**Analysis of Algorithms**

Spring 2020

**Members Details**

| Group ID | CS311S20PID30 |
| --- | --- |
| Registration Number of Group Members | 2018-CS-22  2018-CS-33 |
| Section | A |

**Project Details**

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| ***Project*** |  |
| Project Title | Activity Scheduling Tool |
| Executive Summary | Our project is an Activity Scheduling Tool. It is a desktop application that generates the timetable automatically after providing it with certain information. The input given to make timetable will be the list of teachers, classroom in which class will be conducted, contact hour list for each subject in a week, list of courses of a session. We will use an “Activity Scheduling” algorithm to make an automatic timetable. We have an option to choose either a web or desktop application for our project. We are using a Desktop application for our project. We worked in C# language for the frontend and used SQL server 2014 Management Studio for database and backend.  *[What is the project about? A clear description of the project. At least 300 words long]* |
| ***Business Case*** |  |
| Outline the business need for the project | *[This section to contain a clear articulation of the business need in the form of a statement that addresses the problem or opportunity. This statement should be no more than three or four sentences]* |
| End user of the product | *[Clearly identify the real life domain and user that you are going to target]* |
| Motivation for Project | Timetable generator was a different project than the other two that were file compression and plagiarism checker. These both were boring projects than the timetable one in our view. Moreover, in the timetable generator, we just need data from the user and we will present data to the user. It means that there is not much use of file handling.  *[This section to contain a clear statement of motivation which drives you to this project]* |
| Description of the project objective(s) | *[Identify the key objectives of the project]* |
| State the level of impact expected should the project proceed and implications of not proceeding | *[State whether the implementation would have an impact at an operational level and/or strategic level and state the impact(s) in 2-3 lines]* |
| Functional Requirements | *[State list of features/services that you have impemented* |
| ***Benefits*** |  |
| What benefits are expected/ anticipated? | *[List of academic/industrial benefits to be achieved]* |
| ***Implementation Details*** |  |
| Link to Github Repository | https://github.com/ayeshatahirme/CS311S20PID30.git |
| Total Number of commits in repository before 8th December 2019 |  |
| Exact contribution of each member |  |
| ***Commits in github repository by each member*** | |
| |  |  | | --- | --- | | **Member Registration No.** | **Total Commits** | | 2018-CS-22 |  | | 2018-CS-33 |  | |  |  | | |
| **Details of commits** | |
| |  |  |  |  | | --- | --- | --- | --- | | **Sr. No.** | **Details of commit** | **Date** | **Member Reg No.** | |  |  |  |  | |  |  |  |  | |  |  |  |  | | |
| Have you used built in algorithms or you have implemented yourself? |  |
| Formats of input | *In which format, input will be given to your system? Provide complete details on input formats.* |
| Validations | *List the validations that you have applied on input with complete details* |
| Format of output | *In which format, output will be expected?* |
| Deployment | *Have you deployed your project in any format? If yes, provide the details* |
| ***Details of algorithms*** | |
| *In this section, you are required to provided details of algorithms used in the project with the pseudo code, one paragraph description of each algorithm, complexity and correctness.* | |
| ***Interfaces for your project*** | |
| *[Add actual interfaces of your project with description of each control in the UI]* | |
| ***Integration*** | |
| *What type of difficulties were faced by you while integration of UI and algorithms. What was your strategy in this regard.* | |
| ***Change Requests*** | |
| We made only one change that was of our algorithm. We first decided to work in the Activity scheduling algorithm and submitted it in the “decision of algorithm” on its respective deadline. We could not implement our algorithm according to what we chose. Then we decided to change our algorithm to the Genetic Algorithm and tried to understand it. We submitted the pseudo-code of the algorithm but its cost was too much that we had to make many changes in the algorithm and finally we implemented our algorithm. It is the greedy choice algorithm. It has a linear cost. It means it is an efficient one. Its cost is θ(n) and it seems to be a good and efficient one, | |
| ***Testing*** | |
| *In this section, you are required to mention the issues report and solution proposed.* | |
| ***Technology*** |  |
| Programming Language | C Sharp (C#) |
| Platform | Desktop Application |