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**PUBLIC EXAMINATION-2024**

**STD: XII**

**TENTATIVE ANSWER KEY**

**DATE :08.03.24**

**SUBJECT: COMPUTER SCIENCE**

**MARKS : 70**

Q. NO	CONTENT	MARK
	<b>PART-I</b>	<b>15X1=15</b>
	<b>CHOOSE THE CORRECT ANSWER:</b>	
1	C) Big O	1
2	c) Abstract datatype	1
3	b) F5	1
4	a) Interface	1
5	a) Access control	1
6	d) []	1
7	c) Instantiation	1
8	d) x%4==0	1
9	b) $\sigma$	1
10	a) [10,20,35,40,50]	1
11	b)Flat File	1
12	d)select	1
13	a)0 1 3 4	1
14	d)Dash board	1
15	d)ORDER BY	1
	<b>PART - II</b>	<b>6X2=12</b>
16	<ul style="list-style-type: none"> <li>❖ Abstract Data type (ADT) is a type (or class) for objects whose behavior is defined by a set of value and a set of operations.</li> <li>❖ The process of providing only the essentials and hiding the details is known as abstraction.</li> <li>❖ Abstraction provides modularity (modularity means splitting a program in to many modules). Classes (structures) are the representation for "Abstract Data Types", (ADT).</li> </ul>	2

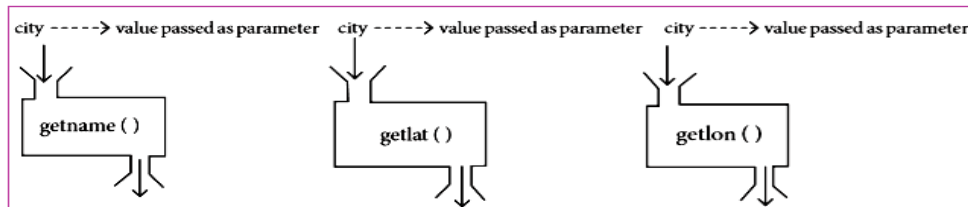
17	<ul style="list-style-type: none"> <li>❖ Arithmetic operators</li> <li>❖ Relational or Comparative operators</li> <li>❖ Logical operators</li> <li>❖ Assignment operators</li> <li>❖ Conditional operator</li> </ul>	2	
18	<ul style="list-style-type: none"> <li>❖ Searching is designed to check for an element or retrieve an element from any data structure where it is stored.</li> </ul> <p><b>Types:</b></p> <ul style="list-style-type: none"> <li>❖ Linear (or) sequential search</li> <li>❖ Binary (or) half interval search</li> </ul>	2	
19	<ul style="list-style-type: none"> <li>❖ User-defined functions</li> <li>❖ Built-in functions</li> <li>❖ Lambda functions</li> <li>❖ Recursion functions</li> </ul>	2	
20	<ul style="list-style-type: none"> <li>❖ Line plot</li> <li>❖ Scatter plot</li> <li>❖ Histogram</li> <li>❖ Box plot</li> <li>❖ Bar chart</li> <li>❖ Pie chart</li> </ul>	2	
21	<b>Hierarchical data model</b>	<b>Network data model</b>	2
	A child record has only one parent node.	A child may have many parent nodes.	
	This model represents a one-to-many relationship ie parent-child relationship.	It represents the data in many-to-many relationships.	
	This model is mainly used in IBM Main Frame computers.	This model is easier and faster to access the data.	
22	<ul style="list-style-type: none"> <li>❖ A CSV file is a human readable text file where each line has a number of fields, separated by commas or some other delimiter.</li> </ul>	2	
23	<p>result = cursor.fetchall()</p> <ul style="list-style-type: none"> <li>❖ Example: The fetchall() method is used to fetch all rows from the database table</li> </ul>	2	
24	<ul style="list-style-type: none"> <li>❖ 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.</li> </ul>	2	

