

Software Engineering Lab  
Implementation Report I - Build I

# **Automated Lab Program Evaluator**

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## 1. Basic Information

<Write information about programming languages used, APIs, Libraries, IDEs, any other tools and information on how to run your application>

Automated Lab Program Evaluator is a software for automation of evaluation process during lab exams and tests.

### 1. Basic Information about the Software.

- **Environment :-** Linux or Unix based Operating System.
- **Programming language :-** C++ (specifically C++11)
- **Libraries used :-**
  - bits/stdc++.h
  - unistd
  - signal.h
  - sys/wait.h
- **API used :-**
  - MySQL Connector/C++
- **IDE used :-**
  - Atom C++ IDE
- **Other Tools and Softwares used :-**
  - Sublime Text editor.
  - MySQL server
  - Git version control tool

### 2. Running the Software.

- **Method 1 :**
  - Go into the directory where the Software is stored.
  - Execute `./ALPE`
- **Method 2 :**
  - Go into the directory where the Software is stored.
  - Compile the file "ALPE.cpp" using the following command.

```
sudo g++ src/ALPE.cpp -o ALPE -Wall -I/usr/include/cppconn -L/usr/lib  
-lmysqlcppconn -std=c++11
```

- Execute `./ALPE`



- For more details, refer <https://github.com/Aj163/Automated-Lab-Program-Evaluator/blob/master/README.md>

## 2. Functional Requirements

FRID	NAME	Description
1	Registration	Admin is able to add new Student and Teacher accounts.
2	Login/Logout	Student, Teacher and Admin can Log into and Log out of their respective accounts and carry out their respective functions.
3	View Question	Student is able to view the questions.
4	Submit Solution	Student is able to submit his/her solution for a question as source code.
5	View Submissions	<ol style="list-style-type: none"><li>1. Student is able to view his submitted files.</li><li>2. Teacher is able to retrieve the submitted files of a particular student.</li></ol>
6	Add question	Teacher is able to add and delete Questions for the test/exam.
7	View Results	<ol style="list-style-type: none"><li>1. Teacher is able to view results of the whole class as a spreadsheet.</li><li>2. Student can view, if his/her solution satisfies all the test cases or not, after each submission.</li></ol>

### 3. Functional Requirements (Not Implemented)

FRID	NAME	Description
1	Delete Question	Teacher can delete an existing question

## 4. Screenshots

### 4.1. FRID:FR NAME

1. Login

```
=====
ALPE
=====

Username : 16C0104
Password : root

Type of User :

1. Admin
2. Teacher
3. Student

Enter your choice : 2

Log in Successfull

Hit Enter to continue
```

2. Admin adding new Student Account

```
=====
ALPE
=====

1. Add Teacher
2. Add Student
3. Remove Teacher
4. Remove Student
x. Exit
Enter your choice : 2

New Username : 16C0115

New Password : root

Account was created successfully
Hit Enter to continue
```

3. Admin deleting an existing Student's Account

```
=====
ALPE
=====

1. Add Teacher
2. Add Student
3. Remove Teacher
4. Remove Student
x. Exit
Enter your choice : 4

Username : 16C0115

Account was removed successfully
Hit Enter to continue
```

## 4. Teacher viewing all the submission made by a particular Student

```
=====
ALPE
=====
Question No | Submission ID | Date-Time | Language | Result | Marks
2 | 11 | Fri Mar 16 23:07:27 2018 | C | TLE | 0
2 | 9 | Fri Mar 16 22:58:02 2018 | C | AC | 100
2 | 8 | Fri Mar 16 22:57:15 2018 | C | AC | 100
2 | 3 | Fri Mar 16 20:25:45 2018 | C | AC | 100
3 | 5 | Fri Mar 16 20:28:25 2018 | C | WA | 0
3 | 4 | Fri Mar 16 20:28:00 2018 | C | WA | 0
3 | 2 | Fri Mar 16 20:25:22 2018 | C | WA | 0
5 | 7 | Fri Mar 16 22:54:00 2018 | C | AC | 100
5 | 6 | Fri Mar 16 20:40:20 2018 | C | AC | 100

Do you want to retrieve a submission file? (y/n) : █
```

## 5. Teacher adding a new Question

```
=====
ALPE
=====

Enter path to question file : test/tmpQuestion/question.txt
Enter number of test cases : 2
Enter path to folder containing all test cases : test/tmpTestCases

Uploaded Question
Hit Enter to continue█
```



## 6. Student submitting his/her solution file

```
=====
ALPE
=====

Running on test case 1 ...
Time Limit Exceeded

Running on test case 2 ...
Time Limit Exceeded

Running on test case 3 ...
Time Limit Exceeded

Question Number : 2
Result : TLE
Score : 0 / 100

Hit Enter to continue
```

## 7. Student viewing his/her submissions for a particular a question.

```
=====
ALPE
=====

Submission ID | Date-Time | Language | Result | Marks
3 | Fri Mar 16 20:25:45 2018 | C | AC | 100
8 | Fri Mar 16 22:57:15 2018 | C | AC | 100
9 | Fri Mar 16 22:58:02 2018 | C | AC | 100
11 | Fri Mar 16 23:07:27 2018 | C | TLE | 0

Do you want to retrieve a submission file? (y/n) : y
Enter the submission ID : 3
```

```
#include <stdio.h>

int main(){
    int a;
    int t;
    scanf("%d", &t);
    while(t--){
        scanf("%d", &a);
        printf("%d\n", a);
    }
}
```

submissionFile.c (~ /NITK SEM IV/CO255 - SE Lab/Auto  
Open Save  
C Tab Width: 8 Ln 1, Col 1 INS

## 5. Plan for Next Build / Release

- We have implemented the project according to Classical Waterfall Model, hence no improvements could be done on the requirements.
- In the next build, we plan to,
  - Improve the User Interface.
  - Fix the bugs present.
  - Add support for the submissions to be made in languages other than C.
- We will make a build script for building the project with the required dependencies.

## 6. Summary

This report contains:

1. Basic Information about the software, including the dependencies, and how to run the software.
2. Functional Requirements
3. Non-functional Requirements
4. Screenshots of the software
5. Plans for the next build

