Software Requirement Specification

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TIME TRACK

"Slot in Your Timetable"

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1 Introduction

1.1 Purpose

It is very much difficult for the faculties to put up the time table in each semester for the different class. Even though if they have put up one there is a possibility of getting mistakes in it by collision. so we have came up with the solution "Time Track".

1.2 Overview

Time Track is a software that schedule the timetable of the whole institution for all the different department. The only thing that we need to do is to give in the data and constraints to the program like the number of hours timing the max hours that a faculty should have the area of expertise of the faculty.

1.3 Independent Audience and use

This SRS is for developers, project managers, users and testers. Further the discussion will provide all the internal, external, functional and also non-functional information about "Time Track" the new world to slot the timetable.

1.4 Scope

This project is for the timetable management of our college and it is done with guidance of our professors. It is design solely for our college usage. It ease the timetable establishment during each academic semester. The guideline is to only pass the details of overall timing and the area of expertise of each faculties.

1.5 References

https://www.w3schools.com/django/django_intro.php
https://pygad.readthedocs.io/en/latest/

2 Overall Description

2.1 User Needs

It is used by our college to establish a prefect and better timetable that handle all the different constraints by which it reduces the burden and risk involved in normal timetable making.

In our project, we will be collecting the details of different department and college timing from the college administrator. The administrator will be providing the login to the department head or the the timetable manager of each department the permission to add the details of faculties and there subject. He/She should also provide the maximum number of hours that each faculty can have during a week.

2.2 Assumptions and Dependencies

Our project will be a web application that works on python framework using Django. So in Django we will be designing a genetic algorithm for analyzing different possibilities based ion different assumptions condition and criteria. The best among the created is chosen by the program it self and will be imported as an excel or PDF of printable format.

3 Functional Requirement

3.1 Module descriptions

We will be creating a web application using HTML and CSS, the back-end is based Django which access data from SQL database. Genetic algorithm,which is a method for solving both constrained and unconstrained optimization problems that is based on natural selection, the process that drives biological evolution. the genetic algorithm will take a time of around 10-15 minutes to outcome with the timetable it analyzes and makers out different assumptions and choose the best from all that.

4 External Interface Requirement

4.1 User Interface

We will be providing a simple interface with different options for adding details of the department, faculties and there conditions like how many hour and how may different classes that they can have and there area of subject interest.

4.2 Hardware Interface

The minimum requirement of the hardware interface should include:

- Processor : Intel i3 or above
- RAM : 4 GB
- Windows Operating System
- A browser which supports CGI, HTML and JavaScript

4.3 Software Interface

For the development of our software we've used the following interfaces:

- Operating System: We have preferred the use of windows as it is the common OS and its friendly and readily available
- Front end: As we are developing a web-application we have preferred the use of HTML,CSS,Java Script which are the commonly use and reliable source.
- Back-end: We have preferred the use of Django as it is a python based web framework and open source libraries are also available as well.

4.4 Communication Interface

Here, we use web browser as our communication interface where the administrator can login and provide the constraints.The web application can be easily accessible via internet.

5 Non Functional Requirement

5.1 Performance Requirements

Our system is compatible with all kind of web browser from 2018 on-wards.

5.2 Safety Requirements

All data insertions,logged information,data updation, user activities are backup instantaneously in a different location than that of the original storage so any damage in the original section will not affect the originally stored condition every time user exit a backup it is saved to that location of the past 20 exits

5.3 Security Requirements

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

5.4 Software Quality Requirements

- AVAILABILITY: The particular web browser will be available for users at any time as they can create their own timetable.This creates the user to take their own time to fill in the procedures and get the desirable output.
- CORRECTNESS: The required attributes for creation of timetable must be entered with proper validation.The correctness of the output will be based on this criteria.
- USABILITY: The time table management system would satisfy a maximum number of customers needs.