PART - III		6X3=18
25	<p align="center"><b>Pure Function</b></p> <p>The return value of the pure functions solely depends on its arguments passed. Hence, if you call the pure functions with the same set of arguments, you will always get the same return values. They do not have any side effects.</p>	3
	<p align="center"><b>Impure Function</b></p> <p>The return value of the impure functions does not solely depend on its arguments passed. Hence, if you call the impure functions with the same set of arguments, you might get the different return values For example, random(), Date().</p>	
26	<p>They do not modify the arguments which are passed to them</p>	3
	<p>They may modify the arguments which are passed to them</p>	
26	<ul style="list-style-type: none"> <li>❖ 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.</li> <li>❖ <b>Example:</b>  <code>lst := [10, 20]</code>  <code>x, y := lst</code></li> <li>❖ A second method for accessing the elements in a list is by the element selection operator, also expressed using square brackets.</li> <li>❖ <b>Example:</b>  <code>lst[0]</code>  <code>10</code>  <code>lst[1]</code>  <code>20</code></li> </ul>	3
27	<ul style="list-style-type: none"> <li>❖ Asymptotic Notations are languages that uses meaningful statements about time and space complexity.</li> <li>❖ The following three asymptotic notations are mostly used to represent time complexity of algorithms:</li> </ul> <p><b>(i) Big O:</b></p> <ul style="list-style-type: none"> <li>❖ Big O is often used to describe the worst-case of an algorithm.</li> </ul> <p><b>(ii) Big <math>\Omega</math>:</b></p> <ul style="list-style-type: none"> <li>❖ 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).</li> </ul> <p><b>(iii) Big <math>\Theta</math> :</b></p> <ul style="list-style-type: none"> <li>❖ When an algorithm has a complexity with lower bound = upper bound, say that an algorithm has a complexity <math>O(n \log n)</math> and <math>\Omega(n \log n)</math>, it's actually has the complexity <math>\Theta(n \log n)</math>, which means the running time of that algorithm always falls in <math>n \log n</math> in the best-case and worst-case.</li> </ul>	3
28	<pre>a= int (input("Enter number 1")) b= int (input ("Enter number 2")) c= int (input ("Enter number 3")) if a&gt;b and a&gt;c:     put ("A is greater") elif b&gt;a and b&gt;c:     print ("B is greatest") else:     print ("C is greater")</pre>	3

29	<p><b>Description:</b>Used to capitalize the first character of the string.</p> <p><b>Example:</b>  <pre>&gt;&gt;&gt; city="chennai" &gt;&gt;&gt; print(city.capitalize())</pre> <b>Chennai</b></p> <p><b>(b) swapcase()</b></p> <p><b>Description:</b>It will change case of every character to its opposite case vice-versa.</p> <p><b>Example:</b>  <pre>&gt;&gt;&gt; str1="tAmiL NaDu" &gt;&gt;&gt; print(str1.swapcase())</pre> <b>TaMIL nAdU</b></p>	3
30	<ul style="list-style-type: none"> <li>❖ 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 “<b>init</b>” which act as a Constructor.</li> <li>❖ It must begin and end with double underscore. This function will act as an ordinary function; but only difference is, it is executed automatically when the object is created.</li> <li>❖ This constructor function can be defined with or without arguments. This method is used to initialize the class variables.</li> </ul> <p><b>Syntax:</b></p> <p style="padding-left: 40px;">General format of __init__ method (Constructor function)</p> <pre>def __init__(self, [args .....]): &lt;statements&gt;</pre> <p><b>Example:</b></p> <pre>class Sample:     def __init__(self, num):         print("Constructor of class Sample...")         self.num=num         print("The value is :", num)  S=Sample(10)</pre> <p><b>DESTRUCTOR:</b></p> <ul style="list-style-type: none"> <li>• Destructor is also a special method gets executed automatically when an object exit from the scope. It is just opposite to constructor. In Python, <code>__del__()</code> method is used as destructor.</li> </ul> <pre>class Sample:     num=0     def __init__(self, var):         Sample.num+=1         self.var=var         print("The object value is = ", var)         print("The value of class variable is= ", Sample.num)     def __del__(self):         Sample.num-=1         print("Object with value %d is exit from the scope"%self.var)  S1=Sample(15) S2=Sample(35) S3=Sample(45)</pre>	3



