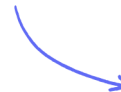


2.5 Object Oriented Languages

Classes (OOP) / Objects (OOP) / Methods (OOP) / Attributes (OOP) / Inheritance (OOP) / Encapsulation (OOP) / Polymorphism (OOP)

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Total Marks

/10

- 1 An object oriented system is implemented to organise further information about each worker's attendance. Classes, objects, methods and attributes are used in this system.

State the meaning of each of the following terms:

- Object
- Method
- Attribute

(3 marks)

- 2 Barney is writing a program to store data in a linked list. He is writing the initial program for a maximum of 10 data items.

Each node in the linked list has a data value and a pointer (to the next item).

A null pointer is stored with the value -1

Barney wants the nodes to be stored as objects using object-oriented programming. He designs the following class.

class: node

attributes: private
data : Real
private pointer : Integer

methods:

new (newData, newPointer)

getData()

getPointer()

setData(newData)

setPointer(newPointer)

The constructor assigns the parameters to the attributes to create an object

The class node, uses get methods and set methods.

Describe one difference between **get** methods and **set** methods.

(2 marks)

- 3 A business uses an array with the identifier **wNames** to store workers' names. A variable with the identifier **top** is used to store the index of the last element to be added to the array, which is also the element which will next be removed.

wNames

0	1	2	3	4	5	6
Kirstie	Martyn	Louise	Alex	Anna		

top

4

An object oriented system is implemented to organise further information about each worker's attendance. Classes, objects, methods and attributes are used in this system.

Each worker has a name and an attendance figure which can be between 0 and 100.

Write a definition for a fully encapsulated customer class, providing both get and set methods for all attributes. You do not have to write code for the constructor method.

(5 marks)