Hewlett Packard Enterprise

Course Datasheet

Data Structure Using C Language

Education Services course product number – HPE-DSC-v1.0
Course length – 50 Hrs.
Delivery mode – Instructor Led Training (ILT)
Virtual Instructor Led Training (vILT)

In computer science, a data structure is a way of storing data in a computer so that it can be used efficiently. Often a carefully chosen data structure will allow a more efficient algorithm to be used. The choice of the data structure must begin from the choice of an abstract data structure.

Course Objective

The 50 hours training program will help the learner to explore various tools and techniques used by C programmers. On completion of the training, a learner will have good understanding on concepts of data types, control statements, function, structure, pointer, dynamic memory allocation, linked list, stacks, queues, sorting and searching.

Prerequisite

No experience required; basics of C Programming would be more helpful.

Course Modules

Chapter 01 – C History, Data Types and Operators

- C History, Data Types
- Storage Class
- Type Casting
- Operators and Types of Operators

Chapter 02 - Control Statements and Looping

- if, Switch, goto , break , continue
- for, while and do-while loop
- Nested loop

Chapter 03 – Functions in C

- Functions overview
- Types functions

- functions implementations

Chapter 04 – Structures

- Structure , Array of Structure
- Array within Structure , Nested Structure
- Self Referential Structure

Chapter 05 – Pointer and Dynamic Memory Allocation

- Declaration and Initialization of Pointer
- Pointer Expression, Scale Factor
- Constant Pointer , Generic Pointer
- Pointer with Array , String , Structure
- Malloc , calloc, free function for dynamic allocation

Chapter 06 – Introduction To Data Structures

- What Are Data Structures
- Need Of DataStructures
- Types Of Data Structures
- Implementation Of Data Structures

Chapter 07 – Built In Data Structures

- Arrays
- One Dimension Array
- Multi Dimension Array
- Matrices Operations

Chapter 08 – Linked List

- Building Linked List
- Traversing Linked List
- Insertion, Deletion In Linked List
- Searching And Sorting In Linked List
- Doubly Linked List

Chapter 09 – Stacks

- Representation Of Stacks
- Static Representation
- Dynamic Representation
- Uses Of Stack

Chapter 10 – Queues

- Implementation Of Queues
- Circular Queue
- DeQueue
- Uses Of Queue

Chapter 11 – Sorting And Searching

- Binary And Linear Searching
- Bubble Sort

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- Insertion Sort
- Selection Sort
- Quick Sort