31	<ul style="list-style-type: none"> <li>❖ To automate certain tasks in a program</li> <li>❖ Extracting information from a data set</li> <li>❖ Less code intensive as compared to traditional programming language</li> <li>❖ can bring new functions to applications and glue complex systems together.</li> </ul>	3
32	<ul style="list-style-type: none"> <li>❖ The WHERE clause is used to extract only those records that fulfill a specified condition. In this example we are going to display the different grades scored by male students from "student table"</li> </ul> <p><b>Python statement:</b>  <code>cursor.execute("SELECT DISTINCT (Grade) FROM student where gender='M'")</code></p>	3
33	<p><b>(i) COMMIT command :</b></p> <ul style="list-style-type: none"> <li>❖ The <b>COMMIT</b> command is used to permanently save any transaction to the database.</li> </ul> <p><b>(ii) ROLLBACK command</b></p> <ul style="list-style-type: none"> <li>❖ The <b>ROLLBACK</b> command restores the database to the last committed state.</li> </ul> <p><b>(iii) SAVEPOINT command</b></p> <ul style="list-style-type: none"> <li>❖ The <b>SAVEPOINT</b> command is used to temporarily save a transaction so that you can rollback to the point whenever required.</li> </ul>	3
<b>PART - IV</b>		<b>5X5=25</b>
34	<ul style="list-style-type: none"> <li>❖ To facilitate data abstraction, you will need to create two types of functions: constructors and selectors.</li> </ul> <p><b>Constructors and Selectors:</b></p> <ul style="list-style-type: none"> <li>• Constructors are functions that build the abstract data type.</li> <li>• Selectors are functions that retrieve information from the data type.</li> </ul> <p>For example, say you have an abstract data type called city. This city object will hold the city's name, and its latitude and longitude. To create a city object, you'd use a function like <b>city = makecity (name, lat, lon)</b></p> <p>To extract the information of a city object, you would use functions like <b>getname(city)</b>  <b>getlat(city)</b>  <b>getlon(city)</b></p> <p><b>city = makecity (name, lat, lon)</b></p> <div data-bbox="625 1442 1225 1749" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>(name, lat, lon) -----&gt; value passed as parameter</p> <pre> graph TD     A["(name, lat, lon) -----&gt; value passed as parameter"] --&gt; B["make city ( )"]     B --&gt; C["city"]     C --- D["lat   lon"]           </pre> </div> <p>Here make city (name, lat, lon) is the constructor which creates the object city.</p> <ul style="list-style-type: none"> <li>• Selectors are nothing but the functions that retrieve information from the data type. Therefore in the above code  <b>getname(city)</b>  <b>getlat(city)</b>  <b>getlon(city)</b></li> </ul> <p>are the selectors because these functions extract the information of the city object.</p>	5



(OR)

- ❖ Binary search also called half-interval search algorithm. It finds the position of a search element within a sorted array.
- ❖ The binary search algorithm can be done as divide-and-conquer search algorithm and executes in logarithmic time.

### Pseudo code for Binary search

1. Start with the middle element:

- ❖ If the search element is equal to the middle element of the array i.e., the middle value = number of elements in array/2, then return the index of the middle element.
- ❖ If not, then compare the middle element with the search value,
- ❖ If the search element is greater than the number in the middle index, then select the elements to the right side of the middle index, and go to Step-1.
- ❖ If the search element is less than the number in the middle index, then select the elements to the left side of the middle index, and start with Step1.

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.

