TIME - TABLE MANAGEMENT SOFTWARE

GROUP - CE4

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Background

- All educational institutes require time table for their proper functioning.
- Educational institutes regularly face problem of timetable generation / maintenance.
- Manual timetable scheduling is time and effort consuming task.
- Present solutions to the problem follow fully automated or manual approach and doesn't support personalization.

ABSTRACT

- Timetable generation belongs to the class of combinatorial optimization problems. We have implemented a semi automated approach for solving this constraint heavy problem for educational institutes like College of Engineering Pune (COEP). It will allow the users to make time table as per his/her choice while ensuring that no constraints are violated.

- We have developed a desktop application using Object Oriented Programming paradigm with a user friendly interface.

LITERATURE REVIEW

- Existing solutions like FET , aSc Timetable and Mimosa Scheduling Software

Features	FET	aSc Timetable	Mimosa
Automatic/Manual	Fully automatic Semi automatic	Both	Both
Platform	Windows, GNU/Linux, MacOS	Windows, GNU/Linux MacOS	Windows, GNU/Linux MacOS
Import data files	Yes	Yes	Yes
Export	Html, csv,xml	Html,xml,csv	Html,xml,csv
Open source	Yes	No	No

Proposed Solution

Features	Proposed Solution
Automatic / Manual	Semi automated
Platform	Windows or GNU / Linux
Import data files	Yes
Export	Html, pdf, **ods**
Open source	Yes

Features of proposed solution

- Quantification of constraints.
- Semi-automated approach.
- Dynamic checking of constraints.
- Venue utilization statistics.

- Data mapping and filtering.
- User friendly GUI.
- Open source.
- Export in popular formats (**ods**, **pdf**, **html**).

SYSTEM REQUIREMENTS

The minimum hardware requirements are same as that of Python

- Memory (RAM) : 512 MB of RAM required.
- Hard disk space : minimum 1GB free space required.
- Processor : Intel Pentium 4 or later

The Minimum Software Requirements

- Operating System : *Windows or GNU / Linux .*
- *Python 2.7 .*
- Python modules *: wxPython, ezodf, pickle, pdfkit.*
- *wxWidgets.*

Supported Constraints

Hard Constraints

- No clashes in *teacher* / *venue* / *class* timetable.
- *Batches* should not clash with its class timetable
- Allocated hours should not exceed maximum number of hours for subject.

