|  |  |  |
| --- | --- | --- |
| **Ex.No.5** | **Usage of Files operations in Python** | Reg.No: URK23AI1071 |
| **12.02.24** |
| **1 .**Write a Python function that accepts a file and performs the following operation,  • calculate the number of upper-case letters and lower-case letters  from the entire content of the file.  • Search a word in a particular line  • Search a word in the range of lines  • Replace a word in the file  **Aim:** To write a python program to calculate the number of upper-case letters and lower-case letters  from the entire content of the file. Search a word in a particular line. Search a word in the range of lines  Replace a word in the file.  **Algorithm :**  **Step1:** Open the file specified by file\_path in read mode.  **Step2.** Read the entire content of the file. Iterate through each character in the content.  **Step3**. Iterate through each character in the content.. If the character is uppercase, increment the uppercase count. If the character is lowercase, increment the lowercase count.  **Step4.** Return a tuple containing the counts of uppercase and lowercase characters.  **Step5:** Check if the provided line\_number is within the range of lines in the file. f the line number is valid, retrieve the content of the specified line.  **Step 6.** Return a message indicating whether the word was found or not.  **Step7.** Collect all occurrences of the word within the range.  **Step8.** Return a message indicating where the word was found within the specified range of lines.  **Step9.** Open the file specified by file\_path in read mode and read its content.  **Step10.** Replace all occurrences of old\_word with new\_word in the content.  **Step11.**  Write the modified content back to the file.  **Step12.** Return a message confirming the replacement.  **Program:**  def count\_upper\_lower(file\_path):  upper\_count = 0  lower\_count = 0  with open(file\_path, 'r') as file:  content = file.read()  for char in content:  if char.isupper():  upper\_count += 1  elif char.islower():  lower\_count += 1  return (upper\_count, lower\_count)  def search\_word\_in\_line(file\_path, line\_number, word):  with open(file\_path, 'r') as file:  lines = file.readlines()  if line\_number <= len(lines):  line = lines[line\_number - 1]  if word in line:  return f"Word '{word}' found in line {line\_number}."  else:  return f"Word '{word}' not found in line {line\_number}."  else:  return "Invalid line number."  def search\_word\_in\_range(file\_path, start\_line, end\_line, word):  result = []  with open(file\_path, 'r') as file:  lines = file.readlines()  for i in range(start\_line - 1, min(end\_line, len(lines))):  if word in lines[i]:  result.append(f"Word '{word}' found in line {i + 1}.")  if result:  return '\n'.join(result)  else:  return f"Word '{word}' not found in the specified range of lines."  def replace\_word(file\_path, old\_word, new\_word):  with open(file\_path, 'r') as file:  content = file.read()  content = content.replace(old\_word, new\_word)  with open(file\_path, 'w') as file:  file.write(content)  return f"Word '{old\_word}' replaced with '{new\_word}' in the file."  file\_path = "file2.txt"  print("upper case and lower case",count\_upper\_lower(file\_path))  print(search\_word\_in\_line(file\_path, 1, "python"))  print(search\_word\_in\_range(file\_path, 1,6, 'hii'))  print(replace\_word(file\_path, 'hloo', 'hii'))  **Output:**    **Result:**  Therefore, the python program to To write a python program to calculate the number of upper-case letters and lower-case letters from the entire content of the file. Search a word in a particular line. Search a word in the range of lines.Replace a word in the file is executed successfully.  **2.** Read the input from the console and write it into a file until the word end of the line reaches.  **Aim:** To write a program in python to get the input from the console and write it into a file until the word end of the line reaches.  **Algorithm:**  **Step1:**Begin by defining the function write\_thefile which takes two parameters filepath and endword.  **Step2:** Use the open() function to open the file specified by filepath in write mode.  **Step3:** Start a loop that continues indefinitely (while True). Prompt the user to enter text using the input() function and store it in a variable line.  **Step4:**Check if the entered line, after stripping whitespace, is equal to the endword parameter.  **Step5:** After the loop close the file using the close() method.  **Program:**  def write\_thefile(filepath,endword):  with open (filepath,"w")as file:  while True:  line=input("enter text:")  if line.strip()==endword:  break  file.write(line+"\n")  filepath="untitled.txt"  endword="the end"  write\_thefile(filepath,endword)  **Output:**    **Result:**  Therefore, the python program to get the input from the console and write it into a file until the word end of the line reaches is executed successfully.  **3.** Write a python program to find the longest word in a file.  **Aim:** To write a program in python to find the longest word in a file  **Algorithm:**  **Step1:**start by defining the function longest\_word which takes a single parameter file\_path.  **Step2:** Use the open() function to open the file specified by file\_path in read mode  **Step3:.** Use the read() method to read the entire content of the file and store it in a variable content.  **Step4:** Use the split() method on the content variable to split it into individual words based on whitespace.  **Step5:**Use the max() function with the key parameter set to len to find the longest word in the words list.  **Step6:**Return the longest word found in step 5 as the output of the function.  **Program:**  def longest\_word(file\_path):  with open (file\_path,"r")as file:  content=file.read()  words=content.split()  longestword=max(words,key=len)  return longestword  file\_path="untitled.txt"  longestword=longest\_word(file\_path)  print("longest word",longestword)  **Output:**    **Result:**  Therefore, the python program to find the longest word in a file is executed sucessfully.  **Result:**  Therefore, the python program to print the Armstrong number has been executed successfully.  **2)**Write python functions to print the number of uppercase, lowercase, and whitespaces.  **Aim:** To write a python program to print the number of uppercase, lowercase, and whitespaces.  **Algorithm:**  **Step 1:** Start the program.  **Step 2:** Create a function named count\_characters, and initialize all the three count to zero.  **Step 3:** Using if statement count the characters.  **Step 4:** Iterate through characters using for loop.  **Step 5:** Print the counts according to it’s character and use return statement and return them before that.  **Step 6:** End the program.  **Program:**  **def count(a):**  uppercase\_count = 0  lowercase\_count = 0  whitespace\_count = 0  for char in a:  if char.isupper():  uppercase\_count += 1  elif char.islower():  lowercase\_count += 1  elif char.isspace():  whitespace\_count += 1  return uppercase\_count, lowercase\_count, whitespace\_count  a= input("Enter any string: ")  uppercase, lowercase, whitespace = count(a)  print("Uppercase:", uppercase)  print("Lowercase:", lowercase)  print("Whitespaces:", whitespace)    **Output:**    **Result:**  Therefore, the program to print the number of uppercase, lowercase, and whitespaces has been executed successfully. | | |