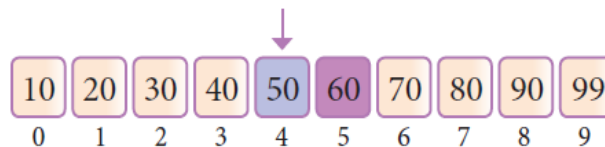
### Binary Search Working principles

- ❖ 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.
- ❖ 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.

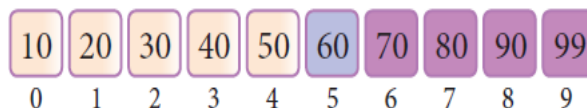


- ❖ First, we find index of middle element of the array by using this formula :  

$$\text{mid} = \text{low} + (\text{high} - \text{low}) / 2$$
- ❖ Here it is,  $0 + (9 - 0) / 2 = 4$  (fractional part ignored). So, 4 is the mid value of the array.



- ❖ 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.



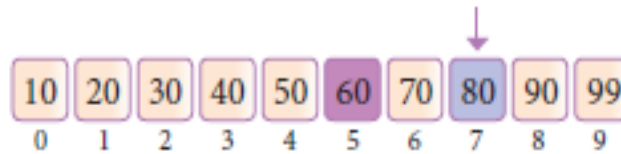
- ❖ Now we change our low to mid + 1 and find the new mid value again using the

formula.

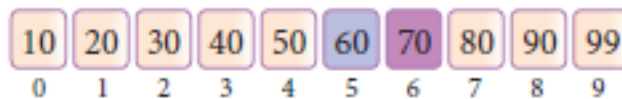
**low to mid + 1**

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

- ❖ Our new mid is 7 now. We compare the value stored at location 7 with our target value 31.



- ❖ 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



- ❖ 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.



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



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 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.  
**Input() function:**
  - ❖ In Python, **input()** function is used to accept data as input at run time.
  - ❖ The syntax for **input()** function is, **Variable = input ("prompt string")** Where, **prompt string** in the syntax is a statement or message to the user, to know what input can be given. 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. 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.

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

```
>>> city=input("Enter Your City: ")
```

```
Enter Your City: Madurai
```

```
>>> print("I am from ", city)
```

```
I am from Madurai
```

- ❖ 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()**.
- ❖ The **input()** accepts all data as string or characters 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. We will learn about more such functions in later chapters.

