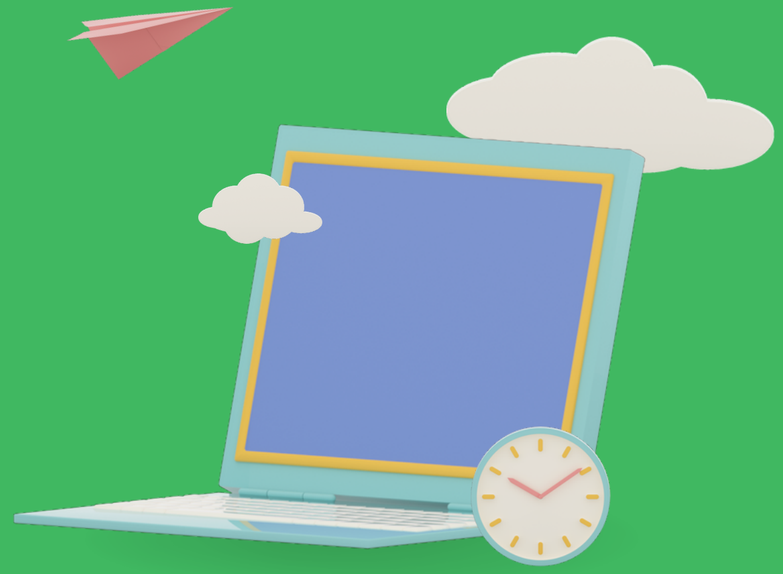
PUNE INSTITUTE OF COMPUTER TECHNOLOGY

Automatic Time-Table Generator

Smarter way to track time



10455-Kshitija
10461-Arya
10462-Abhishek
10463-Poonam
10474-Maitreyee

TEAM 2C42022

Our Objective

To Avoid complexity of manual work for setting and managing timetable for schools and colleges.

Literature survey

Research Paper 1:

Timetable Handling Mechanism Using Python
March 2020International Journal of Scientific & Technology Research 8(11):631-635
Authors: jasdev Bhatti
Chitkara University
CONCLUSION: This paper has developed the approach of an automated time table system that helps in creating the timetable in three different categories: faculty, class wise classroom wise timetable.

Research Paper 2:

Online Application of Automatic Time-Table Generator:

V. Abhinaya1, K. Sahithi2, K. Akaanksha3

EA (Evolutionary algorithm) is used to solve a large limitations-based university timetable issue. In their approach Heuristics and context-based reasoning methods are utilized for achieving realistic timetables in minimum time. A combinatorial optimization problem developed to solve the university timetabling problem

Research Paper 3:

A mimetic algorithm for university course timetabling problem. Author: Sadaf N. Jat, Shengxiang Yang “Shengxiang Yang, Member, IEEE, and Sadaf Naseem Jat”paper investigates genetic algorithms (GAs) with a guided search strategy and local search (LS) techniques for the UCTP. The guided search strategy is used The LS techniques use their exploitive search ability to improve the search efficiency of the proposed GAs and the quality of individuals.

