware.  
A: Spyware is a malware that aims to steal data about the organization or person. This malware can damage the organization's computer system.

Cyber Attacks

SQL Injection-XSS-CSRF

**SQL injection** is a code injection technique that might destroy your database. This type of attack usually occurs when you ask a user for input, like their user-name/user-id, and instead of a name/id, the user (bad guy) gives you an SQL statement that you will unknowingly run on your database.

**Cross-Site Scripting (XSS)** attacks are a type of injection, in which malicious scripts are injected into otherwise benign and trusted websites. XSS attacks occur when an attacker uses a web application to send malicious code, generally in the form of a browser side script, to a different end-user.

**Cross-site Request Forgery (CSRF)** is a very common vulnerability. It's an attack that forces a user to execute unwanted actions on a web application in which the user is currently authenticated.

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| *Injecting SQL querry to web site form* |

Q: Explain SQL Injection and how to prevent it.  
A: SQL Injection (SQLi) is a code injection attack where an attacker manipulates the data being sent to the server to execute malicious SQL statements to control a web application’s database server, thereby accessing, modifying and deleting unauthorized data. This attack is mainly used to take over database [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015).  
You can prevent SQL Injection attacks by using the following practices:

* Use prepared statements
* Use Stored Procedures
* Validate user input

## Encryption/Decryption

### Encryption

**Encryption** is a way of scrambling data so that only authorized parties can understand the information. In technical terms, it is the process of converting **plaintext** (the original bytes (text, image, etc.)) to **ciphertext** (encrypted text). In simpler terms, encryption takes readable data and alters it so that it appears random. Encryption requires the use of an **encryption key** that is a set of mathematical values known only by the sender and the recipient of the encrypted message know.

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| Encryption example |

Q: What is plaintext or cleartext?  
A: The decrypted message, when it is returned back into its plain or original state of context which is comprehensible and decipherable, is also known as cleartext or plaintext.

 - Interview Q&A

Q: What is ciphertext?  
A: When the message is encrypted into a state which is totally incomprehensible and indecipherable, this is known as the ciphertext. So, to illustrate all of this, with the previous example, when the sending party creates the written message of “I LOVE YOU”, this is the plaintext or the cleartext. Once this message is encrypted into the format of “UYO I VEOL” and while it is in transit, it becomes known as the ciphertext. Then, once the receiving party gets this ciphertext and then decrypts it into a comprehensible and understandable form of “I LOVE YOU,” this message then becomes the plaintext or the cleartext again.

## Encryption/Decryption

### Decryption

**Decryption** is a process of converting encoded/encrypted data (ciphertext) in a form that is readable and understood by a human or a computer. This method is performed by un-encrypting the text manually or by using keys that were used to encrypt the original data.

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| Decryption example |

Q: What exactly are encryption and decryption?  
A: The terms “scrambling” and “descrambling” are commonly known as “encryption” and “decryption.”  
For example: when the written message “I LOVE YOU” is scrambled by the sending party, it becomes what is known as the “encrypted message.” This means that the written message has been disguised in such a manner that it would be totally meaningless, or in the terms of cryptography, it would be undecipherable.  
Encryption can also be described as the conversion of information from a readable state to apparent nonsense. When the receiving party receives this encrypted written message, it must be unscrambled into an understandable and comprehensible state of the context. This process of unscrambling is also known as decryption

## Encryption/Decryption

### Hashing

Hashing is the process of converting a given key to another value. A **hash function** is used to generate the new value according to a mathematical algorithm. The result of a hash function is known as a **hash value** or simply, a **hash**.

Hashing is also used in data encryption (we will learn in the following lessons). Passwords can be stored in the form of their hashes so that even if a database is breached, plaintext passwords are not accessible. **MD5**, **SHA-1** and **SHA-2** are popular cryptographic hashes.

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| Hashing Example |

Q: What is the hashing function?  
A: The hashing function is a one-way mathematical function. This means that it can be used to encode data, but it cannot decode data. Its primary purpose is not to encrypt the ciphertext; rather, its primary purpose is to prove that the message in the ciphertext has not changed in any way, shape or form. This is also referred to as “message integrity.” If the mathematical function has changed in any way, the message has then changed.

## Encryption/Decryption

### Cryptocurrency

**Cryptocurrency** is an internet-based medium of exchange which uses cryptographical functions to conduct financial transactions. Cryptocurrencies leverage blockchain technology to gain decentralization, transparency, and immutability.

**Blockchain** is the technology that enables the existence of cryptocurrency. **Bitcoin** is the name of the best-known cryptocurrency, the one for which blockchain technology was invented. A cryptocurrency is a medium of exchange, such as the US dollar, but it is digital and uses encryption techniques to control the creation of monetary units and to verify the transfer of funds.

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| Cryptocurrency |

## Introduction to AI

### What is AI?

John McCarthy, who is the father of Artificial Intelligence, described Artificial Intelligence as “The science and engineering of making intelligent machines, especially intelligent computer programs”. Artificial Intelligence is the intelligence that machines demonstrate. It allows us to create machines that can perform multiple tasks and solve real problems without error.

