**Compilers Laboratory**

**B. Tech. 6th Semester**

**Batch: 2017**



**Department: Computer Science and Engineering**

**Faculty of Engineering & Technology**

**Ramaiah University of Applied Sciences**

|  |  |
| --- | --- |
| Faculty | Engineering & Technology |
| Programme | B. Tech. in Computer Science and Engineering |
| Course | Compilers Laboratory |
| Year/Semester | 2017/6th Semester |
| Course Code | CSC312A |

**Ramaiah University of Applied Sciences**

Private University Established in Karnataka State by Act No. 15 of 2013

List of Experiments

**LEX PROGRAMS**

1. Program to count the number of vowels and consonants in a given string.
2. Program to find the longest word in a given string.
3. Program to count no of:
   1. +positive and –negative integers
   2. +positive and –negative fractions
4. Program to count the number of characters, words, spaces, end of lines in a given input file.
5. Program to count the no of ‘scanf’ and ‘printf’ statements in a C program. Replace them with ‘readf’ and ‘writef’ statements respectively.
6. Program to perform addition, subtraction, multiplication, division and power. Note: Without Precedence.

**YACC & LEX PROGRAMS**

1. Program to recognize a valid variable, which starts with a letter, followed by any number of letters or digits.
2. Program to test the syntax of a simple expression and evaluate an arithmetic expression involving operating +, -, \* and /
3. Program to recognize strings ‘aaab’, ‘abbb’, ‘ab’ and ‘a’ using grammar (a^nb^m, n>=0. m>=0)

# Laboratory 1

Title of the Laboratory Exercise: Program to count the number of vowels and consonants in a given string

1. Introduction and Purpose of Experiment

Students learn to use Lex program to find out vowels and consonants in a given string

.

1. Aim and Objectives

Aim

* To write a program to count the number of vowels and consonants in a given string

Objectives

At the end of this lab, the student will be able to

* Define regular expression for vowels and consonants
* Count the number of vowels and consonants

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 2

Title of the Laboratory Exercise: Program to find the longest word in a given string.

1. Introduction and Purpose of Experiment

Students learn to use Lex program to find out the longest word in a given string.

1. Aim and Objectives

Aim

* To write a program to fine the longest word in a given string

Objectives

At the end of this lab, the student will be able to

* Define regular expression for words
* Find the longest word in a given string

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 3

1. Title of the Laboratory Exercise: Program to count no of:
   1. +positive and –negative integers
   2. +positive and –negative fractions
2. Introduction and Purpose of Experiment

.

1. Aim and Objectives

Aim

Objectives

At the end of this lab, the student will be able to

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 4

Title of the Laboratory Exercise: Program to count the number of characters, words, spaces, end of lines in a given input file.

1. Introduction and Purpose of Experiment
2. Aim and Objectives

Aim

* To write a program to

At the end of this lab, the student will be able to

* Define

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 5

Title of the Laboratory Exercise: Program to count the no of ‘scanf’ and ‘printf’ statements in a C program. Replace them with ‘readf’ and ‘writef’ statements respectively.

1. Introduction and Purpose of Experiment

Students learn

1. Aim and Objectives

Aim

* To write a program to

Objectives

At the end of this lab, the student will be able to

* Define

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 6

Title of the Laboratory Exercise: Program to perform addition, subtraction, multiplication, division and power. Note: Without Precedence.

1. Introduction and Purpose of Experiment

Students learn to

1. Aim and Objectives

Aim

* To write a program to

Objectives

At the end of this lab, the student will be able to

* Define

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 7

Title of the Laboratory Exercise: Program to recognize a valid variable, which starts with a letter, followed by any number of letters or digits.

1. Introduction and Purpose of Experiment

Students learn to

1. Aim and Objectives

Aim

* To write a program

Objectives

At the end of this lab, the student will be able to

* Define

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Write yacc program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 8

Title of the Laboratory Exercise: Program to test the syntax of a simple expression and evaluate an arithmetic expression involving operating +, -, \* and /

1. Introduction and Purpose of Experiment

Students learn to

1. Aim and Objectives

Aim

* To write a program to

Objectives

At the end of this lab, the student will be able to

* Define

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Write yacc program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |

# Laboratory 9

Title of the Laboratory Exercise: Program Program to recognize strings ‘aaab’, ‘abbb’, ‘ab’ and ‘a’ using grammar (a^nb^n, n>=0)

1. Introduction and Purpose of Experiment

Students learn

.

1. Aim and Objectives

Aim

* To write

Objectives

At the end of this lab, the student will be able to

* Define

1. Experimental Procedure

Students are required to carry out the following steps:

* Algorithm
* Write the Lex program
* Write yacc program
* Compile and execute the program (steps)
* Complete the documentation for the given problem

1. Presentation of Results
2. Analysis and Discussions
3. Conclusions
4. Comments

a. Limitations of Experiments

b. Limitations of Results

c. Learning happened

d. Recommendations

|  |  |  |
| --- | --- | --- |
| ****Component**** | ****Max Marks**** | ****Marks Obtained**** |
| **Viva** | **6** |  |
| **Results** | **7** |  |
| **Documentation** | **7** |  |
| ****Total**** | ****20**** |  |