



Medical School LIC Scheduler

User Manual

Version 1.1

The Yellow Walkman

Revision History

Date	Version	Description	Author
06/April/2019	1.0	Initial Draft	Katie Ortstadt
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User's Manual

1. Introduction

1.1 Purpose

The purpose of the *User's Manual* is to provide a comprehensive guide for using our project. It describes how to run and successfully use our application. It also shows how to access Amazon Web Service (AWS) and control the website.

1.2 Project Overview

The new TCU and UNTHSC School of Medicine is taking a progressive approach to curriculum for their students. The standard for medical clerkships is for a medical student to focus on one practice, then move on to the next practice. This leaves a gap of time between learning and implementing a medical practice in the real world. The Longitudinal Integrated Clerkship (LIC) will engage students in a variety of medical practices in 2-week cycles, so students will constantly be maintaining their grasp on important skills and practices. It is our job to provide the scheduling application that will best match each student and doctor, at the best times. We solve this problem with two solutions. The first allows students to build their own schedules based on location and time preferences. This involves an interactive user interface sent to each student. The second, referred to as “brute force”, automatically generates schedules with no student input. The “brute force” algorithm serves as a backup, in the event that the first solution fails. The end goal is to provide student and doctor schedules in an appropriate format so that the LIC administrator can easily view and distribute them.

2. How to Use as an Administrator

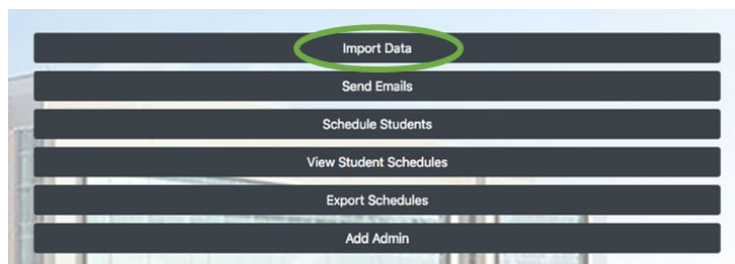
As an Administrator, you have exclusive access to many program features. Administrators are in charge of uploading doctor and student information, deciding when to send out emails, and downloading the final schedules. All of this can be accomplished from the admin panel. To access the admin panel, you must have an administrator username and password. New administrator accounts can only be created by existing administrators.

2.1 Logging On

To log on to the admin panel, direct your browser to the project website. If you try to access any webpage without logging in, you will be prompted to do so. Enter your admin username and password to continue.

2.2 Importing Doctor and Student information

The first step in creating student schedules is to upload doctor and student information. To do this, navigate to the first button in the admin panel, labeled “Import Data”.



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On the next page, you will see two places to upload files. Before proceeding, it is important to note two things. First, uploading a file will clear the existing database. Make sure you are certain you wish to proceed. Uploading a file after emails have already been sent out will prevent students and doctors to create schedules.

In the event that you accidentally clear the database, the entire scheduling process must start over. Students and doctors will need to be sent new unique links. Any information they have already filled in (availability forms, schedule requests, etc.) will need to be completed again.

Secondly, please upload the doctors' information before the students'. This is because students are matched to their Phase 1 doctors during the import. If the doctors are not in the database, the program will be unable to find and pair them.

The most-recently uploaded file will be displayed for both the doctors and the students. If no files have been uploaded yet, nothing will be listed.

When you are ready to upload the doctor information, press the first "Select File" button. Navigate to the appropriate file and chose it. Note that only excel files (including .csv files) are accepted. The doctor information spreadsheet should be in the following format:

	A	B	C
1	Name	Email	Specialty
2	John Smith	jsmith@fast-mail.one	Neurology
3	Ron Baker	rbaker@dfw-docs.com	Family Medicine
4	Anna Deutsch	anna@artzen.org	OBGYN
5	Levi Brown	lbrown97@schwan.one	Surgery

The doctor's full name goes in the first column. The doctor's email goes in the second column. The doctor's specialty goes in the third column. Note that for the specialties, "Family Medicine" and "Internal Medicine" are written with a space.

The first line of the spreadsheet is the header line. It does not matter how you choose to format and label each column, as the first line will be ignored by the program. Just make sure that the list of doctors starts in the second row. The order in which doctors are listed is not important.

After the file has been selected, verify that the correct file name is displayed. Then, press "Upload File". You may have to wait a few moments. When the file has finished uploading, you will see the new file name listed under the upload button.

Next, upload the student data. Much like the doctors, there is a specific format for the spreadsheet:

	A	B	C
1	Name	Email	Phase 1 Doctor Email
2	Sally Student	sallystu@some-uni.edu	rbaker@dfw-docs.com
3	Kris Cubbie	krisCub@another-uni.edu	bryzzo@dfw-docs.com
4	Leslie Knope	lknope@pawnee-u.edu	bWyatt@medicine.one

The student's full name goes in the first column. The student's email goes in the second column. The email of the student's phase one doctor goes in the third column. Again, the header line can be formatted any way you like. Just make sure the list of students starts in the second row.