Artificial Intelligence takes data (especially [big data](https://lms.clarusway.com/mod/lesson/view.php?id=996)) as input and builds a model that can predict. Predictions make it seem as if the computer is thinking. This makes guesses about new data. So machines become smart and intelligent.

| **https://docs.google.com/uc?id=1G92kVQGNzYXlG5d3FPKqZvUwl9Wc78HF** |
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| AI Processes |

Q: What is Artificial Intelligence?  
A: Artificial Intelligence is a field of computer science wherein the cognitive functions of the human brain are studied and tried to be replicated on a machine/system. Artificial Intelligence is today widely used for various applications like computer vision, speech recognition, decision-making, perception, reasoning, cognitive capabilities, and so on.

 - Interview Q&A

### History of AI

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| Short history of Artificial Intelligence |

Q: What is Turing test?  
A: The Turing test is a method to test a machine’s ability to match the human-level intelligence. A machine is used to challenge human intelligence, and when it passes the test it is considered intelligent. Yet a machine could be viewed as intelligent without sufficiently knowing how to mimic a human.

## Machine Learning

### Introduction

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it to learn for themselves.

The process of learning begins with observations or data, such as examples, direct experience, or instruction, in order to look for patterns in data and make better **decisions** in the future based on the examples that we provide. The primary aim is to allow the computers to learn automatically without human intervention or assistance and adjust actions accordingly.

Q: What is Machine Learning?  
A: It’s the science of getting computers to act by feeding them data so that they can learn a few tricks on their own, without being explicitly programmed to do so.

Machine Learning

Techniques

Classification and Regression are two major prediction techniques which are usually dealt with machine learning.

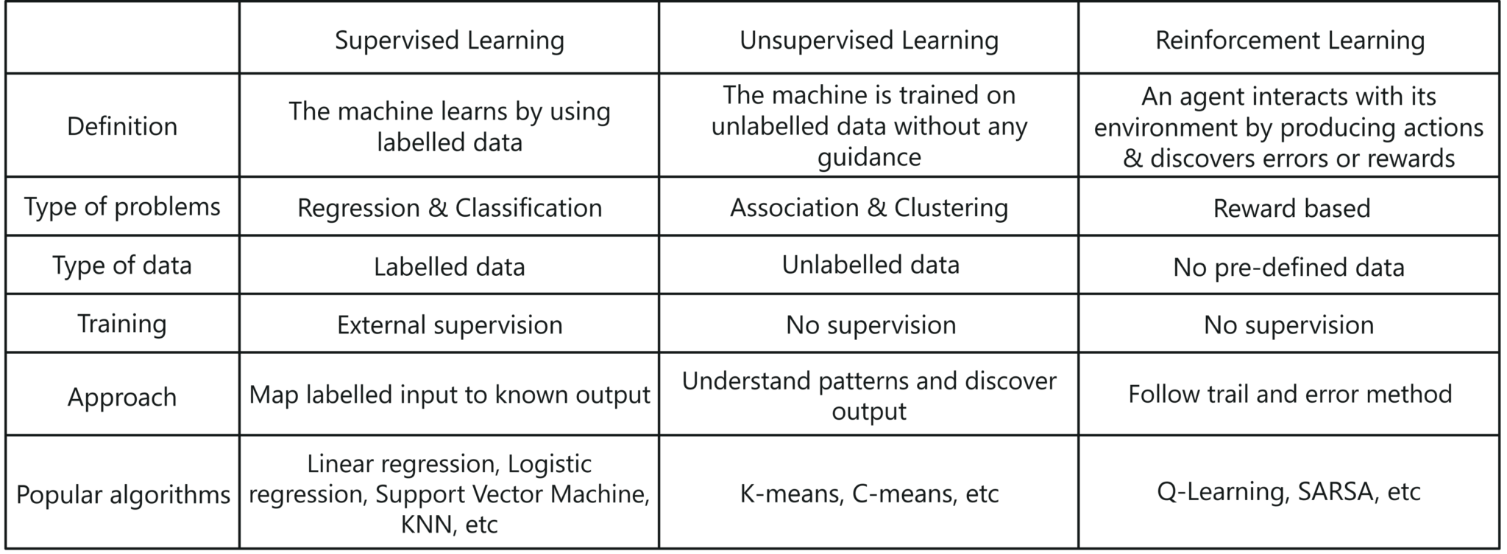
* **Classification** is the process of finding or discovering a model or function which helps in separating the data into multiple categorical classes
* **Regression** is the process of finding a model or function for distinguishing the data into continuous real values instead of using classes.

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| *Regression and classification* |

Machine learning algorithms are often categorized as supervised or unsupervised.

1. **Supervised machine learning algorithms** can apply what has been learned in the past to new data using **labeled** examples to predict future events.
2. **Unsupervised machine learning algorithms** are used when the information used to train is **neither classified nor labeled**.
3. **Reinforcement machine learning algorithms** is a learning method that interacts with its environment by producing actions and discovers **errors** or **rewards**.

