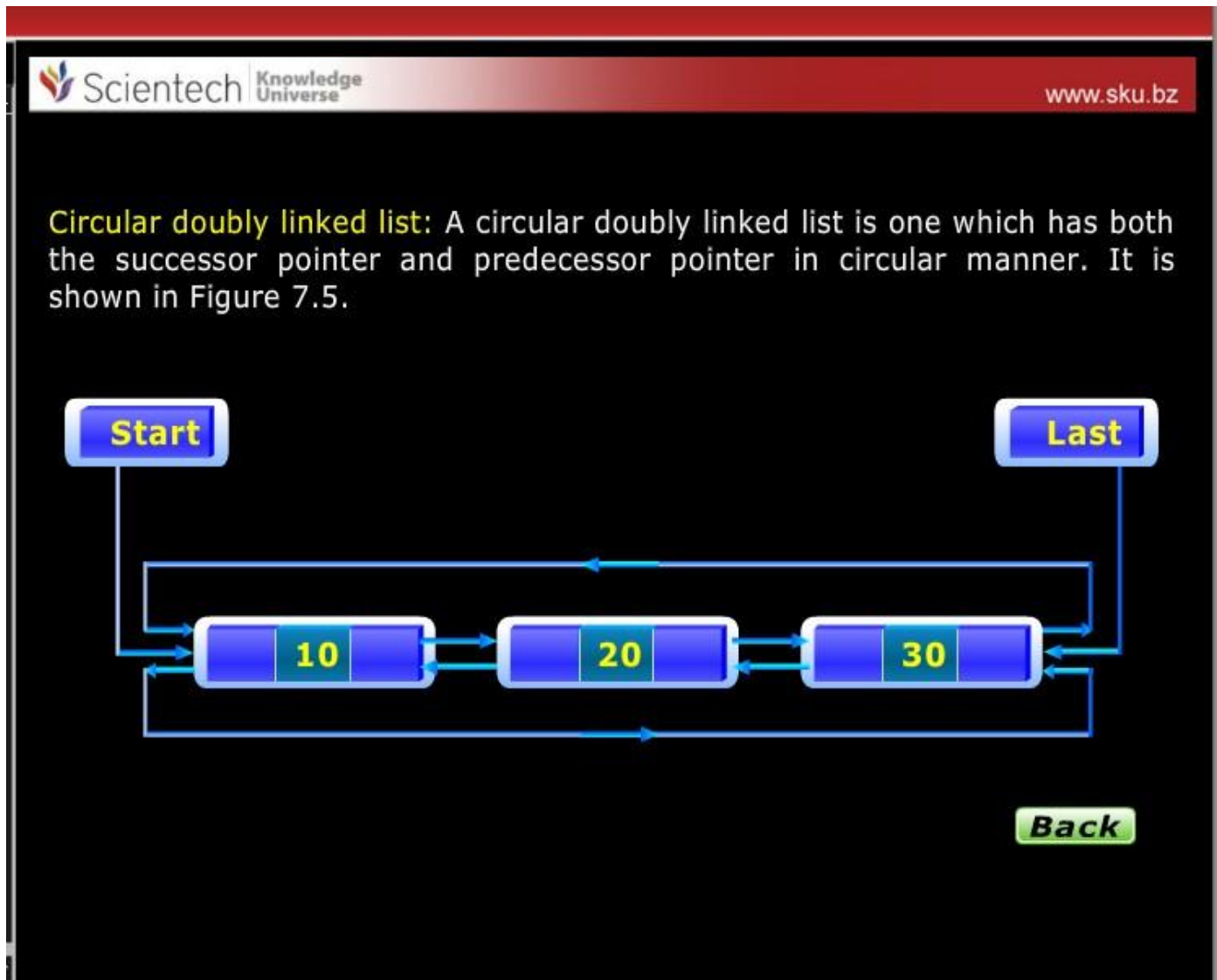


SKU-Data Structure

SKU-Data Structure is an online training course designed for the students of Computer Science. This is a self study package explains basic concepts in interesting and innovative manner with graphical user interface. Different topics are explained with flash animations, analogies and suitable illustrative examples. Interactive simulations are provided for clear understanding of the concepts. Frequently asked questions and quiz are provided with every topic for self evaluation of students. This course is suitable for Computer Science students.



Topics covered in SKU-Data Structure:

Array

Topics Covered: Array, Types of array, Implementation of Array, passing Array to function, Operation on Array.

Stack

Topics Covered: Stacks - their concepts and implementation, multiple stacks. Conversion of infix to postfix notation using stack, evaluation of postfix expression.

Structure

Topics Covered: Introduction to structure, Declaring structure, Array of structure.

Sorting

Topics Covered: Various sorting algorithms viz. bubble sort, selection sort, inserted sort, Quick sort, merge sort, shell sort address calculation sort and heap sort, tree sort, complexity of the algorithm.

Linked List

Topics Covered: linked list, implementation linked list, Key terms, Types of linked list, Operation on linked list.

Queue

Topics Covered: Queues their concepts and implementation, Queue terminology, Dqueue, Application of Queue.

The screenshot shows a web application titled "Sorting" with the URL www.sku.bz. At the top, there is a header with the Sciencetech Knowledge Universe logo. Below the header, the word "Sorting" is displayed in yellow. Underneath, there is a row of six grey boxes containing the numbers 54, 8, 19, 100, 39, and 64. Below this row, there are two rows of red boxes. The first row is labeled "Sorting in ascending order" and contains the numbers 8, 19, 39, 54, 64, and 100. The second row is labeled "Sorting in descending order" and is currently empty.

The screenshot shows a web application titled "Linked lists" with the URL www.sku.bz. At the top, there is a header with the Sciencetech Knowledge Universe logo. Below the header, the word "Linked lists" is displayed in yellow. Underneath, there is a paragraph of text: "Linked lists are special list of some data elements linked to one another. The logical ordering is represented by having each element pointing to the next element. Each element is called a node, which has two parts. INFO part which stores the information and pointer which points to the next element." Below the text, there is a diagram showing two "Start" boxes pointing to "Node" boxes. The first "Node" box is divided into "Num" and "Ptr" sections. The second "Node" box is divided into "30" and "/0" sections.

Sciencetech Knowledge Universe www.sku.bz

Elements without Sorting

14 63 50 7 160
Third pass (with Bubble sort)

a[0] 14
a[1] 7
a[2] 50
a[3] 63
a[4] 160

Compare 14 > 7
They will swap

Sciencetech Knowledge Universe www.sku.bz

Insertion in Array Animation

Insertion of an element working of insert(x, y) function(x is position of element and y is data for the element)

21 23 24 0 0
0 1 2 3 4

Shift elements from second position onwards to right

Sciencetech Knowledge Universe www.sku.bz

Addition of a node at the end in the list

20 57 71 48 N
400 100 900 200

Linked list already contains four nodes

Sciencetech Knowledge Universe www.sku.bz

Building a Queue

27 15 69 21 52 90 18 33

Front Rear

Addition of 33 to Queue, rear would point to 33