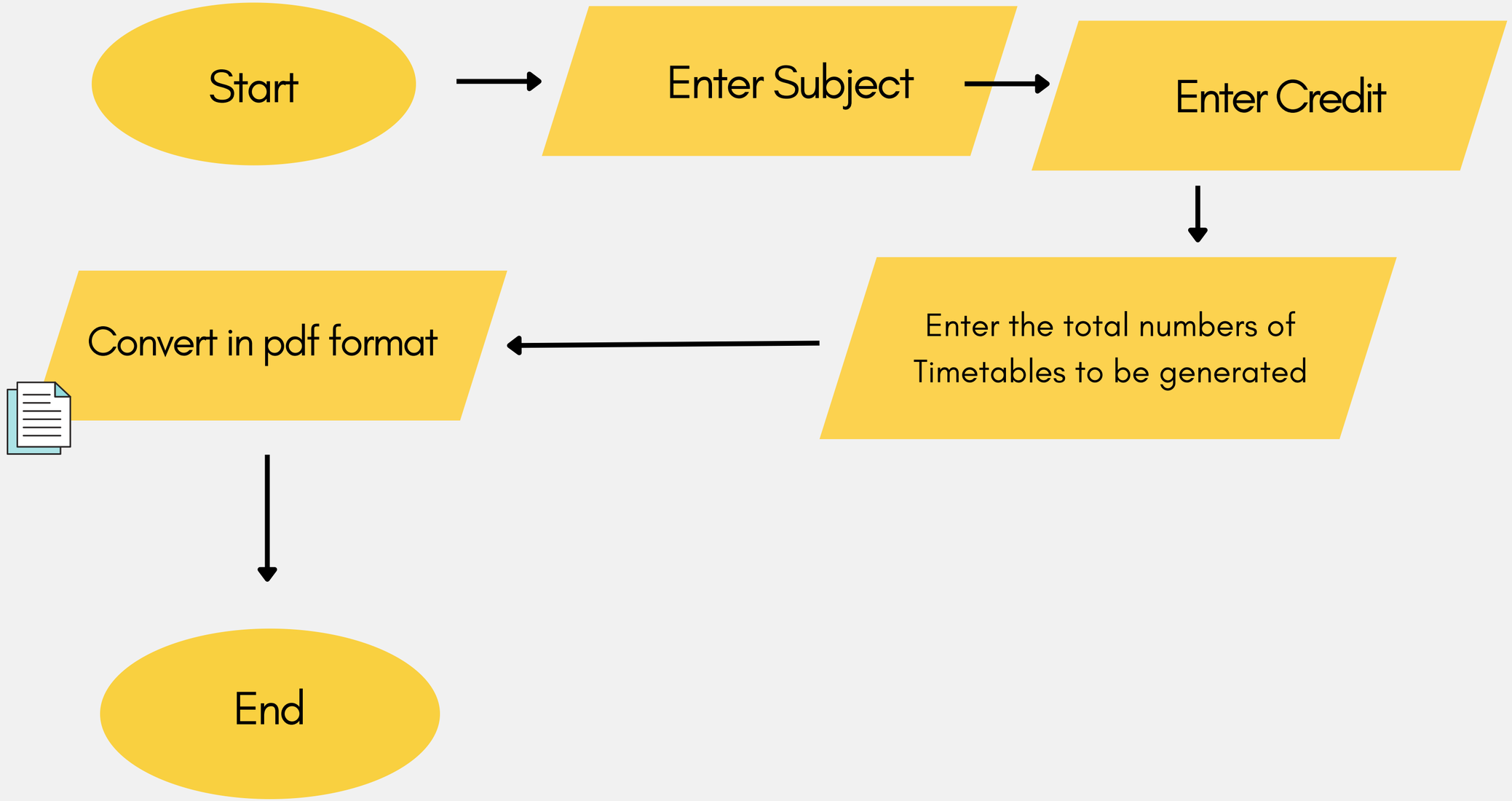
Research Paper 4:

