<div align="center">**Lecture 02**: writing a paragraph</div>
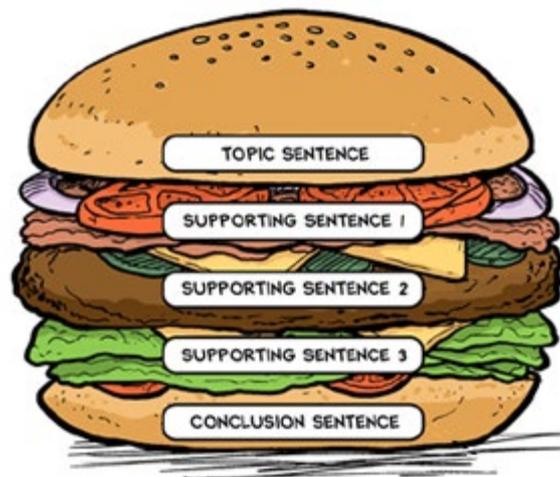
## Part two: paragraphs and punctuation marks

A paragraph is a group of 5 to 10 sentences put together. These sentences discuss a clear main subject.

### 1. Elements of a paragraph:

A paragraph starts with a **topic sentence** (main idea) and includes **supporting sentences** and finishes with a **concluding sentence**

1. **Topic sentence:** (main idea) introduces the topic and usually comes at the beginning of the paragraph.
2. **Supporting sentences:** (relevant information, explanation, examples) give details to develop the main idea.
3. **Concluding sentence:** (closing sentences) restates the main idea of the paragraph.

<div align="center">The burger structure of the paragraph</div>

As you can see in the scheme, a paragraph could have at least 3 supporting sentences (evidence/ examples)

**Example:**

"Researchers are conducting promising experiments on a variant called deep learning, and programs patterned after the very structure of the brain. Deep learning programs consist of layers of algorithms stacked atop each other. An input from one layer is then transmitted into the next, with each subsequent layer further processing the inputs. With this complex system, deep learning can easily recognize patterns and indulge in extremely high-level procedures higher than what we've seen thus far from normal machine learning programs"

### 2. Paragraph Outline

Planning/ selecting a topic: brainstorm ideas, determine important ideas, organize ideas, make an outline

Drafting: introduction, body, conclusion

Revising: editing and publishing

## 3. Characteristics of a good paragraph

A good paragraph has

**Clarity**

Preciseness is important in the paragraph, and you can achieve it by:

Selecting the correct words

Using simple language

**Unity**

Meaning that all the sentences in your paragraph must be discussing one main idea or tackling one subject with relevant topics

**Support**

The supporting ideas must be relevant to the main idea (providing details, explaining, persuading, giving examples….)

**Coherence**

A coherent paragraph is a well-organized one, and you can achieve that by using the conjunctions appropriately (chronological order, expressing addition, exemplifying, expressing contrast, concession, …)

**Good language**

Grammar accuracy is highly important or your readers will not be able to understand your writing. Good language includes spelling mistakes free writing, correct punctuation, apt vocabulary and sentence structure variety. Make sure you revise your writing and have it checked by experts in the field before publishing it.

## 4. Types of paragraph writing:

**Persuasive:** Depending on the type of document, it should persuade the reader to take action (e.g. follow-up on action items), support the work of the writer (e.g. proposals), appreciate the work of the writer (e.g. being persuaded that the writer has interesting and correct research results), or use a piece of software (e.g. a user guide or technical blog).

**Descriptive:** Descriptive writing, such as presenting a process, algorithm, or the output of these, should give the user an accurate sense of the purpose, workings, or function of what is being described. Descriptive writing may also explain the source or process by which data has been obtained or manipulated in order to achieve a certain result.

**Explanatory:** Explanatory writing attempts to communicate to the reader a new concept or process. One example of explanatory writing is tutorials. In code, descriptive writing explains the functionality of code, while explanatory writing covers why the code is important.

**Analytic:** Analytic writing describes the examination, subdivision, or proof of a concept, process or data. It can also deal with comparison and contrast. In computer science, these could include an analysis of time or space complexity, proof of correctness, or an examination of typical or pathological cases.

**Code:** code should follow the same characteristics as natural language: readable, clear in purpose, well-organized, and concise

## 5. Punctuation rules:

- Full stop (period) comes at the end of sentences **(.)**

- The letter that starts the new sentence after a full stop is always capital letter

- Question marks comes at the end of a question (questions are read with an intonation) **(?)**

- Exclamation marks come at the end of a sentence that express astonishment or very strong feelings **(!)**

- Comma listing (….,…..,….and….) joining two sentences **(,)**

- Colon introduce a list/ an explanation or extended quotation **(:)**

- Semi colon used to join two complete sentences into one sentence, further explanation **(;)**

- Capital letters are used with the start of a sentence, proper nouns, languages, months, names of countries/cities, beginning of quotations, I, days of the week.

