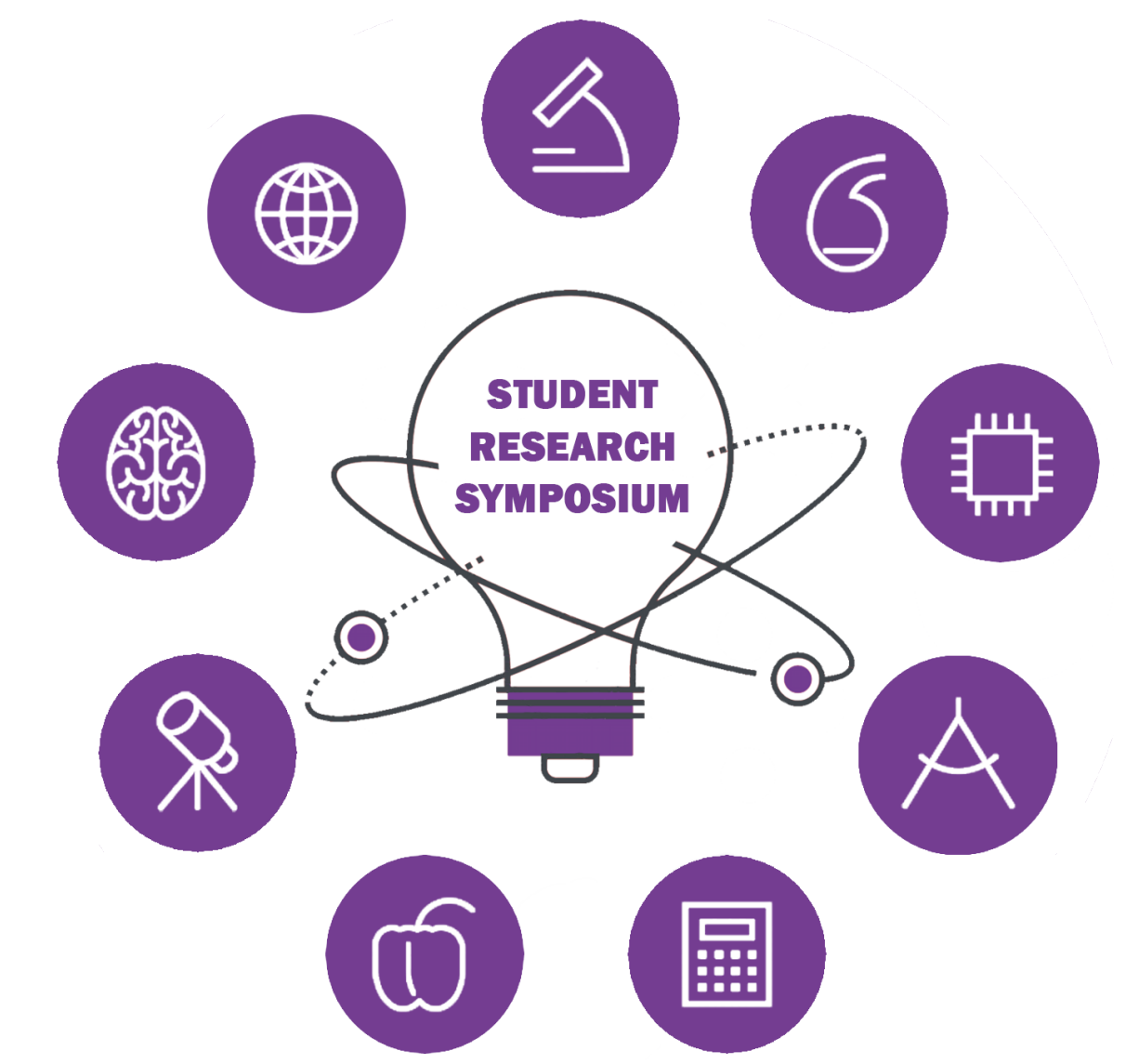


SRS Revisited: Recreation of the Student Research Symposium Website and Submission-Review System



James Stewart, Quang Nguyen, Michael Giba, Thaddeus Rix, Son Nguyen
Advisors: Dr. Liran Ma, Mr. Billy Farmer, Dr. Donnell Payne

