## Pandit Deendayal Energy University, Gandhinagar

## School of Technology

**Department of Computer Science & Engineering**

**System Software & Compiler Design Lab (20CP302P)**



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**Practical: 1**

**Aim:** Write C/C++/Java/Python program to identify keywords, identifiers and others from the given input file.

**Code:**

#include <bits/stdc++.h>

#include <fstream>

#include <string>

#include <vector>

using namespace std;

int main() {

    //array of keywords

    string keywords[32]={"void","int","float","double","char","long","short","signed","unsigned","bool","if","else","for","while","do","break","continue","switch","case","default","return","goto","auto","extern","register","static","const","sizeof","typedef","volatile","struct","union"};

    //array of operators

    string operators[45]={"+","-","\*","/","%",">","<","=","==","++","--","+=","-=","\*=","/=","%=","&&","||","!","!=","&","|","^","~",">>","<<",">>=","<<=","&=","|=","^=",".","->","?",":","::",";",",","(",")","{","}","[","]"};

    //reading the file and storing each word in respective vectors

    ifstream file("input.cpp");

    string word;

    vector<string> keywordsVector;

    vector<string> operatorsVector;

    vector<string> identifiersVector;

    int key=0;

    int op=0;

    int id=0;

    //read file word by word

    while (file >> word){

        //check if a word is keyword

        for(int i=0;i<32;i++){

            if(word==keywords[i]){

                keywordsVector.push\_back(word);

                cout << word << " is a keyword." << endl;

                key++;

                goto end;

            }

        }

        //check if a word is operator

        for(int i=0;i<45;i++){

            if(word==operators[i]){

                operatorsVector.push\_back(word);

                cout << word << " is an operator." << endl;

                op++;

                goto end;

            }

        }

        identifiersVector.push\_back(word);

        cout << word << " is an identifier." << endl;

        id++;

        end:;

    }

    cout<< endl;

    //print the vectors

    cout<<"Keywords: ";

    for(int i=0;i<keywordsVector.size();i++){

        cout<<keywordsVector[i]<<" ";

    }

    cout<<endl;

    cout<<"Operators: ";

    for(int i=0;i<operatorsVector.size();i++){

        cout<<operatorsVector[i]<<" ";

    }

    cout<<endl;

    cout<<"Identifiers: ";

    for(int i=0;i<identifiersVector.size();i++){

        cout<<identifiersVector[i]<<" ";

    }

    cout<< endl;

    cout<< endl;

    cout << "total keywords: " << key << endl;

    cout << "total operators: " << op << endl;

    cout << "total identifiers: " << id << endl;

    cout<<endl;

    return 0;

}

**Output:**