- Abbreviations (Short ways of writing words and sentences) eg: visual object recognition (VOR)

- Quotation marks used to enclose a direct quotation **("")**

- Start a new paragraph when you want to start talking about another topic

- Use indentation and capital letter to start your paragraph

*Resources*

*Abdelhak English Farm. (2021, January 26). Paragraph Writing S1 :English Studies | The Steps Of Writing an Easy Paragraph [Video]. YouTube. https://www.youtube.com/watch?v=J0S88fqUB0o&t=911s*

*H¨am¨al¨ainen, W. (2006, September 6). Scientific Writing for Computer Science Students. Joensuu; Wilhelmiina H¨am¨al¨ainen.*

*Hacker, D., & Sommers, N. (2012). a pocket style manual (M. M. Clark, Ed.; 6th ed.) [Review of a pocket style manual]. Bedford/St. Martin's. https://www.wsfcs.k12.nc.us/cms/lib/NC01001395/Centricity/Domain/2407/A%20Pocket%20Style%20Manual%20-%20Diana%20Hacker.pdf (Original work published 2000)*

*Find more examples of academic writing in the others master's degrees in this link Items where Division is "Faculté des Sciences Exactes et des Sciences de la Nature et de la Vie > Département d'informatique" and Year is 2022 - University of Biskra Theses Repository (univ-biskra.dz)*

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**Activity 01:**

Write a topic sentence using the following prompts in each example:

………………………………………………………………………….. JavaScript enables interactive web pages and thus is an essential part of web applications. The vast majority of websites use it, and all major web browsers have a dedicated JavaScript engine to execute it.

…………………………………………………………………………….. Deep learning programs consist of layers of algorithms stacked atop each other. An input from one layer is then transmitted into the next, with each subsequent layer further processing the inputs. With this complex system, deep learning can easily recognize patterns and indulge in extremely high-level procedures higher than what we've seen thus far from normal machine learning programs"

………………………………………………………………………………………Andro development contains online instructional exercises on android application languages, for example, Java. Andro Development is for expert level developers and with respect to beginners and has focused on effortless. We use simple and supportive code case through which the reader can undoubtedly get it. The instructional exercises of this stage start from beginners level and move to expert level.

…………………………………………………………………………Machine learning can be defined as an ensemble of data analysis methods that automate analytical model building by using algorithms that iteratively learn from data. It enables computers to discover hidden insights without having to be explicitly programmed. It is concerned with the development of computer programs that can change in response to new data

**Activity 02:**

Write at least 3 supporting sentences for the following topic sentences:

Games are more than just a gateway into CS; they can also serve as long-term learning tools.

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In the last few years, image recognition based on visual content has become a very active topic in the pattern recognition domain.

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Cloud computing has brought a significant shift in the accessibility and utilization of robots.

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Robot Operating System (ROS) is an open-source meta-operating system that is widely used in robot application developments nowadays.

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**Activity 03:**

Organize the ideas to make a coherent paragraph:

1_ ◯ Then the signal is modulated using a suitable Modulation Technique (like PSK, FSK and QPSK, etc.),

◯ Channel Encoding is a technique that is applied to the signal to reduce the impairments like noise, interference, etc.

◯ So that the signal can be easily transmitted using the antenna.

◯ During this process, a small amount of redundancy is introduced to the signal so that it becomes robust against noise.

2_ ◯ Human-machine interface (HMI) is a component of certain devices that are capable of handling human-machine interactions.

◯ Human-machine interfaces help in integrating humans into complex technological systems.

◯ HMI technology has been used in different industries like electronics, entertainment, military, medical, etc

◯ The interface consists of hardware and software that allow user inputs to be translated as signals for machines that, in turn, provide the required result to the user.

**Activity 04:**

Add punctuation marks and capital letters where necessary in the following paragraph:

Facial recognition technology is rapidly spreading as it is entering fields like education home security and private industries this is an advantage given the number of cyber attacks the united states has undergone in recent months a breach of credit card information and social security numbers led to a nationwide panic and had millions of people doubting modern cyber security practices facial recognition is an almost guaranteed way to prevent this from happening again through online databases images of citizens faces are compiled and stored which are then compared to the images that are displayed through the technology harnessing this software which can be anything from an iphone to a security camera this is actually much less complex than that of fingerprint analysis or DNA all of which requiring much more difficult, and expensive software however as this tool advances the concern for privacy must remain at the forefront of development as ethics play an enormous role in the implementation of this breakthrough moreover the possibility of misreading one's face For example wearing a hat growing facial hair or any other major change in physical appearance can affect the technology's ability to accurately recognize you

**Activity 05:**

Write a paragraph persuading, describing, explaining or analyzing a topic that you are interested in

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