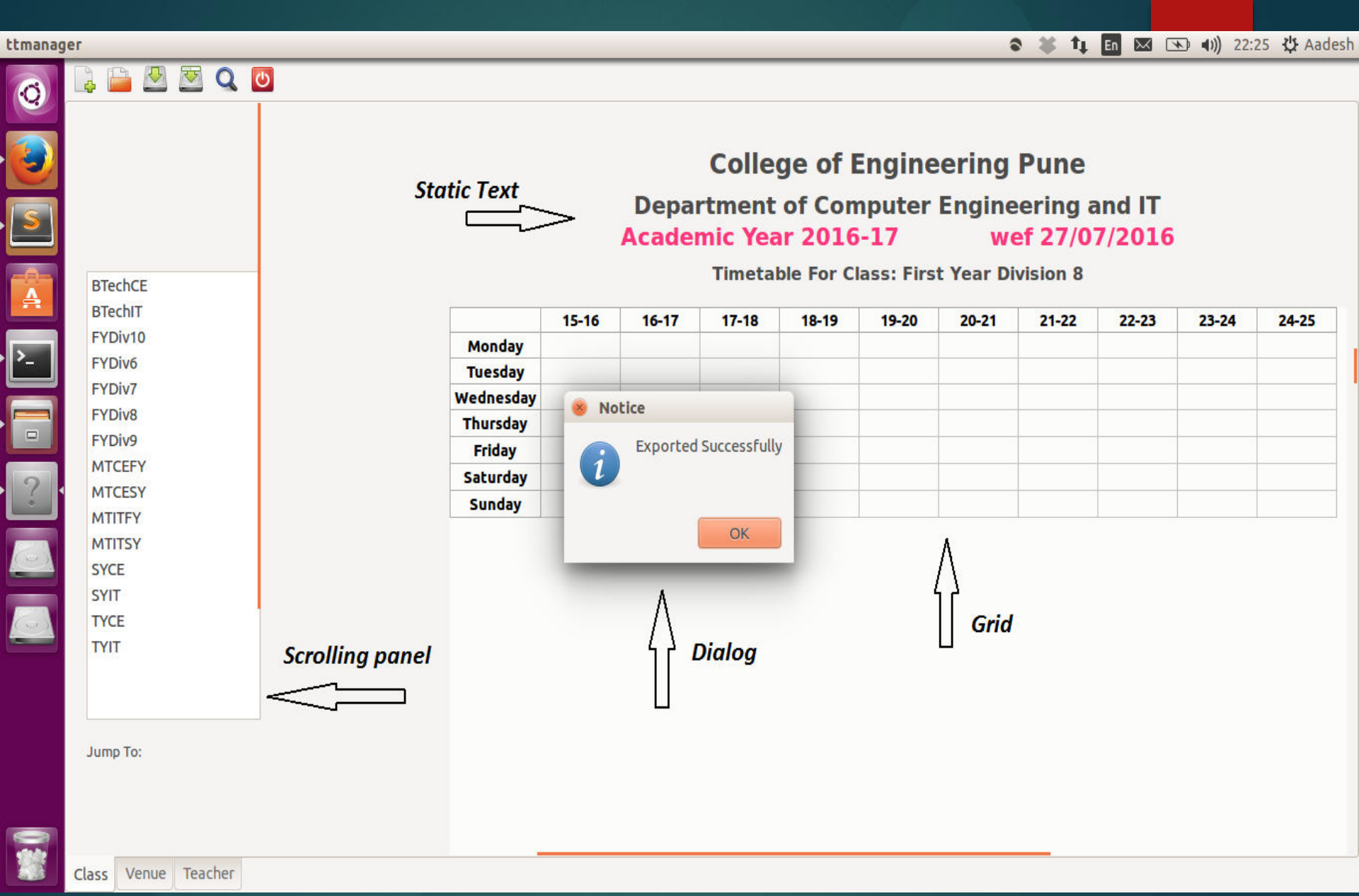
Soft Constraints

- Maximum *teacher* workload.
- *Venue-Class* capacity checking.
- Compulsory lunch break for *class / batch*.
- Allocated hours should not be less than specified number of hours for the subject.

Implementation

Front End

- Grid : *wx.grid*
- Windows : *wx.dialog*
- List : *wx.Listctrl*
- Panels : *wx.lib.scrolledpanel*
- Dropdown : *wx.ComboBox*
- Titles : *wx.StaticText*


ttmanager
22:25
Aadesh
Static Text
College of Engineering Pune
Department of Computer Engineering and IT
Academic Year 2016-17
wef 27/07/2016
Timetable For Class: First Year Division 8
BTechCE
BTechIT
FYDiv10
FYDiv6
FYDiv7
FYDiv8
FYDiv9
MTCEFY
MTCESY
MTITFY
MTITSY
SYCE
SYIT
TYCE
TYIT
Jump To:
Scrolling panel
15-16
16-17
17-18
18-19
19-20
20-21
21-22
22-23
23-24
24-25
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Notice
Exported Successfully
OK
Dialog
Grid
Class
Venue
Teacher

Back end

Backend provides following functions

- Insert a normal entry.
- Add new *teacher / venue / class.*
- Remove entry.
- Find venue utilization.

- Export in *ods, pdf, html* format.
- Verify constraints.
- Insert lunch entry.
- Exceptions :
  - ExistingEntry exception
  - ExtraWorkLoad exception
  - LimitForSubject exception
  - DailyWorkLoad exception

Demo

Future scope :

- Automatic timetable generation.
- Port to a web-platform.
- Improvements in GUI.

Thank You