Problem

- The previous system was outdated with limited capability to collect, manage, review, and present research projects.
- There has been a growing need to make a multifaceted system that could provide smart interfaces for various users that would allow for secure submitting, voting, and administrating.
- Limitations of previous system include:
 - Deficient database design
 - Insufficient report functionality
 - Inadequate administrative controls
 - Not mobile friendly
 - Unsatisfactory user interface

Solution

- Our project addresses these issues by:
- Redesigning and restructuring the SRS site
 - Applying modern GUI design
 - Designing with UX/UI in mind
 - Engineering a device-agnostic site
 - Building a new submission/review system with new tools and features
 - Creating an admin panel
 - Architecting a relational database
 - Enhancing report functionality

Database Structure

- Formed a multi-year relational database that ensures easy annual SRS setup
- Redesigned to better support archiving SRS event information annually
- Optimized schema to third normal form
- Created a complex database model to accommodate multiple user roles
- Can be easily managed from the admin panel instead of manual queries

Technologies Used

- Django V1.9
- Python V2.7.12
- Semantic UI V2.2.4
- PostgreSQL V9.6
- Apache V2.4.6
- VM Centos Linux Server Image V7

Old Table Assignment Method

Old site on desktop and mobile

Final table assignment before creation of Poster Guide

There were over a dozen steps involved with table assignment alone

New Table Assignment Method

- The new admin interface takes previously laborious tasks and makes them trivial, as seen in the following steps to generate table assignments
 - Once the "Generate table assignment" is executed, the table assignments are made
 - The assignment algorithm eliminates human overhead and allocates a perfect table distribution
 - Printing the poster guide is no longer necessary; relevant info is visible on the site and the admin panel

SRS Admin Panel

Site administration

Authentication and authorization

Groups: Add Change

Users: Add Change

SRS Admin: Add Change

Announcements: Add Change

Building layouts: Add Change

Chairs: Add Change

Deadlines: Add Change

Departments: Add Change

Events: Add Change

Home page images: Add Change

Poster locations: Add Change

Sci com logos: Add Change

Speakers: Add Change

Srs committee members: Add Change

Years: Add Change

Submission

Advisors: Add Change

Authors: Add Change

Guests: Add Change

Special requests: Add Change

Submission accounts: Add Change

Winners: Add Change

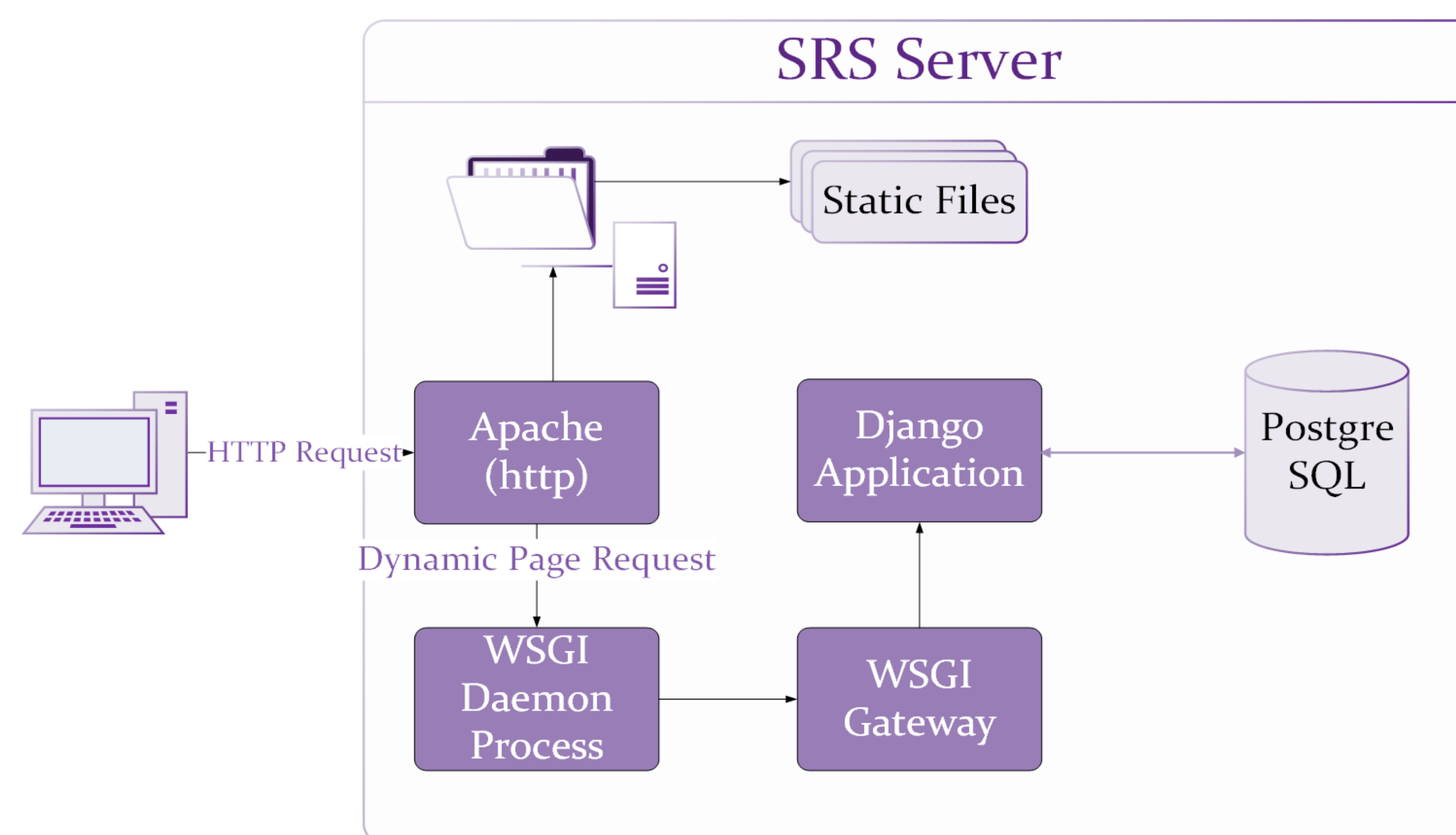
SRS Admin Panel: Select submission account to change

