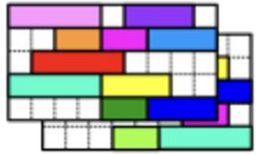

UniTime: Agile API Creation to Supply Data to Other Systems

Stephanie Schluttenhofer
Purdue University
UniTime, LLC

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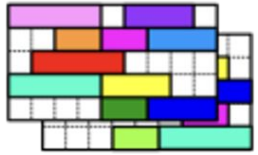


What is UniTime?

Making UniTime Data Useful To Others

API’s On The Fly

Demo

Questions

What is UniTime?

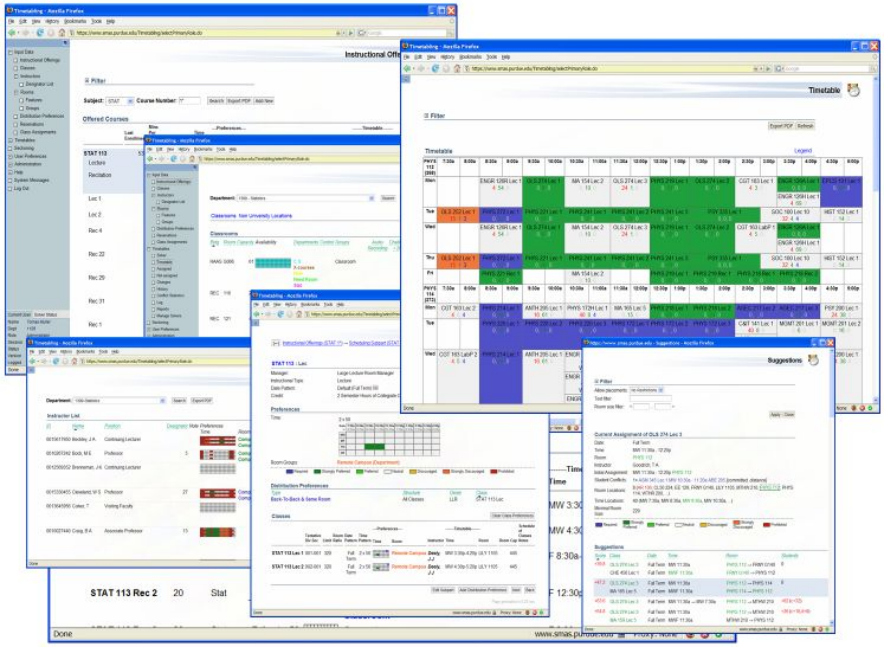
UniTime

Comprehensive Academic Scheduling Solution

Five Components: Course Timetabling, Student Scheduling, Exam Timetabling, Instructor Scheduling, Event Management

Uses State of the Art Optimization Algorythms

Web-Based Distributed Data Entry and Timetabling in a Multi-User Environment



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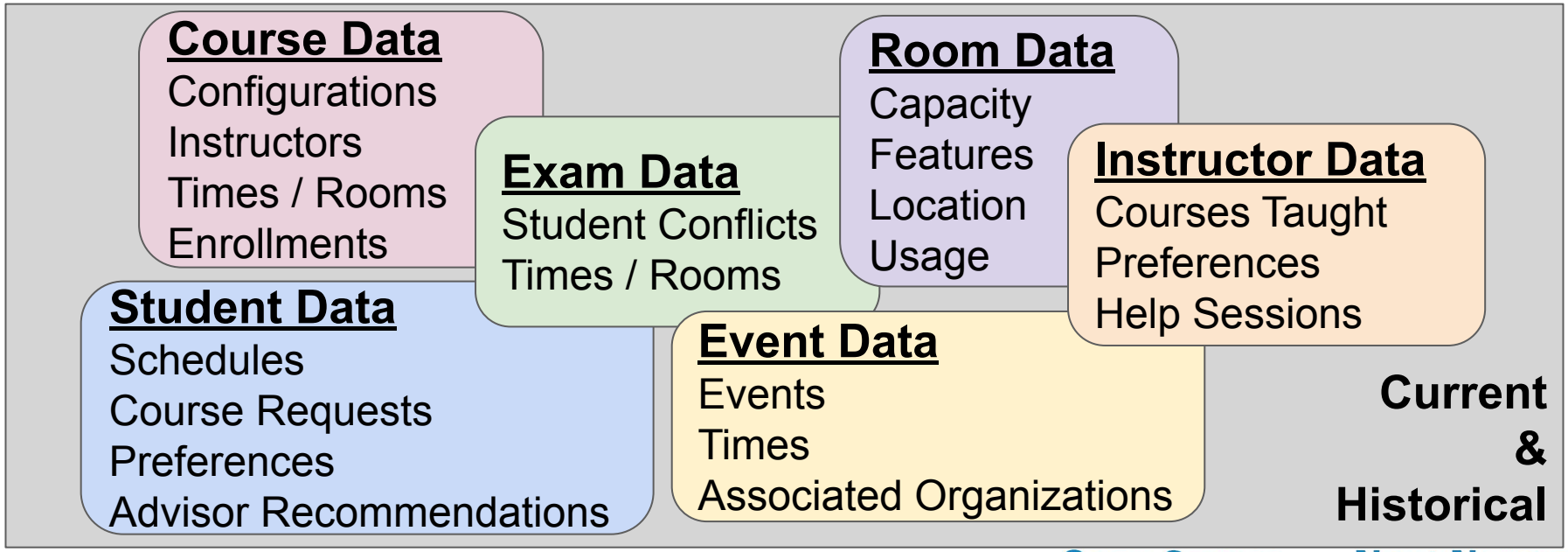
Making UniTime Data Useful To Others