**Example:**

```
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**

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

**Example:** `print("string to be displayed as output ")`

`print(variable )`

`print("String to be displayed as output ", variable)`

`print("String 1", variable, "String 2", variable, "String 3" .....)`

- ❖ The **print()** evaluates the expression before printing it on the monitor. 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.

**(b)**

- ❖ Scope of variable refers to the part of the program, where it is accessible, i.e., area where you can refer (use) it. We can say that scope holds the current set of variables and their values.

- ❖ Two types of scopes - **local scope** and **global scope**.

**Local Scope:**

- ❖ A variable declared inside the function's body or in the local scope is known as local variable.

**Rules of local variable:**

- ❖ A variable with local scope can be accessed only within the function/block that it is created in.
- ❖ When a variable is created inside the function/block, the variable becomes local to it.

	<ul style="list-style-type: none"> <li>❖ A local variable only exists while the function is executing.</li> <li>❖ The formate arguments are also local to function.</li> </ul> <p><b>Example : Create a Local Variable</b></p> <pre>def loc():     y=0     print(y)  loc()</pre> <p><b>Output:</b> 0</p> <p><b>Global Scope:</b> 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/block.</p> <p><b>Rules of global Keyword:</b></p> <ul style="list-style-type: none"> <li>❖ The basic rules for global keyword in Python are:</li> <li>❖ When we define a variable outside a function, it's global by default. You don't have to use global keyword.</li> <li>❖ We use global keyword to read and write a global variable inside a function.</li> <li>❖ Use of global keyword outside a function has no effect</li> </ul> <p><b>Use of global Keyword :</b></p> <p><b>Example :</b></p> <pre>c = 1 def add():     print(c)     add()</pre>	
36 a)	<ul style="list-style-type: none"> <li>❖ 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.</li> </ul> <p><b>Syntax of range ( ) function:</b> range (start value, end value, step value)</p> <p>where,</p> <p><b>start value</b> – beginning value of series. Zero is the default beginning value.</p> <p><b>end value</b> – upper limit of series. Python takes the ending value as upper limit – 1.</p> <p><b>step value</b> – It is an optional argument, which is used to generate different interval of values.</p> <p><b>Example : Generating whole numbers upto 10</b></p> <pre>for x in range (1, 11):     print(x)</pre> <p><b>Creating a list with series of values:</b></p> <ul style="list-style-type: none"> <li>❖ Using the range( )function, you can create a list with series of values. To convert the result of range( )function into list, we need one more function called list( ).The list( ) function makes the result of range( ) as a list.</li> </ul> <p><b>Syntax:</b> List_Varibale = list ( range ( ) )</p> <p><b>Example:</b></p> <pre>&gt;&gt;&gt; Even_List = list(range(2,11,2)) &gt;&gt;&gt; print(Even_List) [2, 4, 6, 8, 10]</pre>	5

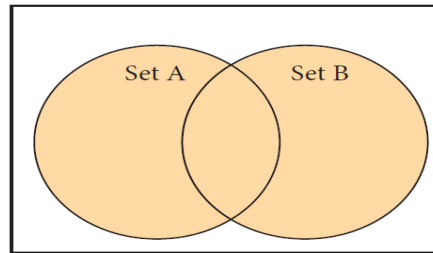


36

- ❖ The python is also supports the set operations such as Union, Intersection, difference and Symmetric difference.

b)

**(i) Union:** It includes all elements from two or more sets



- ❖ In python, the operator `|` is used to union of two sets. The function `union()` is also used to join two sets in python.

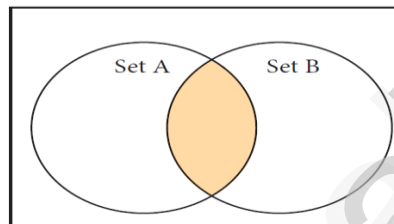
**Example: Program to Join (Union) two sets using union operator**

```
set_A={2,4,6,8}
set_B={'A', 'B', 'C', 'D'}
U_set=set_A|set_B
print(U_set)
```

**Output:**

```
{2, 4, 6, 8, 'A', 'D', 'C', 'B'}
```

**(ii) Intersection:** It includes the common elements in two sets



- ❖ The operator `&` is used to intersect two sets in python. The function `intersection()` is also used to intersect two sets in python.

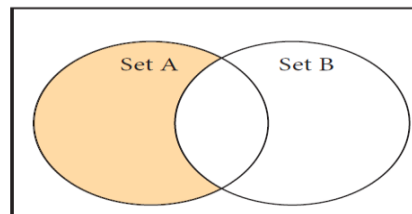
**Example:**

