12th STD

Reg. No. □□□□□□□

PUBLIC EXAMINATION - MARCH 2024

PART - III

Time Allowed : 3.00 Hours] **COMPUTER SCIENCE (with Answers)** [Maximum Marks : 70

Instructions :

1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.

2) Use **Blue** or **Black** ink to write and underline and pencil to draw diagrams

PART - I

Note : (i) **Answer all** the questions. **(15×1=15)**

(ii) Choose the most appropriate answer from the given **four** alternatives and write the option code and the corresponding answer.

1. Which of the following is used to describe the worst case of an algorithm?
(a) Big W (b) Big A (c) Big O (d) Big S

2. The datatype whose representation is unknown are calles as :
(a) Concrete datatype (b) Built-in datatype
(c) Abstract datatype (d) Derived datatype

3. Which key is pressed to execute Python Script?
(a) F1 (b) F5 (c) F3 (d) F2

4. Which of the following defines what an object can do?
(a) Interface (b) Operating System
(c) Interpreter (d) Compiler

5. Which of the following security technique that regulates who can view or use resources in a computing environment?
(a) Access control (b) Password
(c) Certification (d) Authentication

6. Which of the following is the Slicing Operator?
(a) < > (b) { } (c) ( ) (d) [ ]

7. In Python the process of creating an object is called as ___________.
(a) Initialize (b) Constructor
(c) Instantiation (d) Destructor

8. Pick the correct one to execute the given statement successfully.
If _______ : print(x, "is a leap year")
(a) x / 4 = 0 (b) x % 2 = 0
(c) x % 4 = 0 (d) x % 4 == 0

9. What symbol is used for SELECT statement?
(a) X (b) σ (c) Ω (d) Π

10. If List=[10,20,30,40,50] then List[2]=35 will result:
(a) [10,20,35,40,50]
(b) [35,10,20,30,40,50]
(c) [10,35,30,40,50]
(d) [10,20,30,40,50, 35]

11. A CSV file is also known as a ________.
(a) String File (b) Flat File
(c) Random File (d) 3D File

12. The most commonly used statement in SQL is :
(a) execute (b) cursor
(c) commit (d) select

13. What is the output of the following snippet in Python?

```
for x in range (5):
   if x == 2 :
      continue
   print(x, end=' ')
```

(a) 0 1 3 4 (b) 0 1 2
(c) 0 1 2 3 4 (d) 0 1 2 3

14. ________ is a collection of resources assembled to create a single unified visual display.
(a) Objects (b) Interface
(c) Graphics (d) Dashboard

15. The clause used to sort data in a database :
(a) GROUP BY (b) SORT BY
(c) SELECT (d) ORDER BY

PART - II

Note : Answer **any six** questions. Question No. **24** is **compulsory**. **6 × 2 = 12**

16. What is abstract data type?

17. What are the different operators that can be used in Python?

18. What is searching? Write its types.

19. Write the diffvery types of function.

20. List the types of visualizations in Matplotlib.

21. What is the difference between Hierarchical and Network data model?

22. What is CSV file?

23. Which method is used to fetch all rows from the database table?

24. Write the use of pop( ) function in Python.

PART - III

Note : Answer **any six** questions. Question No. **33** is **compulsory. 6 × 3 = 18**

25. Differentiate pure and impure function.

26. What are the different ways to access the elements of a list? Give example.

27. Write a note on Asymptotic notation.

28. Using if..else..elif statement write a suitable program to display largest of 3 numbers.

29. Write a short note for the followings with suitable example. (a) capitalize( ) (b) swapcase( )

30. How will you define Construtor and Destructor in Python?

31. What are the applications of scripting language?

32. What is the use of Where clause? Give a Python statement by using Where clause.

33. Write short notes on TCL Commands in SQL.

PART - IV

Note : Answer **all the questions:** 5 × 5 = 25

34. (a) How will you facilitate data abstraction? Explain it with suitable example. **(OR)**

(b) What is Binary Search? Explain it with example.

35. (a) Explain input( ) and print( ) functions with examples. **(OR)**

(b) Explain the scope of variables with an example.

36. (a) What is purpose of range( ) function? Explain with an example. **(OR)**

(b) Explain the following operators in Relational algebra with suitable examples.