UniTime Contains A Large Amount of Data



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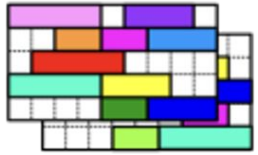


Making UniTime Data Useful To Others

UniTime Has Many Standard API's for Extracting Data

User Roles

Curricula

Instructors

Data Exchange

Buildings

Class Info

Enrollments

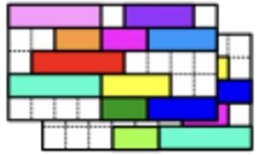
Online Student Scheduling

Instructor Schedule

Student Groups

Rooms

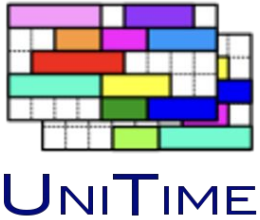
Events



UniTime

API's On The Fly

UniTime Has Two Non-Standard API's for Extracting Data



API's On The Fly

HQL Report API - Quick and Easy

Administrators Can Create Reports Through the HQL Reports User Interface That Other Users Can Run

Any Stored HQL Report Can Be Run As an API Call

Secured Via a User Token

Can Return Data in CSV, JSON, or XLS format

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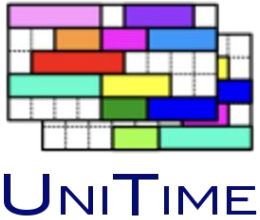


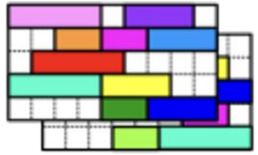
API's On The Fly

HQL Report API - Sample Call

Call: curl "http://localhost:8080/UniTime/export?output=hql-report.csv&term=Fall2021PWL&token=FIXME&&report=Courses:+Current+Enrollment+Versus+Last+Like+Enrollment"

Output:

```
"Subject","Course","Current_Enrollment","Last_Like_Enrollment"
"AAE","19000","0","0"
"AAE","20000","326","261"
"AAE","20300","357","273"
"AAE","20400","68","71"
"AAE","20401","93","73"
"AAE","25100","250","202"
"AAE","29199","0","7"
...
```



API's On The Fly

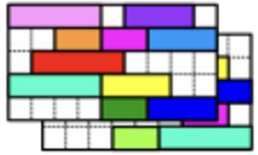
Script API - When Something More Complex is Needed

The Script User Interface Allows Administrators to Create, Store, and Run Scripts That Use Scripting Languages to Call UniTime Java Code

Any Script Can Be Run As an API

Secured Via a User Token

Can Return Data in Any Format the Script Creator Wishes to Support



API's On The Fly

Script API - Sample Call

Call: curl "https://timetable.mypurdue.purdue.edu/Timetabling/api/script?term=Summer2021PWL&script=Course%20Reports%3A%20%20Course%20History%20Enrollment%20By%20Major&token=$(cat token.txt)&queue=false&yearsOfHistory=1"

Output:

Subject Area,Course Number,Campus,Term,Year,Major,Enrollment
AAE,20300,PWL,Summer,2021,AAE,10
AAE,20300,PWL,Summer,2020,AAE,22
AAE,20300,PWL,Summer,2021,ECEB,2
AAE,20300,PWL,Summer,2020,ECEB,5
AAE,20300,PWL,Summer,2021,ENFY,4
AAE,20300,PWL,Summer,2020,ENFY,5
...

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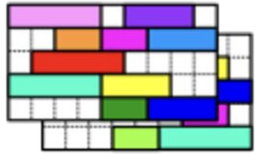


API's On The Fly

The Applications are Endless

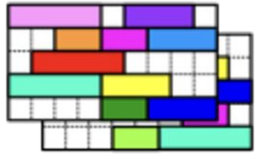
Data for Tableau Dashboards

Data for Homegrown Applications

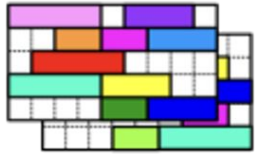
Data for Commercial Applications

Data for a Student Information System

It Would Be Helpful If ….



Demo



Questions

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UniTime

Thank You!

UniTime - https://unitime.org

Stephanie Schluttenhofer (says@unitime.org)

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