



# Music Matters

Cycle 2 Report

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COMP 4710  
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Group 1

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# Executive Summary (System Metaphor)

Completed by Ford Luttrell

To design and create an application that allows users the ability to input musical artists' names, information, and performance venue into a calendar and sends out a report via email at the end of each month. This is essentially a booking system that sends invoices through email once a month.

## Project Introduction and Cycle Intent

Completed by Ford Luttrell

### Previous Development

During the architectural spike and Cycle 1 we focused on establishing an effective form of communication, loading data bases, and learning React Native. We also did extensive research on Vertex42 and how to input it into the application. This proved to be difficult because of formatting problems.

### Intent this Cycle

Our team's intent for this cycle is to open the month's calendar and autofill the daily performance dates. We also plan to find a way to enter artists' names into the calendar from an iphone and laptop as requested by our sponsor. We also intend to find a way to make the application produce a booking list from the template provided to us. In the previous architectural spike we focused on setting the database on all computers and loaded the application through github. After many meetings with our sponsor, he laid out a guideline for what he wants us to work on each week of the development process. Through this cycle we have followed his schedule and focused on meeting his new guidelines perfectly.

# User Stories

Completed by Xumming Zhang

## Calendar's Format Change

**User Story:** As a developer, I would like to change the format of the calendar.

**Description:** The previous version of the project does not allow users to enter the artist's name into the calendar through IOS and Windows devices. Thus, I need to modify the format of the calendar.

**Hours:**

Total Planned: 30 hours

Planned this cycle: 15 hours

Total Actual: 10 hours

Actual this cycle: 15 hours

**Coder:** Jungpyo Hong

**Testing:** Jungpyo Hong

**Reviewers:** Jungpyo Hong

**Status:** In review

## Export Calendar

**User Story:** As a developer, I want to export the calendar as excel format.

**Description:** We want to find the way to make an export calendar as excel format by using a database.

**Hours:**

Total Planned: 15 hours

Planned this cycle: 15 hours

Total Actual: 15 hours

Actual this cycle: 15 hours

**Coder:** Jungpyo Hong

**Testing:** Jungpyo Hong

**Reviewers:** Entire Team

**Status:** Completed

## Installing Project

**User Story:** As a developer, we finished installing the project.

**Description:** After we get the information of Apple Development Account and Google Drive password from our sponsor, we test to install the project to Apple and Windows devices immediately. And we find some errors and fix them.

**Hours:**

Total Planned: 5 hours

Planned this cycle: 5 hours

Total Actual: 19 hours

Actual this cycle: 19 hours

**Coder:** Zack Smith, Xunming Zhang

**Testing:** Team

**Reviewers:** Team

**Status:** Completed

## Booking List

**User Story:** As a developer, we want to create a booking list for email.

**Description:** Due to lacking function from past groups' design, we want to find a way to fill subject lines in an automated email. We need to add the email subject line to let booking become more convenient to our sponsor.

**Hours:**

Total Planned: 10 hours

Planned this cycle: 10 hours

Total Actual: 10 hours

Actual this cycle: 10 hours

**Coder:** Ford Luttrell

**Testing:** Team

**Reviewers:** Team

**Status:** Completed

## Template Format

**User Story:** As a developer, we want to create a booking list template format

**Description:** Actually, we need to change part of template format, not the entire format. The project's function is able to input customer's information automatically through users sending invoices to their customers. And it will be more efficient.

**Hours:**

Total Planned: 10 hours

Planned this cycle: 10 hours

Total Actual: 5 hours

Actual this cycle: 5 hours

**Coder:** Ford Luttrell

**Testing:** Team

**Reviewers:** Team

**Status:** Completed

# Design Decisions

Completed by Ford Luttrell

Our sponsor requested that we add the finishing touches to an application that has been worked on for three semesters now. Before this application he was forced to input customers' information into a small calendar that proved to be very time consuming and strenuous to our sponsor. This application is a design to make booking easier and quicker for him. This will allow him to send all the information to his staff without having to do it individually like he normally does. On a daily basis he books musical artists for venues and is required to send out invoices once a month individually to said artists. This application will automatically create and send invoices to his customers, saving our sponsor a lot of time and work. He has given us several guidelines for what needs to be inputted in order to create the invoice and booking system. This information includes name, email, address, city, state, zip code, and time of performance. He wants individual text boxes for each of these categories so that he can easily go into the application and input the information at a moment's notice. This is where our program will store all the information and save it into a list and calendar. This calendar will allow our sponsor the ability to view individual dates and what performers are performing at what venues and at what time. Our sponsor requested that from the list we created he can quickly send an email invoice at the end of the month to all his performers. Our sponsor has an Iphone so he wanted us to be sure that this application would work for his phone for when he is on the go and unable to access a laptop. We also plan on making it available to him on his laptop because he was worried about his screen being "too small to read".

As a group we decided the best way for us to communicate is through Groupme. We have had several Zoom meetings with one another and with our sponsor to make sure we have an understanding of exactly what our sponsor needs. In order for our group to have access to all parts of the application we were given the email and passwords to the app

along with a github that was shared with all of us and our sponsor. We also work together through a shared Google Drive so that we can all work at the same time and correct each other. Google Drive will be very important through our design process and everything is shared through it.