(i) UNION (ii) INTERSECTION
(iii) DIFFERENCE
(iv) CARTESIAN PRODUCT

37. (a) What are the components of SQL? Write the commands for each. **(OR)**

(b) Discuss the features of Python over C++.

38. (a) Write the different methods to read a file in Python. **(OR)**

(b) Explain the various buttons in a matplotlib window.

ANSWER

PART - I

1.	(c)	Big O	**2.**	(c)	Abstract datatype
3.	(b)	F5	**4.**	(a)	Interface
5.	(a)	Access control	**6.**	(d)	[ ]
7.	(c)	Instantiation	**8.**	(d)	x % 4 == 0
9.	(b)	σ	**10.**	(a)	[10, 20, 35, 40, 50]
11.	(b)	Flat File	**12.**	(d)	select
13.	(a)	0 1 3 4	**14.**	(d)	Dashboard
15.	(d)	ORDER BY			

PART - II

16. (i) Abstract Data type (ADT) is a type for objects whose behavior is defined by a set of values and operations.

(ii) The definition of ADT only mentions what operations are to be performed but not how these operations will be implemented.

17. (i) In computer programming languages operators are special symbols which represent computations, conditional matching etc.

(ii) Operators are categorized as Arithmetic, Relational, Logical, Assignment etc.

18. A searching algorithm is the step-by-step procedure used to locate specific data among a collection of data. There are two type of searching are (i) Linear Search (ii) Binary Search

19. **Types of Function:**

(i) User - defined functions.
(ii) Built in functions. (iii) Lambda functions.
(iv) Recursion functions.

20. There are many types of Visualizations under Matplotlib. Some of them are :

(i) Line plot (ii) Scatter plot
(iii) Histogram (iv) Box plot
(v) Bar chart and (vi) Pie chart

21.

Hierarchical data model	Network data model
In Hierarchical model, a child record has only one parent node	In a Network model, a child may have many parent nodes.
It Hierarchical model, data is represented as a simple tree like structure form.	It represents the data in many-to-many relationships.

22. (i) A CSV file is a human readable text file where each line has a number of fields, separated by commas or some other delimiter.

(ii) A CSV file is also known as a Flat File.

23. The fetchall() method is used to fetch all rows from the database table. Eg : result = cursor.fetchall()

24. pop( ) function can also be used to delete an element using the given index value. pop( ) function deletes and returns the last element of a list if the index is not given.

PART - III

25.

S. No.	Pure	Impure
(i)	The return value of the pure functions solely depends on its arguments passed.	The return value of the impure functions does not solely depend on its arguments passed.
(ii)	They do not have any side effects.	They have side effects. **Eg:** random(), Date().
(iii)	They do not modify the arguments which are passed to them	They may modify the arguments which are passed to them

26. (i) The elements of a list can be accessed in two ways. The first way is via our familiar method of multiple assignment, which unpacks a list into its elements and binds each element to a different name.

```
lst := [10, 20]
x, y := lst
```

(ii) In the above example x will become10 and y will become 20.

(iii) A second method for accessing the elements in a list is by the element selection operator. Unlike a list literal, a square-brackets expression directly following another expression does not evaluate to a list value, but instead selects an element from the value of the preceding expression.

```
lst[0]
10
lst[1]
20
```

27. Asymptotic Notations are languages that uses meaningful statements about time and space complexity. The following three asymptotic notations are mostly used to represent time complexity of algorithms:

(i) **Big O :** Big O is often used to describe the worst-case of an algorithm.

(ii) **Big Ω :** Big Omega is the reverse Big O, if Bi O is used to describe the upper bound (worst - case) of a asymptotic function, Big Omega is used to describe the lower bound (best-case).

(iii) **Big Θ :** When an algorithm has a complexity with lower bound = upper bound, say that an algorithm has a complexity O (n log n) and Ω (n log n), it's actually has the complexity Θ (n log n), which means the running time of that algorithm always falls in n log n in the best-case and worst-case.

