# Introduction to data types

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# Outlines

- What is a data type?
- Primitive data types
- Non-primitive data types

# What is a data type?

- A data type in programming defines both **type** and **size** of the data stored in the memory.
- The type may be **integer** types or **floating point** types.
- A size must be defined for the CPU to store the data into a specific memory locations.

# Primitive data types

- The primitive data types are those types given by the language.
- Each Primitive data type have a fixed size in the memory.
- There are two types of primitive data types:
  - **The integer data types:**
    - **Data types that store only integer values.**
    - The character data type (**char**).
    - The integer data type (**int**).
  - **The floating point data types**:
    - **Data types that store only floating point values.**
    - The float data type (**float**).
    - The double data type (**double**).

# Non-primitive data types

- The non-primitive data types are those implemented by the developer and inherited from the primitive ones.
- List of non-primitive data types:
  - **Structures**: It contains different types with specific allocated memory for each type
  - **Unions**: It contains different types with a shared memory space
  - **Enumerations**: It is used to represent numbers by text
  - **Arrays**: It is a repetition of any primitive or non-primitive type
  - **Pointers**: It holds the address of another primitive or non-primitive type
  - **Typedefs**: It is to define another names for the already existed primitive or non-primitive types

# Summary

- You have learned what is a data type in C programming
- You have learned about the primitive data types definition and its different types.
- You have learned about the non-primitive data types definition and its different types.