```
set_A={'A', 2, 4, 'D'}
set_B={'A', 'B', 'C', 'D'}
print(set_A & set_B)
```

**Output: {'A', 'D'}**

**(iii) Difference:**

- ❖ It includes all elements that are in first set (say set A) but not in the second set (say set B)



- ❖ The minus (`-`) operator is used to difference set operation in python. The function `difference()` is also used to difference operation.

**Example: Program to difference of two sets using minus operator**

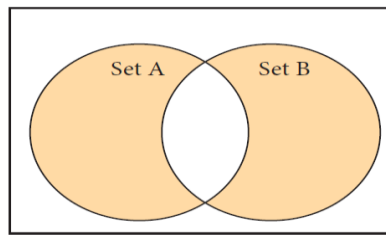
```
set_A={'A', 2, 4, 'D'}
set_B={'A', 'B', 'C', 'D'}
print(set_A - set_B)
```

**Output:**

{2, 4}

**(iv) Symmetric difference**

- ❖ It includes all the elements that are in two sets (say sets A and B) but not the one that are common to two sets.



- ❖ The caret (^) operator is used to symmetric difference set operation in python. The function **symmetric\_difference()** is also used to do the same operation.

**Example:**

set\_A={'A', 2, 4, 'D'}

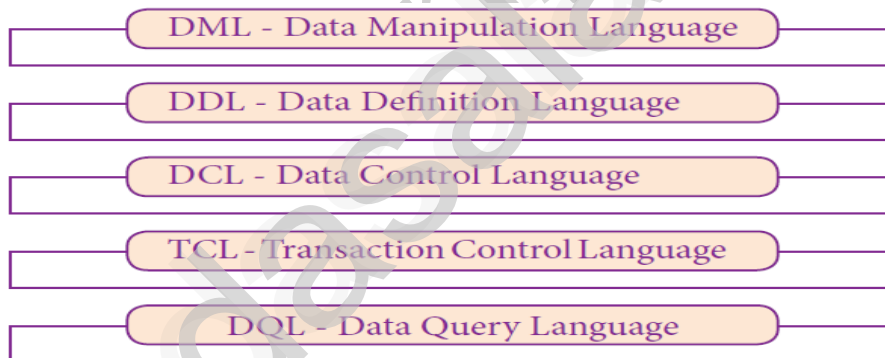
set\_B={'A', 'B', 'C', 'D'}

**print(set\_A ^ set\_B)****Output:**

{2, 4, 'B', 'C'}

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SQL commands are divided into five categories:

**DATA DEFINITION LANGUAGE**

- The Data Definition Language (DDL) consist of SQL statements used to define the database structure or schema. It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in databases.
- The DDL provides a set of definitions to specify the storage structure and access methods used by the database system.

**A DDL performs the following functions : (PTA only DDL performs)**

- It should identify the type of data division such as data item, segment, record and database file.
- It gives a unique name to each data item type, record type, file type and data base.
- It should specify the proper data type.
- It should define the size of the data item.
- It may define the range of values that a data item may use.
- It may specify privacy locks for preventing unauthorized data entry.

5

**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 records.

**DATA MANIPULATION LANGUAGE**

- A Data Manipulation Language (DML) is a computer programming language used for adding (inserting), removing (deleting), and modifying (updating) data in a database. In SQL, the data manipulation language comprises the SQL-data change statements, which modify stored data but not the schema of the database table.
- After the database schema has been specified and the database has been created, the data can be manipulated using a set of procedures which are expressed by DML.

**The DML is basically of two types:**

- **Procedural DML** – Requires a user to specify what data is needed and how to get it.
- **Non-Procedural DML** – Requires a user to specify what data is needed without specifying how to get it.

**SQL commands which comes under Data Manipulation Language are :**

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

**DATA CONTROL LANGUAGE**

- 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).
- The privileges are required for performing all the database operations such as creating sequences, views of tables etc.
- SQL commands which come under Data Control Language are:

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