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| *Machine learning algorithms* |

Q: What are the different types of Machine Learning?  
A: 

 - Interview Q&A

Q: Which is better for image classification? Supervised or unsupervised classification? Justify.  
A: **In supervised classification,** the images are manually fed and interpreted by the Machine Learning expert to create feature classes.  
**In unsupervised classification,** the Machine Learning software creates feature classes based on image pixel values.  
Therefore, it is better to choose supervised classification for image classification in terms of accuracy.

## Machine Learning

### Deep Learning

**Neural networks** are a set of algorithms, modeled loosely after the human brain, that is designed to recognize patterns. **Deep learning**, also known as **deep neural network**, is a machine learning technique that teaches computers to do what comes naturally to humans: learn by example. In deep learning, a computer model learns to perform classification tasks **directly** from images, text, or sound. It is the most popular and most used machine learning algorithm.

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| Deep neural network |

Q: What is an artificial intelligence Neural Networks?  
A: Artificial intelligence Neural Networks can model mathematically the way biological brain works, allowing the machine to think and learn the same way the humans do- making them capable of recognizing things like speech, objects and animals like we do.

 - Interview Q&A

Q: What is Deep Learning?  
A: Deep Learning is a subset of Machine Learning which is used to create an artificial multi-layer neural network. It has self-learning capabilities based on previous instances, and it provides high accuracy.

 - Interview Q&A

AI Topics

Computer Vision

**Computer vision** is a field of artificial intelligence (AI) that enables computers and systems to derive meaningful information from *digital images*, *videos* and other *visual inputs*.

There are many types of computer vision that are used in different ways. Some of them are:

* **Image segmentation** partitions an image into multiple regions or pieces to be examined separately.
* **Object detection** identifies a specific object in an image. Advanced object detection recognizes many objects in a single image: a football field, an offensive player, a defensive player, a ball and so on. These models use an X, Y coordinate to create a *bounding box* and identify everything inside the box.
* **Facial recognition** is an advanced type of object detection that not only recognizes a human face in an image but identifies a specific individual.
* **Edge detection** is a technique used to identify the outside edge of an object or landscape to better identify what is in the image.

| **https://docs.google.com/uc?id=1HnFgPVyMDO40s1OOBM9quOc2edfyzlcs** |
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| *Computer vision example* |

Q: How is Computer Vision and AI related?  
A: Computer Vision is a field of Artificial Intelligence that is used to obtain information from images or multi-dimensional data. [Machine Learning](https://lms.clarusway.com/mod/lesson/view.php?id=1053) algorithms such as K-means is used for Image Segmentation, Support Vector Machine is used for Image Classification and so on.  
Therefore Computer Vision makes use of AI technologies to solve complex problems such as Object Detection, Image Processing, etc.

 - Interview Q&A

AI Topics

Natural Language Processing

**Natural language processing (NLP)** is a branch of artificial intelligence that helps computers understand, interpret and manipulate human language. NLP draws from many disciplines, including computer science and computational linguistics, in its pursuit to fill the gap between human communication and computer understanding.

These underlying tasks are often used in higher-level NLP capabilities, such as:

* **Content categorization**: A linguistic-based document summary, including search and indexing, content alerts and duplication detection.
* **Topic discovery and modeling**: Accurately capture the meaning and themes in text collections, and apply advanced analytics to text, like optimization and forecasting.
* **Contextual extraction**: Automatically pull structured information from text-based sources.
* **Sentiment analysis**: Identifying the mood or subjective opinions within large amounts of text, including average sentiment and opinion mining.
* **Speech-to-text and text-to-speech conversion**: Transforming voice commands into written text, and vice versa.
* **Document summarization**: Automatically generating synopses of large bodies of text.
* **Machine translation**: Automatic translation of text or speech from one language to another.

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| --- |
| *NLP illustration* |

Q: What is Natural Language Processing?  
A: Natural Language Processing (NLP) refers to the Artificial Intelligence method that analyses natural human language to derive useful insights in order to solve problems.

AI Topics

Robotics

Robots are artificial agents acting in real-world environments. Robots are systems in which many artificial intelligence and software components work together. **Robotics** is a branch of AI, which is composed of Electrical Engineering, Mechanical Engineering, and Computer Science for designing, construction, and application of robots.

The robotics has been instrumental in the various domains such as:

* **Industries**: Robots are used for handling material, cutting, welding, color coating, drilling, polishing, etc.
* **Military**: Autonomous robots can reach inaccessible and hazardous zones during the war.
* **Medicine**: The robots are capable of carrying out hundreds of clinical tests simultaneously, rehabilitating permanently disabled people, and performing complex surgeries such as brain tumors.
* **Exploration**: The robot rock climbers used for space exploration, submarine vehicles used for ocean exploration are to name a few.
* **Entertainment**: Disney’s engineers have created hundreds of robots for movie making.

| **https://docs.google.com/uc?id=1lmKHqwB_kcxr80C8p6Q9Nv6_yFdfyxCP** |
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| *Robots building Tesla car.* |

Q: Explain the robotics domain of Artificial Intelligence.  
A: Robotics is a subset of AI, which includes different branches and application of robots. These Robots are artificial agents acting in a real-world environment. An AI Robot works by manipulating the objects in it’s surrounding, by perceiving, moving and taking relevant actions.