**Software Development Laboratory**

**B.Tech. IV Semester**



**Name :**

**Roll Number :**

**Department : Computer Science and Engineering**

**Faculty of Engineering & Technology**

**M. S. Ramaiah University of Applied Sciences**



**M. S. Ramaiah University of Applied Sciences**

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

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| Faculty | Engineering & Technology |
| Programme | B. Tech. in Computer Science and Engineering |
| Year/Semester | 2018/4th Semester |
| Name of the Laboratory | Software Development Laboratory |
| Laboratory Code | 19CSL216A |

List of Experiments

1. Requirements Analysis - I
2. Requirements Analysis - II
3. Use Case Diagram
4. Sequence Diagram
5. UML Modelling: Class Diagrams
6. UML Modelling: State Chart Diagrams
7. Activity Diagram and Data Flow Diagram
8. Entity-Relationship Diagram
9. Implementation of Software Design
10. Software Testing with Test Cases

***Scenario for all labs:***

Various scenarios will be given to students in the lab. Work in groups of 3 and develop the software solution. The Course leader is the customer. Contact the Course leader for any clarifications.

# Index Sheet

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **No.** |  |  |  |  | | **Lab Experiment** | **Viva**  **(6)** | **Results**  **(7)** | **Documentation**  **(7)** | **Total Marks**  **(20)** |
| 1 | Requirements Analysis - I |  |  |  |  |
| 2 | Requirements Analysis - II |  |  |  |  |
| 3 | UML Modelling: Use Case Diagrams |  |  |  |  |
| 4 | UML Modelling: Sequence Diagram |  |  |  |  |
| 5 | UML Modelling: Class Diagram |  |  |  |  |
| 6 | State Chart Diagram |  |  |  |  |
| 7 | Entity-Relationship Diagram |  |  |  |  |
| 8 | Activity Diagram and Data Flow Diagram |  |  |  |  |
| 9 | Implementation and Testing |  |  |  |  |
| 10 | Lab Internal Test conducted along the lines of SEE and valued for 50 Marks and reduced for 20 Marks | | | |  |
|  | **Total Marks** | | | |  |

**Component 1 (Lab Internal Marks) =**

**Signature of the Staff In-charge**

# Laboratory 1

Title of the Laboratory Exercise: Requirements Analysis - I

1. Introduction and Purpose of Experiment

Students get familiar with the documentation and scenario specified for all the lab exercises while analysing the requirements of the scenario

1. Aim and Objectives

Aim

* To develop formal software requirements in a standard format for a given engineering problem

Objectives

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

* + Identify software requirements from problem statement
  + Identify type of a software requirement
  + Create an unambiguous list of software requirements based on interaction with a client

1. Experimental Procedure

* Work in teams of 3 students
* Each team should read the problem statement and identify requirements as a group
* Each team will then confirm the requirements and document the requirements in an SRS document
* Each individual will then write their lab manual, documenting their observations

1. Calculations/Computations/Algorithms
2. Presentation of Results
3. Analysis and Discussions
4. Conclusions
5. Comments

1. Limitations of Experiments

2. Limitations of Results

3. Learning happened

4. Recommendations

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

# Laboratory 2

Title of the Laboratory Exercise: Requirements Analysis - II

1. Introduction and Purpose of Experiment

Students will formally document the identified requirements in an SRS document for the scenario

1. Aim and Objectives

Aim

* To develop formal SRS document in a standard format for a given engineering problem

Objectives

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

* + Identify dependencies of a software requirement
  + Create SRS document in a standard format

1. Experimental Procedure

* Work in teams of 3 students
* Each team should read the problem statement and identify requirements as a group
* Each team will then confirm the requirements and document the requirements in an SRS document
* Each individual will then write their lab manual, documenting their observations

1. Calculations/Computations/Algorithms
2. Presentation of Results
3. Analysis and Discussions
4. Conclusions
5. Comments

1. Limitations of Experiments

2. Limitations of Results

3. Learning happened

4. Recommendations

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