DEPARTMENT OF
Computer Science

TCU COLLEGE OF SCIENCE & ENGINEERING

TCU/UNTHSC Medical School Longitudinal Integrated Clerkship Scheduler

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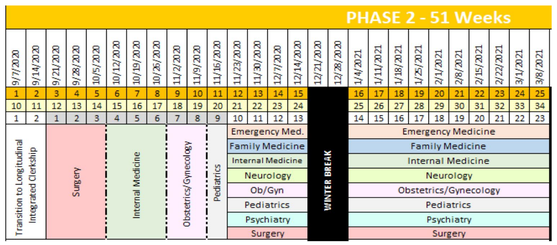
TCU UNT HEALTH SCIENCE CENTER

The TCU/UNTHSC Medical School

TCU and UNTHSC have joined together to bring a medical school to Fort Worth, and more broadly redefine medical education. The School of Medicine will positively impact the city of Fort Worth, and is projected to bring $4B annually to the community, starting in 2030. The School of Medicine received its preliminary accreditation in October of 2018. The inaugural class will begin their studies in July of 2019.

What is LIC?

- LIC (Longitudinal Integrated Clerkship) has students perform clerkships in parallel, instead of one at a time.
- Allows students to be up to date on all specialties at all times, instead of having large time gaps between learning a specialty and practicing it after Medical School.



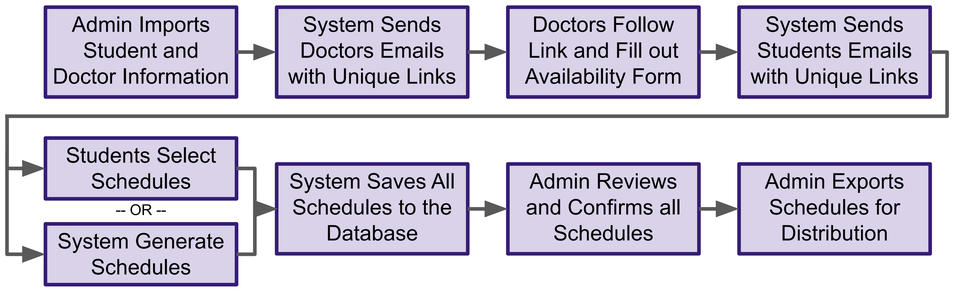
Our Goals

- To provide an application which solves the problem of scheduling all student's LIC schedule.
- This application needs to support admin features, such as viewing and exporting of schedules, for the management of LIC information.
- The application needs to be able to be used every year, for every new batch of students.
- The application needs to securely store student and doctor information.

Our Solution

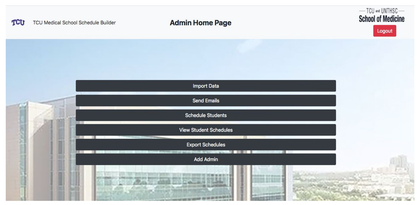
Using the Java based Spring framework, we have produced a web application which satisfies the goals above. This application utilizes the latest in web technology to meet the project's requirements, with a focus on clean simple user interfaces, and flawless functionality.

Workflow



Admin Panel

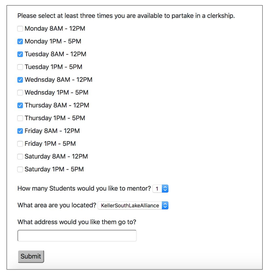
The LIC Administrator's Panel provides all the important system functions. The admin controls what information is uploaded and when the emails are sent out. An admin can also access all the data here.



Doctor Form

Doctors are responsible for indicating when they would be available to mentor a student.

Each doctor is sent a unique link to access this form.

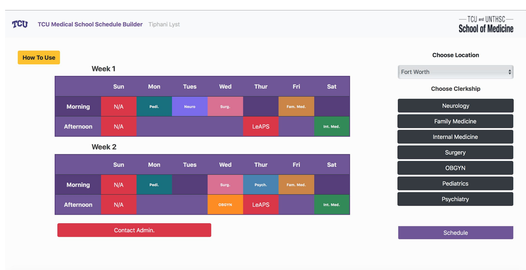


Student Schedule Selection

This scheduling menu allows students to select their two week recurring schedule.

Students will select the location where they wish their clerkship to be, select which clerkship they wish to schedule, and then select which time slot to schedule to that clerkship for.

The interactive calendar shows available time slots, depending on doctor availability, location chosen, and official school programs.

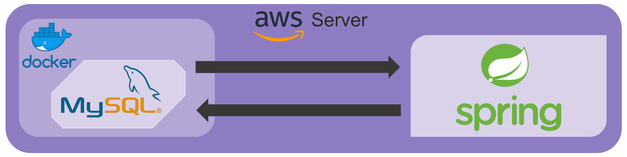


System Architecture

The application is hosted on an AWS server that has:

- CentOS 7 operating system
- 4 GB memory
- 2 CPUs
- 3.3 GHz Processor

The application is a Spring program running on an AWS server. The application interacts with a MySQL database running within a Docker container on the same server.



Technical Details

- Spring Boot Framework - Java, Thymeleaf, Javascript
- MySQL Database
- Hosting on AWS Server
- Agile Methodology - Two-week programming sprints
- Extensive Documentation, including Developer's Manual, Software Development Plan, Vision Document, Use Cases, etc.
- Version Control - Github, IntelliJ VCS

Acknowledgements

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We would also like to thank Dr. Wei, for putting us on this project and helping teach us throughout this process.

References

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Spring Framework - https://spring.io
IntelliJ IDE - https://www.jetbrains.com/idea/
MySQL - https://www.mysql.com