After the file has been selected, verify that the correct file name is displayed. Then, press "Upload File". You may have to wait a few moments. When the file has finished uploading, you will see the new file name listed under the upload button.

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When you upload the student file, you may encounter a warning message printed in red. This means that one or more phase 1 doctor emails were not recognized. The warning will list the student(s) in question. Review these emails, to ensure they correctly match a phase 1 doctor. If you receive errors for every student, ensure that the doctor file has been successfully uploaded first. After you have addressed the issue, re-upload the file.

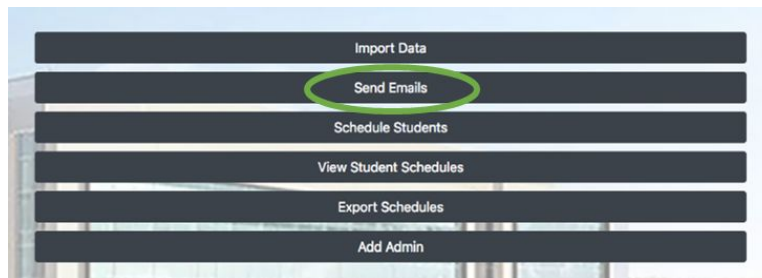
If a student isn't properly matched with a Phase 1 doctor, the program will continue to run as expected; however, this student will not be paired with a doctor from phase 1.

Before continuing, verify that both uploaded files are correct. Once you send out emails, it is impossible to change the imported information without re-sending all the emails.

2.2 Sending Doctors Unique Links via Email

After you have imported student and doctor information, the doctors will need to fill out their availability forms. Each doctor is assigned a unique link in the database. This link will take them to the form.

To send out these links, navigate to the "Send Emails" button on the admin page.



The first button on the page is "Send Doctor Emails". When you are ready to send out the doctor availability forms, press this button. Please note that due to the large volume of emails, this process may take several minutes. You may want to leave the browser running in the background. Make sure not to close or leave the page until the process is finished. A success message will display on the screen once all the emails are sent.

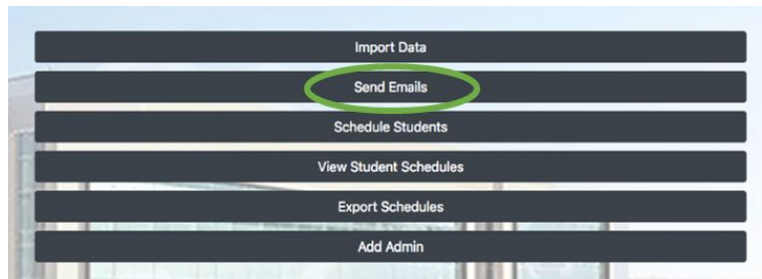
The doctors are then responsible for filling out their availabilities. If they don't complete the form, they will not be scheduled for clerkships.

2.2 Sending Students Unique Links via Email

After the doctors have completed the forms, the students can create their schedules. As with the doctors, students are assigned a unique link in the database that will take them to the scheduling page.

To send out these links, navigate to the "Send Emails" button on the admin page.

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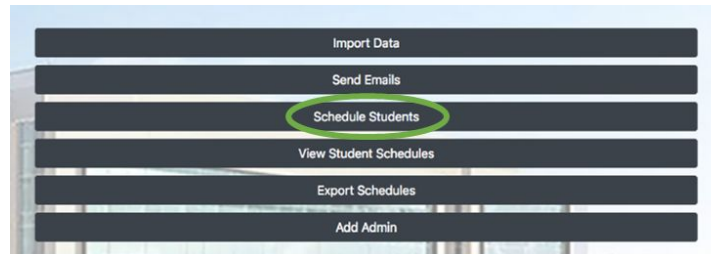
The second button on the page is “Send Student Emails”. When you are ready to send out the student scheduling pages, press this button. Please note that, again, this process may take several minutes. A success message will display on the screen once all the emails are sent.

The students are responsible for filling out their schedules. If they don’t complete the form, they will not have a schedule in the database. If any student has issues completing their schedules, they will be instructed to send an email asking for help. At this point, you may need to make this student’s schedule by hand.

2.3 Generate Schedules Automatically

In the event that student schedule generation doesn’t go as planned, there is a backup option. Referred to here as the “brute force algorithm,” this part of the program will automatically generate student schedules. Note that student preferences aren’t taken into account with this approach.

To create the schedules without student input, navigate to the “Schedule Students” button on the admin page.



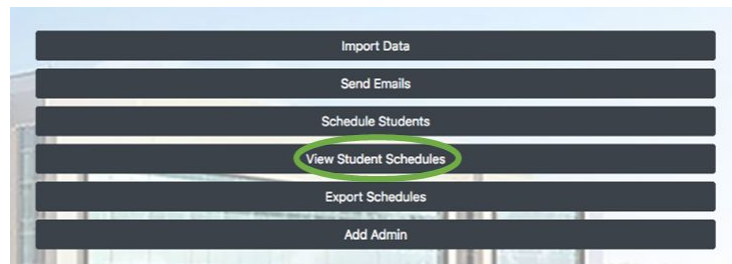
Click to generate the schedules. After a few moments, the process will be complete.