**TRANSACTIONAL CONTROL LANGUAGE**

- Transactional control language (TCL) commands are used to manage transactions in the database. These are used to manage the changes made to the data in a table by DML statements.
- SQL command which come under Transfer Control Language are:

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

	<p><b>DATA QUERY LANGUAGE</b></p> <ul style="list-style-type: none"> <li>The Data Query Language consist of commands used to query or retrieve data from a database. One such SQL command in Data Query Language is</li> </ul>	
(OR)	<p><b>Select :</b> It displays the records from the table.</p> <ul style="list-style-type: none"> <li>❖ Python uses Automatic Garbage Collection whereas C++ does not.</li> <li>❖ C++ is a statically typed language, while Python is a dynamically typed language.</li> <li>❖ Python runs through an interpreter, while C++ is pre-compiled.</li> <li>❖ Python code tends to be 5 to 10 times shorter than that written in C++.</li> <li>❖ In Python, there is no need to declare types explicitly where as it should be done in C++</li> <li>❖ 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.</li> </ul>	5
38	<p>There are two ways to read a CSV file.</p> <ol style="list-style-type: none"> <li>Use the csv module's reader function</li> <li>Use the DictReader class.</li> </ol> <div data-bbox="472 741 1193 1003" style="text-align: center;"> <pre> graph TD     A[Two ways of Reading CSV File] --&gt; B[reader () function]     A --&gt; C[Dict Reader class] </pre> </div> <p><b>CSV Module's Reader Function:</b></p> <ul style="list-style-type: none"> <li>You can read the contents of CSV file with the help of <b>csv.reader()</b> method. <b>The reader function is designed to take each line of the file and make a list of all columns.</b></li> <li>Then, you just choose the column you want the variable data for. Using this method one can read data from csv files of different formats like quotes (" "), pipe ( ) and comma (,).</li> </ul> <p><b>syntax :</b></p> <pre>csv.reader(fileobject,delimiter,fmtparams)</pre> <p>where</p> <ul style="list-style-type: none"> <li>❖ <b>file object :</b> passes the path and the mode of the file</li> <li>❖ <b>delimiter:</b> an optional parameter containing the standard dilects like ,   etc can be omitted</li> <li>❖ <b>fmtparams:</b> optional parameter which help to override the default values of the dialects like skipinitialspace,quoting etc. Can be omitted</li> <li>❖ CSV file - data with default delimiter comma (,)</li> <li>❖ CSV file - data with Space at the beginning</li> <li>❖ CSV file - data with quotes</li> <li>❖ CSV file - data with custom Delimiters</li> </ul> <p><b>CSV file with default delimiter comma (,)</b></p> <ul style="list-style-type: none"> <li>❖ The following program read a file called "sample1.csv" with default delimiter comma (,) and print row by row.</li> </ul> <p><b>Program:</b></p> <pre>import csv with open('c:\pyprg\sample1.csv', 'r') as F:     reader = csv.reader(F)     print(row) F.close()</pre>	

**Reading CSV File Into A Dictionary:**

- To read a CSV file into a dictionary can be done by using **DictReader** class of csv module which works similar to the reader() class but creates an object which maps data to a dictionary.