28. **Code :**

```
n1=int(input(:Enter the first number:"))
n2=int(input("Enter the second number:"))
n3=int(input(:Enter the third number:"))
if(n1?=n2)and(n1>=n3):
    biggest=n1;
elif(n2>=n1)and (n2>=n3):
    biggest=n2
else:
    biggest=n3
print("The biggest number
        between",n1,",",n2,"and",n3,"is",biggest)
```

Output :

```
Enter the first number:1
Enter the second number:3
Enter the third number:5
The biggest number between 1,3 and 5 is 5
```

29.

Syntax	Description	Example

(a) capitalize( )	Used to capitalize the first character of the string	>>> city="chennai"
		>>> print(city.capitalize())
		Chennai

(b) swapcase( )	It will change case of every character to its opposite case vice-versa.	>>> str1="tAmiL NaDu"
		>>> print(str1.swapcase())
		TaMIl nAdU

30. **Constructor :**

(i) Constructor is the special function that is automatically executed when an object of a class is created. In Python, there is a special function called "init" which act as a Constructor.

(ii) It must begin and end with double underscore.

General format of constructor :

General format of _ _init_ _ method (Constructor function)

```
def _ _init_ _(self, [args ……..]):
<statements>
```

Destructor :

(i) Destructor is also a special method to destroy the objects.

(ii) In Python, _ _del_ _( ) method is used as destructor. It is just opposite to constructor.

31. **Applications of Scripting Languages :**

1. To automate certain tasks in a program
2. Extracting information from a data set
3. Less code intensive as compared to traditional programming language
4. can bring new functions to applications and glue complex systems together

32. The WHERE clause is used to extract only those records that fulfill a specified condition.

Example : To display the different grades scored by male students from "student table"

```
import sqlite3
connection = sqlite3.connect("Academy.db")
cursor = connection.cursor()
cursor.execute("SELECT       DISTINCT(Grade)
               FROM student where gender='M'")
result = cursor.fetchall()
print(*result,sep="\n")
```

OUTPUT:

```
('B',)
('A',)
('C',)
('D',)
```

33. (i) **Commit :** Saves any transaction into the database permanently.

(ii) **Roll back :** Restores the database to last commit state.

(iii) **Save point :** Temporarily save a transaction so that you can rollback.

PART - IV

34. **(a)** Data abstraction is used to define an Abstract Data Type (ADT), which is a collection of constructors and selectors. To facilitate data abstraction, you will need to create two types of functions: Constructors and Selectors

Constructors :

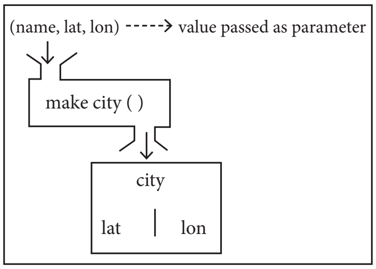
(i) Constructors are functions that build the abstract data type.

(ii) Constructors create an object, bundling together different pieces of information.

(iii) For example, say you have an abstract data type called city.

(iv) To create a city object, you'd use a function like city = makecity (name, lat, lon).

(v) Here makecity (name, lat, lon) is the constructor which creates the object city.



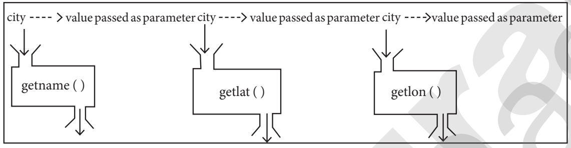
Constructor

Selectors :

(i) Selectors are functions that retrieve information from the data type.

(ii) Selectors extract individual pieces of information from the object.

(iii) To extract the information of a city object, you would used functions like
getname(city),
getlat(city),
getlon(city)
These are the selectors because these functions extract the information of the city object.


city ----> value passed as parameter
city ----> value passed as parameter
city ---> value passed as parameter
getname ( )
getlat ( )
getlon ( )

(OR)

(b) **Binary search :** Binary search also called half-interval search algorithm. It finds the position of a search element within a sorted array.

Procedure for Binary search :

(1) Start with the middle element

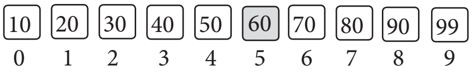
(2) When a match is found, display success message with the index of the element matched.

(3) If no match is found for all comparisons, then display unsuccessful message.

Binary Search Working principles :

(i) List of elements in an array must be sorted first for Binary search. The following example describes the step by step operation of binary search.