2.3 View Student Schedules

After the student schedules have been created, either by students filling out their preferences or by having the program automatically generate them, you can view the schedules.

To view the schedules, navigate to the “View Student Schedules” button on the admin page.

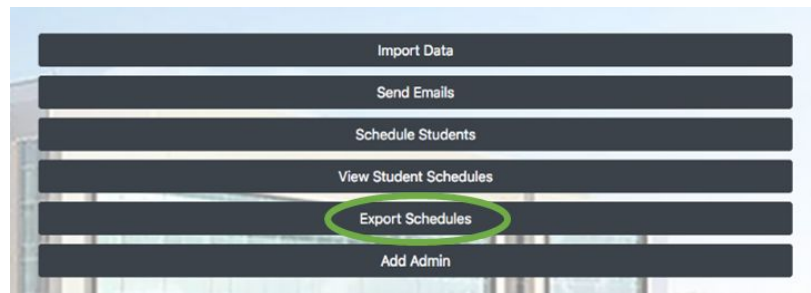
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2.3 Export Schedules

When the schedules have been created, you can export them and save them on your personal computer. The database will be cleared each year when you upload new doctors and students, so it's a good idea to download the schedules for your records.

To download the schedules, navigate to the "Export Schedules" button on the admin page.



Here you will have the option to download the schedules as an excel file or a .csv file. The excel file is formatted colorfully and is intended to be easy to view. Each tab in the excel sheet is a different schedule.

The .csv file is a data-oriented file. It is designed to be uploaded to LCMS+. It can also be viewed in Excel or a similar spreadsheet program.

2.4 Starting and Stopping the Server

At some point you may need to shut down the project to

- A. Conserve Costs
- B. Emergency Situation

As an administrator you should be prepared to start and stop the server through the Amazon Web Services Platform. First, login into AWS using the credentials given to you by the owner of the server. On the homepage go to "Services" > "EC2" > "Instances". Select the instance titled "LIC Application", select "Actions" > "Instance State" > "Stop". To restart follow the same process and select "start" instead of "stop".

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The screenshot shows the AWS Management Console interface. At the top, there is a navigation bar with the AWS logo, 'Services' dropdown, and 'Resource Groups' dropdown. The main heading is 'AWS Management Console'. Below this, there are several sections:

- AWS services**: A section for finding services, including a search bar with the placeholder text 'Example: Relational Database Service, database, RDS'.
- Recently visited services**: A section for services recently visited.
- All services**: A grid of service categories:
 - Compute**: EC2 (circled in red), Lightsail, ECR, ECS, EKS, Lambda.
 - Management & Governance**: AWS Organizations, CloudWatch, AWS Auto Scaling, CloudFormation, CloudTrail, Config.
 - AWS Cost Management**: AWS Cost Explorer, AWS Budgets, AWS Marketplace Subscriptions.
 - Mobile**: AWS Amplify.
- Access resource**: A section for accessing resources using the AWS App.
- Explore AWS**: A section for exploring AWS services, including 'Open Distro for Elasticsearch'.

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The screenshot shows the AWS console interface. At the top, there's a navigation bar with the AWS logo, 'Services', and 'Resource Groups'. On the left, a sidebar lists various EC2-related options: EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (with 'Instances' circled in red), Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Capacity Reservations, IMAGES (AMIs, Bundle Tasks), and ELASTIC BLOCK STORE (Volumes, Snapshots). The main content area is titled 'Resources' and lists EC2 resources in the US East (Ohio) region: 2 Running Instances, 1 Elastic IPs, 0 Dedicated Hosts, 0 Snapshots, 3 Volumes, 0 Load Balancers, 1 Key Pairs, 6 Security Groups, and 0 Placement Groups. Below this is a 'Create Instance' section with a 'Launch Instance' button and a note about the region. At the bottom, there are 'Service Health' and 'Scheduled Events' links.

This screenshot shows the 'Instances' page in the AWS console. The 'Actions' dropdown menu is circled in red. Below it is a search bar and a table of instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, and Status Checks. Three instances are listed: Jenkins (stopped), Artifactory (running), and LIC Application (running).

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks
Jenkins	i-0c9ba5c4723506e80	t2.micro	us-east-2c	stopped	
Artifactory	i-0c210509be2e094ce	t2.medium	us-east-2c	running	2/2 checks ...
LIC Application	i-09d2ef2872273bf75	t2.medium	us-east-2b	running	2/2 checks ...

This screenshot shows the 'Actions' dropdown menu for an EC2 instance. The 'Start' option is circled in red. The menu includes options like Connect, Get Windows Password, Create Template From Instance, Launch More Like This, Instance State (highlighted), Instance Settings, Image, Networking, CloudWatch Monitoring, Stop, Stop - Hibernate, Reboot, and Terminate.