Course Information-Data Structure

- Subject Outline
- Test Information

summary

Data structure is the subject of abstraction process necessary to reflect the physical values (data) measured or measured in daily life on the computer.A lot of electrical and electronic knowledge is required to store physical values inside the computer in electronic representation (electronic representation of binary digits).However, you will learn how to abstract data and conceptually represent it through data structures.Perhaps, at first, the reason or process for abstracting the data may be difficult.However, if you understand the principles and meaning of abstraction, the entire contents of the data structure course will be understood without difficulty.The data structure course helps you understand the basic materials and information of computer science.

Medium name

- Multimedia lesson

Service schedule

- Additional updates every Monday during the semester.

lecture content

- Multimedia lesson

Count	Lecture Topic	The details	Textbook Pages	Professor in charge
1	What is a data structure?	1.1.Data Structure Concepts 1.2.Computer Memory Management and Allocation 1.3.Data Abstraction 1.4.Computing Service Performance Analysis 1.5.Compute Service Performance Measurement	Chapter 1	Jeong Kwang Su

Count	Lecture Topic	The details	Textbook Pages	Professor in charge
2	Arrangement	2.1.Abstract Data Types of Arrays 2.2.Allocating Computer Memory in an Array 2.3.Application of Arrays 2.3.1.Representation and Use of Polynomials 2.3.2.Representation and Use of Matrix 2.3.3.Representation and utilization of string	Chapter 1	Jeong Kwang Su
3	Stack	3.1.Abstract Data Types in Stacks 3.2.Multiple Stacks and System Stacks 3.3.Application of the Stack 3.3.1.Representation and Application of Function Calls 3.3.2.Calculate and utilize formulas	Chapter 3	Jeong Kwang Su
4	Queue	4.1.Queue abstract data types 4.2.Queues for process scheduling 4.3.Application of Queues 4.3.1.Calculation and Use of Equations 4.3.2.Double queue	Chapter 4	Jeong Kwang Su
5	Linked list	5.1.Abstract data types in linked lists 5.2.Memory Access in the C Programming Language 5.3.Insert and delete nodes from the linked list	Chapter 5	Jeong Kwang Su
6	Application of the linked list	6.1.Connection stacks and queues 6.2.Expressions and calculations in formulas 6.3.Doubly linked list	Chapter 6	Jeong Kwang Su
7	tree	7.1.Tree 7.2.Terms and Expressions 7.3.Abstract data type 7.4.Binary Tree 7.5.Binary Tree Operations 7.6.Convert regular tree to binary tree	Chapter 7	Jeong Kwang Su
8	Extended Tree Structure (I)	8.1.Thread Tree 8.2.Thread Tree Implementation 8.3.Thread tree traversal, insert, delete	Chapter 8	Jeong Kwang Su

Count	Lecture Topic	The details	Textbook Pages	Professor in charge
9	Heap	9.1.Priority queues 9.2.Heap Abstract Data Types 9.3.Heap delete and insert operations	Chapter 9	Jeong Kwang Su
10	Number of Trees, Forests, Binary Trees	10.1.Selection Tree 10.2.Forest 10.3.Different number of binary trees	Chapter 10	Jeong Kwang Su
11	BS, Splay, AVL, BB	11.1.Binary Search Tree (BS Tree) 11.2.Balanced BS Trees (Splay, AVL, BB Tree)	Chapter 11	Jeong Kwang Su
12	Multiway Navigation Tree (I)	12.1.Member navigation tree 12.2.B tree 12.3.B *, B + Tree	Chapter 12	Jeong Kwang Su
13	Multiway Navigation Tree (II)	13.1.2-3 Tree 13.2.2-3-4 Tree 13.3.Red black tree	Chapter 13	Jeong Kwang Su
14	Graph (I)	14.1.Concepts and Terminology 14.2.Abstract data type 14.3.Graph representation	Chapter 14	Jeong Kwang Su
15	Graph (II)	15.1.Graph traversal 15.2.Minimum elongation tree	Chapter 15	Jeong Kwang Su

- Attendance class

division	Lecture Topic	The details	Textbook Pages	Lecture
1	Basic Concepts Arrays and Records (1)	-Data structures, algorithms, programs-abstract data types-abstract data types of arrays-representations of arrays-ordinal lists-polynomial abstract data types		lecture
2	Arrays and records (2)	-Sparse matrix abstract data type-string-record implementation		lecture
3	Stack and queue (1)	-Stack		lecture
4	Stack and queue (2)	-Queue-deck		lecture

division	Lecture Topic	The details	Textbook Pages	Lecture
5	Linked List (1)	-Nodes and pointers-pointers in C-simple linked list in C		lecture
6	Linked List (2)	-Free space List -Linked list stack and queue		lecture

Evaluation method and question range

Evaluation Type	Assessment Methods	Scope of question	Remarks
Attendance class	Short answer	Attendance class after each class attended by each local university (learning hall)	

Note: The above information is subject to change, so please refer to the academic bulletin.

references

- [1] Son Jin-gon, Kang Tae-won, Sung Hoon Lee, Jong Sun Hwang "Smart Data Structures for Smart Programmers", Iksa Jung, 2016