(ii) Consider the following array of elements, the array is being sorted so it enables to do the binary search algorithm. Let us assume that the search element is 60 and we need to search the location or index of search element 60 using binary search.

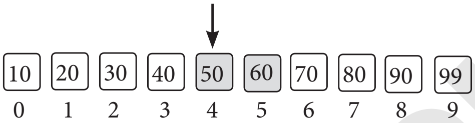


10	20	30	40	50	60	70	80	90	99
0	1	2	3	4	5	6	7	8	9

(iii) First, we find index of middle element of the array by using this formula :

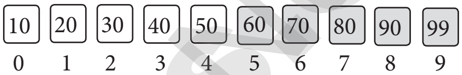
mid = low + (high - low) / 2

(iv) Here it is, 0 + (9 - 0) / 2 = 4 (fractional part ignored). So, 4 is the mid value of the array.



10	20	30	40	50	60	70	80	90	99
0	1	2	3	4	5	6	7	8	9

(v) Now compare the search element with the value stored at mid value location 4. The value stored at location or index 4 is 50, which is not match with search element. As the search value 60 is greater than 50.

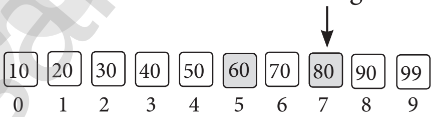


10	20	30	40	50	60	70	80	90	99
0	1	2	3	4	5	6	7	8	9

(vi) Now we change our low to mid + 1 and find the new mid value again using the formula.

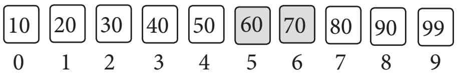
low = mid + 1
mid = low + (high - low) / 2

(vii) Our new mid is 7 now. We compare the value stored at location 7 with our target value 60.



10	20	30	40	50	60	70	80	90	99
0	1	2	3	4	5	6	7	8	9

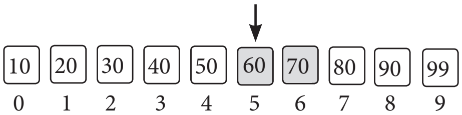
(viii) The value stored at location or index 7 is not a match with search element, rather it is more than what we are looking for. So, the search element must be in the lower part from the current mid value location



10	20	30	40	50	60	70	80	90	99
0	1	2	3	4	5	6	7	8	9

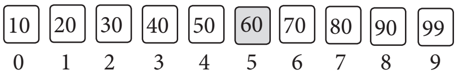
(ix) The search element still not found. Hence, we calculated the mid again by using the formula.

high = mid -1
mid = low + (high - low)/2
Now the mid value is 5.



10	20	30	40	50	60	70	80	90	99
0	1	2	3	4	5	6	7	8	9

(x) Now we compare the value stored at location 5 with our search element. We found that it is a match.



10	20	30	40	50	60	70	80	90	99
0	1	2	3	4	5	6	7	8	9

(xi) We can conclude that the search element 60 is found at location or index 5. For example if we take the search element as 95, For this value this binary search algorithm return unsuccessful result.

35. (a) **Input and Output Functions :** A program needs to interact with the user to accomplish the desired task; this can be achieved using

Input-Output functions. The input() function helps to enter data at run time by the user and the output function print() is used to display the result of the program on the screen after execution.

The input() function :

(i) In Python, input( ) function is used to accept data as input at run time. The syntax for input() function is,

```
Variable = input (“prompt string”)
```

(ii) Where, prompt string in the syntax is a statement or message to the user, to know what input can be given.

(iii) If a prompt string is used, it is displayed on the monitor; the user can provide expected data from the input device. The input( ) takes whatever is typed from the keyboard and stores the entered data in the given variable.

(iv) If prompt string is not given in input( ) no message is displayed on the screen, thus, the user will not know what is to be typed as input.

(v) **Example 1 :** input( ) with prompt string

```
>>> city=input (“Enter Your City: ”)
 Enter Your City: Madurai
>>> print (“I am from “, city)
 I am from Madurai
```

(vi) **Example 2 :** input( ) without prompt string

```
>>> city=input()
      Madurai
>>> print ("I am from", city)
      I am from Madurai
```

(vii) Note that in example-2, the input( ) is not having any prompt string, thus the user will not know what is to be typed as input. If the user inputs irrelevant data as given in the above example, then the output will be unexpected. So, to make your program more interactive, provide prompt string with input( ).