Title:Constraint programming approach for school timetabling

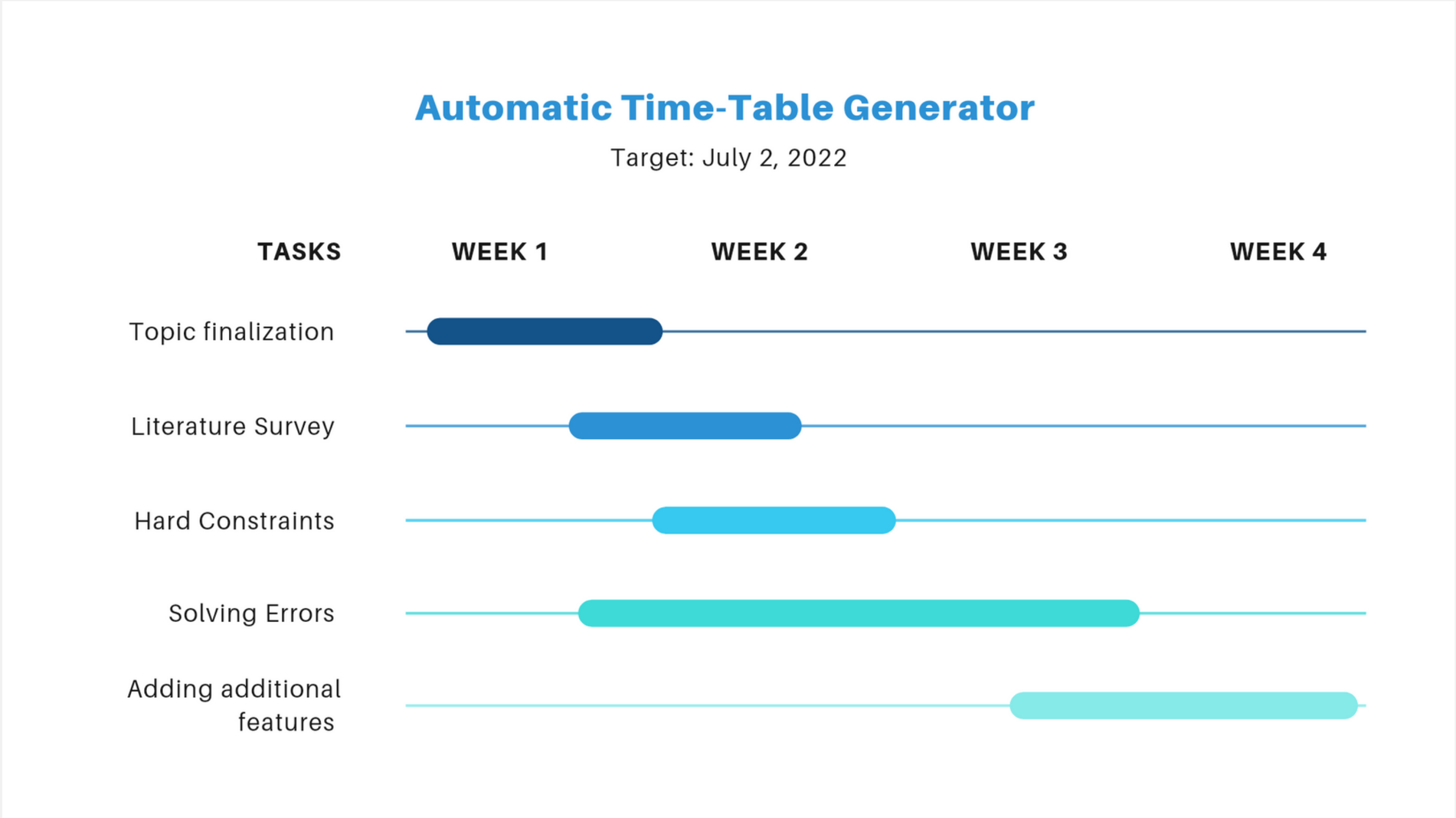
Author:Christos Valouxis ,Efthymios Housos

•Schaerf A. A survey of automated timetabling. Arti3cial Intelligence Review 1999;13:87–127.

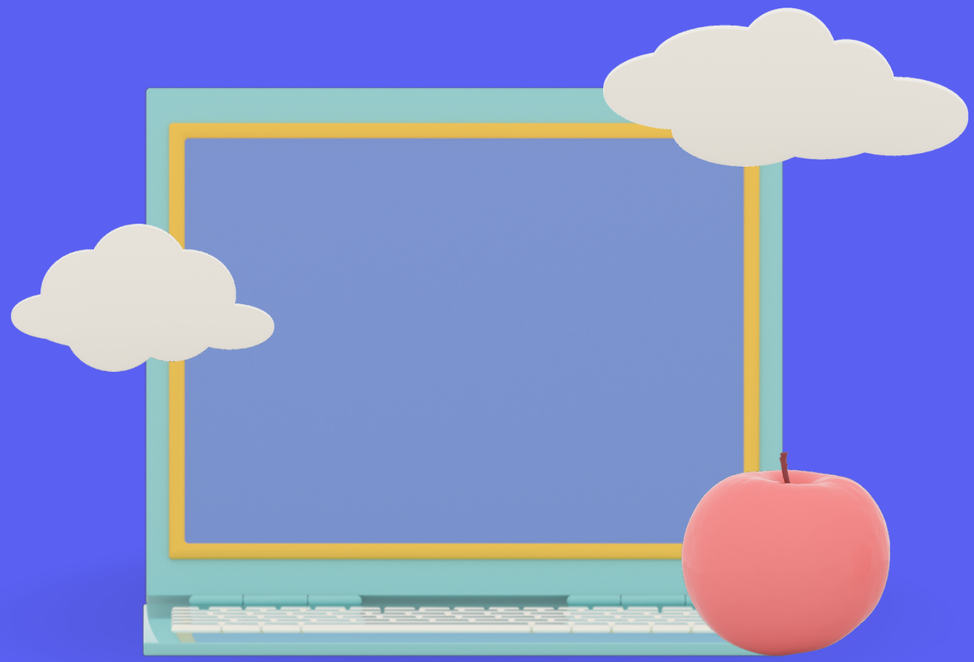
Flowchart :


