Morning session:

Today the session is started from the previous class concepts like computing,how thw computer understands the binary code and how electic signals which passes the binary code and gives the output.

Then koushik sir briefly explained the concept about **algorithms.**

Algorithm:

Algorithm is a step by step process to solve the problem.Algorithm is applied for every problem.For example in a basic calculator we can able to add a number or subtract it like we cannot perform scientific calculations in a basic calculator.where the basic calculator is loaded with the algorithms to solve only a simple set of instructions to solve the problem.

Then koushik sir separated each team with four members,and he gave each team a task to perform.whereas my team have to write algorithm for the statement to bring a book from the laptop bag placed in the table.Then we wrote the set of instructions by discussing like,

Step 1:get down from the chair.

Step 2:turn back.

Step 3:move forward 5 steps and turn left.

Step 4:Then move 2 steps.

Step 5:take the dell laptop bag which is placed under the wooden table.

Step 6:open the zip and take the book.

Step 7:close the zip and place the bag under the wooden table.

Step 8:then turn back.

Step 10:move 2 steps.

Step 11:turn right and move forward for 5 steps.

Step 12:sit on the chair.

So in this session I clearly understood the concept of algorithm from the practices we did.

Afternoon session:

In the afternoon session riche explained about packages which is used in phython.then how to read an excel file in python.

```
df = pd.read_csv("C:\\Users\\R.Ragini\\Downloads\\sales.csv")  # replace
'Sheet1' with your actual sheet name
```

Then he explained about **debugging** tool which is used to debug the code to check if there is any error in the code.after debugging we can view the full worksheet in the python window by clicking **view as dataframe.**

Dictionary: Dictionary is one of the data structure in python.Dictionary contains KEY and VALUE.The value is identified by the key.using dictionary we can add or remove items.

```
my_dict = {

   "name": "Alice",

   "age": 25,

   "city": "New York"

}
```

In this example:

- `"name"`, `"age"`, and `"city"` are **keys**.
- `"Alice"`, `25`, and `"New York"` are **values**.

List:

List is the collection of items.that is we can store multiple items in a single variable.

EXAMPLE:

fruits = ["apple", "banana", "cherry"]

print(fruits)

in the above example it displays all the three fruits in the list.

Indexed:list are indexed from 0 .which means it starts counting from 0.

EXAMPLE:

print(fruits[0]) # Output: apple

print(fruits[-1]) # Output: cherry (negative indexing)

in the above example,to display from top to bottom like right to left we use index 0.

if we want to display from bottom to top means we use -1(negative indexing).

Tuple: Tuple is also a builtin data structure used to store multiple items in a single variable same as list but the only difference is that we cannot add or remove in item.

EXAMPLE:

fruits = ("apple", "banana", "cherry")

print(fruits)

Append:

The `append()` method is used only with lists in Python.
It is used to add a single item to the end of a list.

Syntax:

list_name.append(item)

EXAMPLE:

```
fruits = ["apple", "banana", "cherry"]
fruits.append("orange")
print(fruits)
```

OUTPUT:

['apple', 'banana', 'cherry', 'orange']

Dataframe:

It is used to store and manipulate **structured data** (like rows and columns).

CREATING DATAFRAMES:

```
import pandas as pd


data = {
    "Name": ["John", "Emma", "Ryan"],
    "Age": [28, 24, 35],
    "City": ["New York", "London", "Paris"]
}


df = pd.DataFrame(data)
print(df)
```

ADDING A NEW COLUMN:

```
df["Salary"] = [50000, 60000, 70000]
```

REMOVING A COLUMN:

```
df.drop("City", axis=1, inplace=True)
```

drop command is used to delete the row/column.