(viii)The input ( ) accepts all data as string but not as numbers. If a numerical value is entered, the input values should be explicitly converted into numeric data type. The int( ) function is used to convert string data as integer data explicitly.

(ix) **Example 3 :**

```
x = int (input(“Enter Number 1: ”))
y = int (input(“Enter Number 2: ”))
print (“The sum = ”, x+y)
```

Output :

```
Enter Number 1: 34
Enter Number 2: 56
The sum = 90
```

The print() function :

(i) In Python, the print() function is used to display result on the screen. The syntax for print() is as follows :

(ii) **Example :**

```
print (“string to be displayed as output ” )
print (variable )
print (“String to be displayed as output ”, variable)
print (“String1 ”, variable, “String 2”, variable, “String 3” ……)
```

(iii) **Example :**

```
>>> print (“Welcome to Python Programming”)
      Welcome to Python Programming
>>> x = 5
>>> y = 6
>>> z = x + y
>>> print (z)
      11
>>> print (“The sum = ”, z)
      The sum = 11
>>> print (“The sum of ”, x, “ and ”, y, “ is ”, z)
      The sum of 5 and 6 is 11
```

(iv) The print ( ) evaluates the expression before printing it on the monitor.

(v) The print () displays an entire statement which is specified within print ( ). Comma (,) is used as a separator in print ( ) to print more than one item.

(OR)

(b) Scope of variable refers to the part of the program, where it is accessible, i.e., area where the variables refer (use). The scope holds the current set of variables and their values. The two types of scopes - local scope and global scope.

Local Scope : A variable declared inside the function's body is known as local variable.

Rules of local variable :

(i) A variable with local scope can be accessed only within the function that it is created in.

(ii) When a variable is created inside the function the variable becomes local to it.

(iii) A local variable only exists while the function is executing.

(iv) The formal parameters are also local to function.

(v) Example: Create a Local Variable

```
def loc():
  y=0 # local scope
  print(y)
loc()
```

Output:

```
0
```

Global Scope : A variable, with global scope can be used anywhere in the program. It can be created by defining a variable outside the scope of any function.

Rules of global Keyword :

The basic rules for global keyword in Python are:

(i) When we define a variable outside a function, it's global by default. You don't have to use global keyword.

(ii) We use global keyword to modify the value of the global variable inside a function.

(iii) Use of global keyword outside a function has no effect.

Example : Accessing global Variable From Inside a Function

```
c = 1        # global variable
def add():
                print(c)
                add()
```

Output:

```
1
```

36. (a) The range( ) is a function used to generate a series of values in Python. Using range ( ) function, you can create list with series of values. The range( ) function has three arguments.

Syntax of range ( ) function:

range (start value, end value, step value)

where,

(i) **start value** – beginning value of series. Zero is the default beginning value.

(ii) **end value** – upper limit of series. Python takes the ending value as upper limit – 1.

(iii) **step value** – It is an optional argument, which is used to generate different interval of values.

Example: Generating whole numbers upto 10

```
for x in range (1, 11):
    print(x)
```

Output :

```
1
2
3
4
5
6
7
8
9
10
```

Creating a list with series of values :

(i) Using the range( ) function, a list can be created with series of values. To convert the result of range( ) function into list, one more function called list ( ). The list() function makes the result of range( ) as a list.

(ii) **Syntax:** *List_Varibale = list (range ( ))*

(iii) **Example :**

```
>>> Even_List = list(range(2,11,2))
>>> print(Even_List)
```

Output : [2, 4, 6, 8, 10]

(iv) In the above code, list( ) function takes the result of range( ) as Even_List elements. Thus, Even_List list has the elements of first five even numbers.

Similarly, we can create any series of values using range( ) function. The following example explains how to create a list with squares of first 10 natural numbers.

