**Python Project: Time Table**

**What is understood?**

We have to a create a timetable.

Should produce timetable for given:

1. Section
2. teacher

**Data given:**

Fixed data:

1. 5 sections – A, B, C, D, E
2. 5 Subjects – Math, Science, Hindi, English, Economics
3. 5 days – Monday, Tuesday, Wednesday, Thursday, Friday
4. 4 classes per day – (8-9), (9-10), (10-11), (11-12)
5. Subjects taught by each teacher = 3

Variable Data:

1. Number of teachers = N

**Data Structure Design:**

Description:

Timetable will be represented as Dictionary of Lists of Dictionaries

Dictionary with 5 key value pairs:

1. KEYS: Will be the days of the week (Mon, Tue, Wed, Thur and Fri)
2. Values: List of 5 dictionaries each representing one section (A, B, C, D and E). Each dictionary will have 4 key value pairs:
   1. Keys: Teacher name
   2. Value: Subject

Timetable = {

MON : [{T1:S1, A2, A3, A4}, [B1,B2,B3.B4], [C1,C2,C3,C4], [D1,D2,D3,D4,D5], [E1,E2,E3,E4,E5]],

TUE : [[A1, A2, A3, A4], [B1,B2,B3.B4], [C1,C2,C3,C4], [D1,D2,D3,D4,D5], [E1,E2,E3,E4,E5]],

WED : [[A1, A2, A3, A4], [B1,B2,B3.B4], [C1,C2,C3,C4], [D1,D2,D3,D4,D5], [E1,E2,E3,E4,E5]],

THUR : [[A1, A2, A3, A4], [B1,B2,B3.B4], [C1,C2,C3,C4], [D1,D2,D3,D4,D5], [E1,E2,E3,E4,E5]],

FRI : [[A1, A2, A3, A4], [B1,B2,B3.B4], [C1,C2,C3,C4], [D1,D2,D3,D4,D5], [E1,E2,E3,E4,E5]] }

A1 – E5 will be in the form {teacher: subject}

**Conditions:**

**Formulas:**

Number of Teachers = ((Number of Sections \* Number of Hours/day) // (Number of Subjects/Teacher)) + 1

**Modules:**

Main Module:

Initiate the Timetable data structure

Initiate\_timetable(time):

pass

Fill in the data structure

Display the data structure

Fixed Data:

Sections = []

Days = []

Subjects = []

Number of hours/day

Test case examples:

Check if there is a clash

**Idea of the testing team: break the design of the previous teams code**

Derived Data:

Number of Sections = len(Sections)

Number of days = len(Days)

Number of subject len(Subjects)

Number of teachers = ((Number of Sections \* Number of Hours/day) // (Number of Subjects/Teacher)) + 1

For I in range(Number of teachers):

Teachers\_Subjects[Ti] = [None, None, None]

**Goal:**

Fixed Data is a .txt file which consists of the following data:

Sections

Days

Number of Hours per Day

Subjects

Number of Subjects per Teacher

Teacher Names

Daily Hours Limit per Teacher

Derived data is a python file that reads the fixed data file and stores the important data in variables.

Main2.py file