Start
Enter Subject
Enter Credit
Enter the total numbers of
Timetables to be generated
Convert in pdf format
End

Gantt Chart


Automatic Time-Table Generator
Target: July 2, 2022
TASKS
WEEK 1
WEEK 2
WEEK 3
WEEK 4
Topic finalization
Literature Survey
Hard Constraints
Solving Errors
Adding additional features

Lines of Code



Python

Rules considered in order to create a viable Timetable .

Input subjects and their credits.

Arrange subjects in a matrix according to the credits.

Adding days and timings to the timetable

Displaying the timetables according to the user's input.

Pdf form of the timetables will be made available to the user.

Hard Constraints

1. The credits should not exceed the total number of subjects. If the credits are less than “CCA” will be allotted for the remaining lectures.

Code:

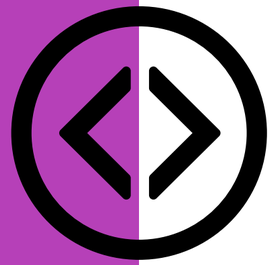
```
if(d>30):
print("invalid input")
else:
for i in range(0, 30-d):
ele = "cca"
lst.append(ele)
```

Code:

```
m=np.array(matrix)
matrix1=m.T

for e in range(5):

random.shuffle(matrix1[e])
m1=np.array(matrix1)
matrix2=m1.T
```



Hard Constraints

2. No subjects should repeat in a day
3. No two days should have the same timetable

Illustration:

M	T	W	T	F
A	A	A	A	A
B	B	B	B	C
C	C	C	D	D
D	D	D	E	E

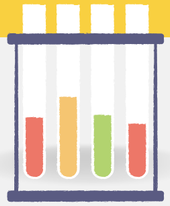
M	T	W	T	F
A	B	C	E	D
C	A	B	B	A
B	D	A	D	C
D	C	D	A	E

Output :

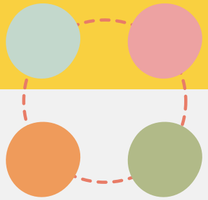
```
/Users/abhishekmasne/PycharmPro
 /Users/abhishekmasne/PycharmPr
Enter number of subjects: 7
enter subjectPBL
enter frequency4
enter subjectSME
enter frequency4
enter subjectPHY
enter frequency4
enter subjectBXE
enter frequency4
enter subjectEM2
enter frequency4
enter subjectES2
```

```
-----FE 4------
TIME   MON   TUE   WED   THU   FRI
8-9    PHY   EM2   BXE   PBL   EM2
9-10   ES2   ES2   EM2   CCA   BXE
10-11  BXE   CHE   PBL   EM2   SME
11-12  CHE   SME   ES2   ES2   CCA
12-1   PBL   PHY   SME   PHY   CHE
1-2    SME   PBL   CHE   BXE   PHY
-----FE 5------
TIME   MON   TUE   WED   THU   FRI
8-9    SME   SME   SME   CCA   EM2
9-10   ES2   PBL   EM2   ES2   SME
10-11  CHE   CHE   CHE   BXE   BXE
11-12  PHY   ES2   ES2   PBL   CHE
12-1   PBL   PHY   PBL   PHY   CCA
1-2    BXE   EM2   BXE   EM2   PHY
```

Future Improvements



Addition of Breaks and Labs lectures



Management of rooms according to the timetable

Faculty Timetables

Conclusion:

It is complicated task to handle many Faculty's and allocating subjects for them at a time manually. So our proposed system will overcome this disadvantage. Thus we can produce timetable for any number of courses and multiple semesters. This system will help to create dynamic pages so that for implementing such a system, we can make use of the different tools which are widely applicable and free to use also.

Thank you for your time!