Example : Generating squares of first 10 natural numbers

```
squares = [ ]
for x in range(1,11):
        s = x ** 2
        squares.append(s)
print (squares)
```

Output : [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]

(OR)

(b) (i) UNION (Symbol : ∪) :

(i) It includes all tuples that are in tables A or in B. It also eliminates duplicates. Set A Union Set B would be expressed as A ∪ B

(ii) **Example**

Consider the following tables

Table A	
Stud no	**Name**
cs1	Kannan
cs2	Lenin
cs3	Padmaja

Table B	
Stud no	**Name**
cs1	Kannan
cs2	GowriShakaran
cs3	Lenin

Result :

Table A ∪ B	
Stud no	**Name**
cs1	Kannan
cs2	GowriShankaran
cs3	Lenin
cs4	Padmaja

(ii) INTERSECTION (symbol : ∩) A ∩ B :

(i) Defines a relation consisting of a set of all tuple that are in both in A and B. However, A and B must be union-compatible.

(ii) **Example 5 (using Table B)**

Table A ∩B	
cs1	Kannan
cs3	Lenin

(iii) SET DIFFERENCE (Symbol : −) :

(i) The result of A – B, is a relation which includes all tuples that are in A but not in B.

(ii) The attribute name of A has to match with the attribute name in B.

(iii) **Example 4 (using Table B) :**

Result :

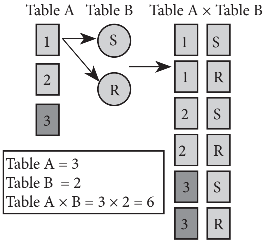
Table A – B	
cs4	Padmaja

(iv) PRODUCT OR CARTESIAN PRODUCT (Symbol : X)

(i) Cross product is a way of combining two relations. The resulting relation contains, both relations being combined.

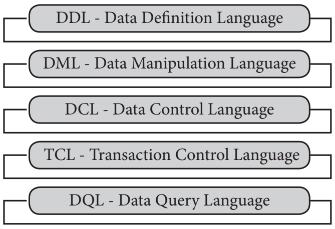
(ii) A × B means A times B, where the relation A and B have different attributes.

(iii) This type of operation is helpful to merge columns from two relations.



Cartesian Product

37. (a) **Components of SQL :** SQL commands are divided into five categories:



DDL - Data Definition Language

DML - Data Manipulation Language

DCL - Data Control Language

TCL - Transaction Control Language

DQL - Data Query Language

Data Definition Language :

(i) The Data Definition Language (DDL) consist of SQL statements used to define the database structure or schema.

(ii) It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in databases.

(iii) SQL commands which comes under Data Definition Language are :

Create	To create tables in the database.
Alter	Alters the structure of the database.
Drop	Delete tables from database.
Truncate	Remove all records from a table, also release the space occupied by those records.

Data Manipulation Language :

(i) A Data Manipulation Language (DML) is a query language used for adding (inserting), removing (deleting), and modifying (updating) data in a database.

(ii) SQL commands which comes under Data Manipulation Language are :

Insert	Inserts data into a table
Update	Updates the existing data within a table.
Delete	Deletes all records from a table, but not the space occupied by them.

Data Control Language :

(i) A Data Control Language (DCL) is a programming language used to control the access of data stored in a database. It is used for controlling privileges in the database (Authorization).

(ii) SQL commands which come under Data Control Language are :

Grant	Grants permission to one or more users to perform specific tasks.
Revoke	Withdraws the access permission given by the GRANT statement.

Transactional Control Language :

(i) Transactional control language (TCL) commands are used to manage transactions in the database.

(ii) SQL command which come under Transfer Control Language are :

Commit	Saves any transaction into the database permanently.
Roll back	Restores the database to last commit state.
Save point	Temporarily save a transaction so that you can rollback.

Data Query Language :

(i) The Data Query Language consist of commands used to query or retrieve data from a database.

(ii) One such SQL command in Data Query Language is

Select	It displays the records from the table.

(OR)

(b) **Features of Python over C++ :**

(i) Python uses Automatic Garbage Collection whereas C++ does not.

(ii) C++ is a statically typed language, while Python is a dynamically typed language.

(iii) Python runs through an interpreter, while C++ is pre-compiled.

(iv) Python code tends to be 5 to 10 times shorter than that written in C++.

