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Task 6.Implement various text file operation

Aim:

To write a python program Implement various text file operations

Problem 6.1:

You need to write the sentence "Error objects are thrown when runtime errors occur. The Error object can also be used as a base object for user-defined exceptions" into a text file named log.txt. Implement a function that performs this task.

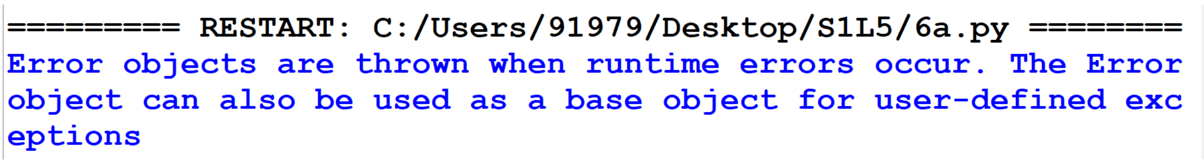
Algorithm:

1. **Write to a File:**
   - Define writefile(filename) function:
     - Open a file named "log.txt" in write mode.
     - Write the following text to the file:
       - "Error objects are thrown when runtime errors occur. The Error object can also be used as a base object for user-defined exceptions"
     - Close the file.
2. **Read from a File:**
   - Define readfile(filename) function:
     - Open the file specified by filename in read mode using a with statement.
     - Read the entire content of the file.
     - Print the content.
3. **Execute the Program:**
   - Call writefile("write") to write the predefined text to "log.txt".
   - Call readfile("text") to attempt to read from a file named "text" and print its content.

Program 6.1

```
def writefile(filename):
        f=open("log.txt ","w")
        f.write("Error objects are thrown when runtime errors occur. The Error object
        can also be used as a base object for user-defined exceptions ")
        f.close()
def readfile(filename):
        with open(filename, "r") as file:
        content = file.read()
        print(content)
writefile("write")
readfile("text")
```

Output:



```
========= RESTART: C:/Users/91979/Desktop/S1L5/6a.py ========
Error objects are thrown when runtime errors occur. The Error
object can also be used as a base object for user-defined exc
eptions
```

Problem 6.2.
You have a text file log.txt containing logs of a system. Write a function that counts the number of lines containing the word "ERROR".

Algorithm:

1. **Initialize Error Counter:**
    - Define the function count_error_lines(filename):
        - Initialize error_count to 0.
2. **Open and Read File:**
    - Open the file specified by filename in read mode using a with statement.
3. **Check Each Line for "ERROR":**
    - Loop through each line in the file:
        - If the line contains the word "ERROR", increment error_count by 1.
4. **Return Error Count:**
    - After reading all the lines, return the value of error_count.
5. **Execute the Program:**
    - Call count_error_lines("log.txt") to count the number of lines with the word "ERROR" in the file "log.txt".
    - Print the result with the message: "Number of lines with 'ERROR': {error_lines}".

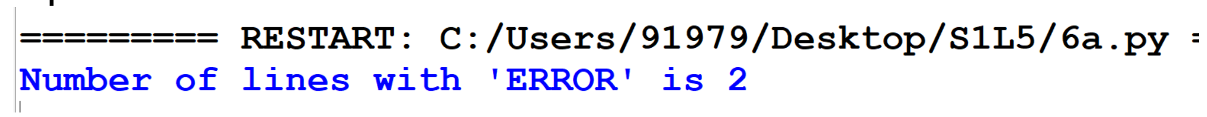
Program 6.3:

```
def count_error_lines(filename):
    error_count = 0
    with open(filename, "r") as file:
        for line in file:
        if "ERROR" in line:
            error_count += 1
    return error_count
error_lines = count_error_lines("log.txt")
print(f"Number of lines with 'ERROR': {error_lines}")
```

log.txt

"**Error** objects are thrown when runtime **Error** occur.
The **Error** object can also be used as a base object for user-defined exceptions."

Output:



```
========= RESTART: C:/Users/91979/Desktop/S1L5/6a.py =
Number of lines with 'ERROR' is 2
```

Problem 6.3:

You need to write a report containing the details (Name, departments) of the employee in list. Write a Python function that writes this report to a file named employee_report.txt

Algorithm:

```
1. Create Employee Data:
    o Define the function write_employee_report(filename):
        ▪ Create a list employees containing dictionaries, each with
          "name" and "department" keys for individual employees.
2. Open File for Writing:
    o Open the file specified by filename in write mode using a with
      statement.
3. Write Employee Data to File:
    o Loop through each employee in the employees list:
        ▪ For each employee, format a string as "Name:
          {employee['name']}, Department: {employee['department']}".
        ▪ Write the formatted string to the file, followed by a newline
          character (\n).
4. Execute the Program:
    o Call write_employee_report("employee_report.txt") to write the
      employee data to the file "employee_report.txt".
```

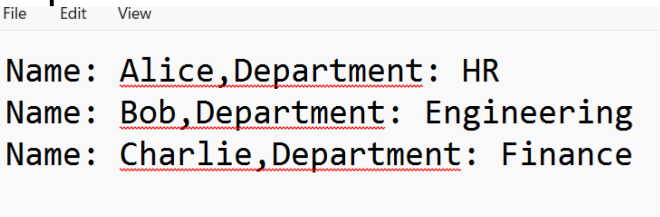
Program 6.3:

```
def write_employee_report(filename):
    employees = [
        {"name": "Alice", "department": "HR"},
        {"name": "Bob", "department": "Engineering"},
        {"name": "Charlie", "department": "Finance"}
    ]

    with open(filename, "w") as file:
        for employee in employees:
            line = f"Name: {employee['name']}, Department: {employee['department']}\n"
            file.write(line)

# Example usage:
write_employee_report("employee_report.txt")
```

output:



```
Name: Alice,Department: HR
Name: Bob,Department: Engineering
Name: Charlie,Department: Finance
```

Result:
Thus, the python program Implement various text file operations was successfully executed and the output was verified.