**Bahria University, Lahore Campus**

Department of Computer Science

Lab Journal 02

**(Spring 2024)**

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| Course: | **Compiler Construction – Lab** | Date: 28-02-2024\_\_\_ |
| Course Code: | CSL 323 | Max Marks: 10 |
| Faculty’s Name: | Mr. M Mudassar |  |

Name: AFFAN AHMAD \_\_ Enroll No: 03134221-003\_\_ Class: BS(cs)-5A\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Objective(s):

Upon completion of this lab session, learners will be able to:

* The objective of this exercise is to get you to write, compile, and run several simple programs in C++ that help to recognize tokens (words) by getting input from the user and from the text file.

Lab Tasks:

Your lab report is expected to contain the following for each exercise:

* C++ Source Code (any file)
* Screenshot of your output (optional)

**Task 1:**

Write a program that ask user to input a paragraph and recognizes tokens (words) from it. Display each token in a single line.

**#include <iostream>**

**using namespace std;**

**#include <sstream>**

**#include <string>**

**int main() {**

**cout << "Enter a paragraph:" << endl;**

**string paragraph;**

**getline(cin, paragraph);**

**istringstream iss(paragraph);**

**string token;**

**cout << "\nTokens in the paragraph:" << endl;**

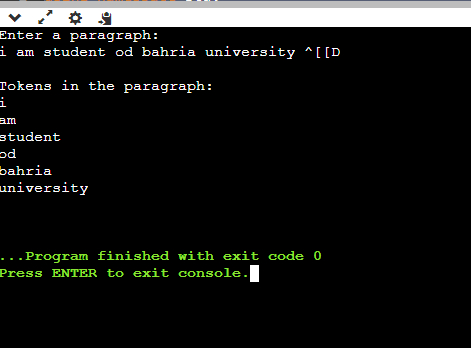
**while (iss >> token) {**

**cout << token << endl;**

**}**

**return 0;**

**}**



## Task 2:

Write a program that read input text (or program) from the text file and recognizes tokens (words) from it. Tha data of text file must be loaded into two fixed size buffer arrays (optionally can be of size 100). First, the data must be loaded into buffer-1, then into buffer-2, and if still there is data to read, again it loads in the buffer-1 and then buffer-2. The process must repeat until the data or content ends in the text file. Each word must be stored in a a separate array named with word (it can be of the same size of 100 or can be 30 as well). The program must display each token (word) in a single line.

#include <iostream>

#include <sstream>

#include <vector>

const char\* simulatedFileData = "This is a sample text file.\nIt contains multiple lines of text.\nEach line is a new token.";

const int BUFFER\_SIZE = 100;

const int WORD\_SIZE = 30;

int main() {

std::istringstream inputFile(simulatedFileData);

char buffer1[BUFFER\_SIZE];

char buffer2[BUFFER\_SIZE];

char word[WORD\_SIZE];

char\* currentBuffer = buffer1;

int currentBufferIndex = 0;

int wordIndex = 0;

std::vector<std::string> words;

while (inputFile.get(currentBuffer[currentBufferIndex])) {

if (currentBuffer[currentBufferIndex] == ' ' || currentBuffer[currentBufferIndex] == '\n') {

word[wordIndex] = '\0';

words.push\_back(word);

std::cout << words.back() << std::endl;

wordIndex = 0;

currentBuffer = (currentBuffer == buffer1) ? buffer2 : buffer1;

currentBufferIndex = 0;

} else {

word[wordIndex] = currentBuffer[currentBufferIndex];

++wordIndex;

}

++currentBufferIndex;

if (currentBufferIndex == BUFFER\_SIZE) {

currentBuffer = (currentBuffer == buffer1) ? buffer2 : buffer1;

currentBufferIndex = 0;

}

}

return 0;

}

**Lab Grading Sheet :**

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| **Task** | **Max Marks** | **Obtained Marks** | **Comments(*if any*)** |
| 1. | 05 |  |  |
| 2. | 05 |  |  |
|  |  |  |  |
|  |  |  |  |
| **Total** | **10** |  | **Signature** |

**Note: Attempt all tasks and get them checked by your Lab Instructor.**