Select submission account to change

Action: Add Change

System Architecture

- Presented below is the structure of the web application development stack we chose to implement the for SRS system
- An Apache server instance is responsible for dividing up requests between static resources and dynamically generated pages



Submissions and Balloting

Registration Page

All Submissions Page

Submission Portal

Ballot

Submission Registration

Primary Contact Information

Poster Information

Ballot

TCU Student Research Symposium Ballot

Judging Year: 2017

Judging Chair: Michael Giba

Judging Department: PSIC

Poster #

Poster Title

Author

Advisor

Score

Advisor Information

Primary Contact Information

Poster Information

Admin Panel

- Allows for simpler, faster completion of administrative duties related to the SRS event
- Allows for easy creation of new tools as well as oversight on permissions of admin users
- Admin User Groups
 - Superusers (total access)
 - Dean's Office (name badges, name lists)
 - SRS Coordinator (table assignment and special requests)

Assignment Algorithm

- Previous set of procedures for table assignment have been consolidated to a single auto-function
- Ensures most optimal distribution of posters across all tables, floors, and sessions.
- Preprocessing function organizes tables for most optimal layout based on table desirability and the number of posters

User Experience

- Must guide user traffic in an effective and attractive way
- Must handle user registrations, submissions, and department chairs' selection of winners
- Must be device-agnostic, OS-agnostic, and mobile friendly

Results and Conclusions

- Changes to the administrative process have greatly improved workflows for the faculty who are a part of SRS
- With the new design, there are many opportunities for future improvements that previously were not possible

Acknowledgments

- We would like to thank Dr. Payne for bringing this project to us and for staying on our heels these last several months. It has been an honor and a pleasure working with and struggling alongside her and our clients for the project, Dr. Ma and Mr. Farmer. Both of whom helped enormously as liaisons and translators between us and the other Science and Engineering departments. An additional thanks goes to Dr. Ma for his server admin work, without which we would have nothing.

References

Bootstrap Documentation – <http://getbootstrap.com/css/>
 Poster Assignment Algorithm – <http://www.geeksforgeeks.org/>
 Django Documentation V1.9 – <https://docs.djangoproject.com/en/1.9/>

Django Getting Started – <https://www.djangoproject.com/start/>
 Django Daft Templating – <https://docs.djangoproject.com/en/1.9/topics/templates/>
 Django Admin Panel – <https://docs.djangoproject.com/en/1.9/ref/contrib/admin/>