SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECB211 – Microcontroller Programming & Interfacing

II YEAR/ IV SEMESTER

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UNIT 3 – PIC PROGRAMMING IN C

TOPIC 4 – Data Serialization in C

Data Serialization in C

- Data serialization is the process of converting data structures or objects into a format that can be stored or transmitted and reconstructed later
- In C programming, data serialization is often done manually using functions to convert data into byte streams

Data Serialization in C

Basic Concepts

Serialization: Converting data into a format that can be stored or transmitted

Deserialization: Reconstructing data from its serialized format

Byte Stream: A sequence of bytes that represent the serialized data

Endianness: Refers to the order in which bytes are stored in memory. It can be big-endian or little-endian

Data Serialization in C
Serialization Techniques

Manual Serialization: Write custom functions to convert each data type into bytes and write them sequentially into a buffer.

Requires careful handling of endianness.

Example: Convert integers to their binary representation byte by byte and store them in an array

Using Structs: Define a struct that represents the data structure to be serialized. Use pointer arithmetic to access individual bytes.

Provides a structured way to organize data.

Requires careful alignment and padding considerations.

Types of Logical Operators

Conclusion

•Data serialization in C involves converting data structures into byte streams for storage or transmission

•Various techniques such as manual serialization and using structs can be employed depending on the complexity of the data and the requirements of the application

THANK YOU