- 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).
- If the first row of your CSV does not contain your column names, you can pass a fieldnames parameter into the DictReader's constructor to assign the dictionary keys manually.
- 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.

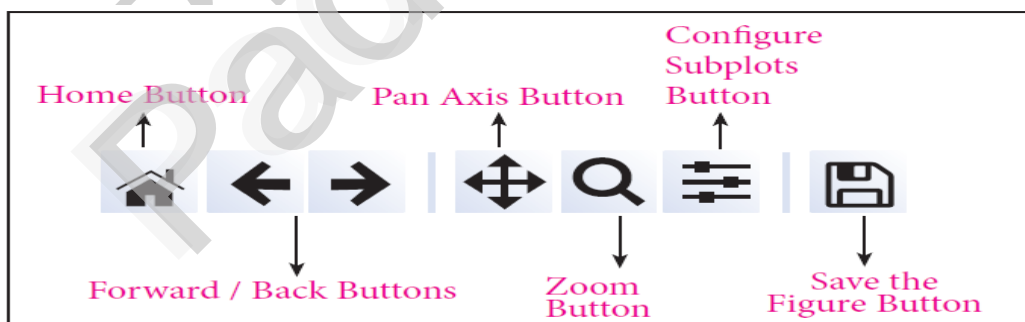
**Example:**

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

- In the above program, DictReader() is used to read "sample8.csv" file and map into a dictionary. Then, the function dict() is used to print the data in dictionary format without order.
- Remove the dict() function from the above program and use print(row). Check you are getting the following output  
OrderedDict([('ItemName', 'Keyboard'), ('Quantity', '48')])  
OrderedDict([('ItemName', 'Monitor'), ('Quantity', '52')])  
OrderedDict([('ItemName', 'Mouse'), ('Quantity', '20')])

(OR)

- ❖ In the output figure, you can see few buttons at the bottom left corner. Let us see the use of these buttons.



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

**Forward/Back buttons** → These buttons can be used like the Forward and Back buttons in your browser. You can click these to move back to the previous point you were at, or forward again.

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

**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.



You can alternatively zoom out with a right click and drag.

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

**Save Figure** → This button will allow you to save your figure in various forms.

\*\*\*\*\*

Prepared by :

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- ❖ ஒவ்வொரு மாணவர் மீதும் கனிவான தனிகவனம் செலுத்தப்படுகிறது.
- ❖ கதை, கவிதை, கட்டுரை, ஓவியம் மற்றும் பேச்சாற்றலுக்கான சிறப்பு பயிற்சி அளிக்கப்படுகிறது
- ❖ தமிழ், ஆங்கிலம், ஹிந்தி வாசித்தல் திறனை மேம்படுத்தும் வகையில் பயிற்சிகள் அளிக்கப்படுகிறது.
- ❖ ஹிந்தி தேர்வுகளுக்கு (ப்ராத்மிக், மத்யமா, ராஷ்ட்ரபாஷா) தேர்வு மையமாக செயல்படுகிறது.
- ❖ ஒவ்வொரு வார இறுதியிலும் புரிதல் தேர்வு (Understanding Test) நடைபெறுகிறது.
- ❖ பாடவாரியாக Club அமைத்து Activity நடைபெறுகிறது .
- ❖ சிலம்பம், வில்வித்தை, கராத்தே, பரதம், மேற்கத்திய நடனம், துப்பாக்கிச்சுடுதல் ஆகிய Extracurricular Activity வகுப்புகள் சிறந்த முறையில் நடைபெறுகிறது.
- ❖ Education Oriented Field Trip அமைத்துச் செல்லப்படுகிறது.
- ❖ Computer பயிற்சி சிறந்த முறையில் அளிக்கப்படுகிறது.
- ❖ மன அமைதி மற்றும் ஞாபக சக்தியை மேம்படுத்துவதற்காக யோகா வகுப்புகள் நடத்தப்படுகிறது.
- ❖ மாணவர்கள் Chess ல் சிறந்து விளங்க Chess வகுப்புகள் சிறந்த முறையில் நடைபெறுகிறது.
- ❖ ஒவ்வொரு பருவத் தேர்வு இறுதியிலும் School Level Achievement Survey - Test நடத்தப்படுகிறது.
- ❖ மாணவர்களின் உடல் திறனை மேம்படுத்தும் வகையில் விளையாட்டுப் பயிற்சிகள் (Indoor And Outdoor Games) அளிக்கப்படுகிறது.

நிலைக்கார்ப்பியம்  
நிலம் தீ நர் வளி விகம்போடு ஐந்தும்  
கலந்த யயக்கம் உவம் ஆதலின்  
குருதினை ஐயார் இயல்பிநறி வறு அமைந்  
திரிவுகில் விசுவலோடு தலூஅல் வேண்டும்

Paragraph  
Paragraph is the name of the  
Paragraph Paragraph. Example  
Hindi, English, Telugu, Malayalam, Tamil  
Tamil Nadu, India.

डॉ. अब्दुल कलाम  
विद्या देवी नयी कल्पना,  
कल्पना तासी नयी विचार।  
नयी विचारों से मिले ज्ञान,  
ज्ञान बनाय आपकी सज्जन।।  
- डॉ. अब्दुल कलाम



செல்: 99655 31727, 99655 35967, 94422 88402, 80726 68664