(v) In Python, there is no need to declare types explicitly where as it should be done in C++

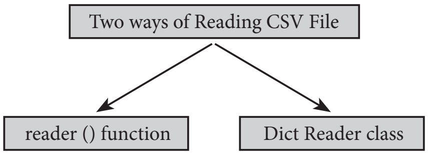
(vi) In Python, a function may accept an argument of any type, and return multiple values without any kind of declaration beforehand. Whereas in C++ return statement can return only one value.

38. (a) **Read a CSV File Using Python :**

There are two ways to read a CSV file.

(i) Use the csv module's reader function

(ii) Use the DictReader class.



Two ways of Reading CSV File

reader () function

Dict Reader class

CSV Module's Reader Function :

(i) You can read the contents of CSV file with the help of csv.reader() function. The reader function is designed to take each line of the file and make a list of all columns.

(ii) Using this function one can read data from csv files of different formats like quotes (" "), pipe (|) and comma (,).

The syntax for csv.reader() is

csv.reader(fileobject,delimiter,fmtparams)

where

(iii) **file object :** passes the path and the mode of the file

(iv) **delimiter:** an optional parameter containing the standard dilects like , | etc can be omitted.

(v) **fmtparams :** optional parameter which help to override the default values of the dialects like skipinitialspace,quoting etc. can be omitted.

Program :

```
#importing csv
import csv
#opening the csv file which is in different location
    with read mode
with open('c:\pyprg\sample1.csv', 'r',
                                    newline'=') as F:
#other way to open the file is f= ('c:\\pyprg\\
                                    sample1.csv', 'r')
reader = csv.reader(F)
# printing each line of the Data row by row
for row in order
    print(row)
F.close()
```

Output :

```
['SNO', 'NAME', 'CITY']
['12101', 'RAM', 'CHENNAI']
['12102', 'LAVANYA', 'TIRUCHY']
['12103', 'LAKSHMAN', 'MADURAI']
```

Reading CSV File Into A Dictionary :

(i) To read a CSV file into a dictionary can be done by using DictReader method of csv module which works similar to the reader() class but creates an object which maps data to a dictionary.

(ii) The keys are given by the fieldnames as parameter. DictReader works by reading the first line of the CSV and using each comma separated value in this line as a dictionary key. The columns in each subsequent row then behave like dictionary values and can be accessed with the appropriate key (i.e. fieldname).

(iv) The main difference between the csv.reader() and DictReader() is in simple terms csv.reader and csv.writer work with list/tuple, while csv.DictReader and csv.DictWriter work with dictionary. csv.DictReader and csv.DictWriter take additional argument fieldnames that are used as dictionary keys.

For Example Reading "sample8.csv" file into a dictionary

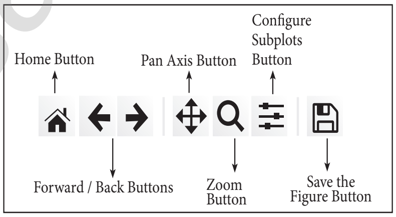
```
    import csv
    filename = 'c:\pyprg\sample8.csv'
    input_file =csv.
                DictReader(open(filename,'r'))
for row in input_file:
    print(dict(row))        #dict() to print data
```

Output :

```
{'ItemName ': 'Keyboard ', 'Quantity': '48'}
{'ItemName ': 'Monitor', 'Quantity': '52'}
{'ItemName ': 'Mouse ', 'Quantity': '20'}
```

(OR)

(b) Buttons in the output : In the output figure, you can see few buttons at the bottom left corner. Let us see the use of these buttons.



(i) **Home Button** → The Home Button will help once you have begun navigating the chart. If you ever want to return back to the original view, you can click on this.

(ii) Forward/Back buttons → These buttons can be used like the Forward and Back buttons in browser. Click these to move back to the previous point you were at, or forward again.

(iii) Pan Axis → This cross-looking button allows you to click it, and then click and drag graph around.

(iv) Zoom → The Zoom button lets you click on it, then click and drag a square that you would like to zoom into specifically. Zooming in will require a left click and drag. Zoom out with a right click and drag.

(v) Configure Subplots → This button allows you to configure various spacing options with your figure and plot.

(vi) Save Figure → This button will allow you to save figure in various forms.

❁❁❁❁❁