Our team was handed down code from previous semesters and we spent time going over and reading to be sure we fully understood what previous groups did before us. We will be programming on Visual Studio and we are collaborating through Github with past groups work and with one another. The past groups started the application by programming in React JS Language so we will be continuing in that. None of our group members have used this language so we have been researching, studying, and practicing this language so that we are capable of completing our sponsors request. We found that this language is pretty similar to past languages we studied, but we have had to learn a few things. The framework we are using is React Native which we had never used before so we also had to do a lot of research on that to fully understand what we were working with. Our sponsor is not familiar with any programming languages or how the process of applications work so he has given us free reign on the application development process as long as we meet certain guidelines. Since he doesn't know about the development process we have really relied on our contact with past groups to understand where the code for this application was located and how to access it. This was very difficult at first, but we finally found a way to access the information with the help of several past students. We then ran into problems with passwords because our sponsor was unable to remember some of the passwords, but we found a way to reset them and begin accessing and working on the application. We now have new access codes and a github repository so that nothing will be lost and everything will be organized all in one place.

We will look to change a few things from past groups designs. We've also had several meetings with our sponsors and he has told us exactly what he wants and we are all



on the same page in that regard. This cycle we changed the individual booking invoices for the app for the subject line so that it will send automatically with a subject to the customer. We also focus on changing the daily confirmation email for the artist. This was fixed during cycle 2 after a lot of hard work and coding. We found a way to fix the subject line that caused Mike Moody trouble in the past. He told us that he has run into problems with the subject line for both of these. The email worked properly but our sponsor had to go in and individually insert a subject for each email, which he did not want to do. This fix will prove to be a huge time saver for our sponsor. We also need to fix the subject line for cancellation emails. Past groups were unable to figure out a way to fix these problems so we are happy to have found a way to get this to work.

We also were given a list of problems that past groups had and were unable to fix before graduating the class. The application would generate some invoices, but wouldn't always send them to the right email address which needs to be changed immediately. We are currently still working on this problem and it will be changed in the next few weeks. He also wants holidays built into the calendar and college football games since he is an Auburn fan. Dennis is working on this part in the Vertex42 calendar format. This has been updated for the 2020 calendar year and since games were changed due to the Coronavirus it has been altered. Our sponsor also wants when a venue is changed in the application that it will create a new folder in his google drive so that he can easily access it when he checks the drive. This is a problem we will work on in our next phase.

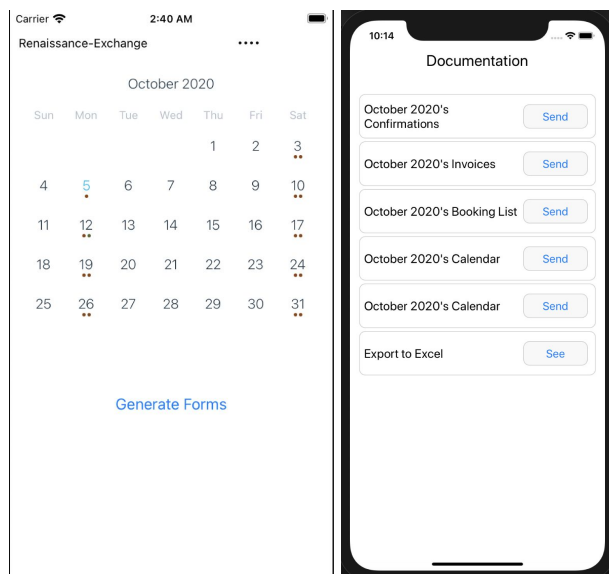
# Design documentation

Completed by Jungpyo Hong

In the last cycle, we are tried to export excel format calendar which is called Vertex 42, but during the meeting with sponsor Mike, he wanted a calendar with printed pdf format so that Ford and Jungpyo Hong(Dennis) try to export calendar format when the user clicks the export calendar button. This picture is the calendar format which our sponsor wants.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 New Year's Day	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

After making the calendar in the booking calendar menu, users can go to “generate form” and choose the options.



And also, in this cycle we change the format of confirmation email and invoice style.  
Here is the format for that

SINCLAIR'S EAST MONTGOMERY, AL  
LIVE PERFORMANCE CONTRACT/CONFIRMATION  
MUSICMATTERSBOOKINGS.COM

Eric Perkins artist/performers agree to perform live music at Sinclair's East, 7847 Vaughn Rd, Montgomery, AL 36116 Montgomery, AL 36117 on the evening of Wed., May, 24th, 2017 between the listed hours of 7:30pm to 10:30pm and Sinclair's East in Montgomery, AL. agrees to pay the above named artists \$200.00 and said payment to be paid upon completion of this performance.

\$40.00 booking fee due to MusicMattersBookings.com, on the evening of this performance.

If for reasons beyond your control you are unable to make your scheduled confirmed performance time and date; It is our expectation that you will contact Mike Moody at 619-307-5866. This should be done at the earliest possible time, but no later than four hours prior to your set. Thank you in advance for complying to this request.  
MusicMattersBookings.com

SINCLAIR'S EAST, MONTGOMERY, AL  
LIVE PERFORMANCE CONTRACT/CONFIRMATION  
INVOICE  
MUSICMATTERSBOOKINGS.COM

Todd Fulmer artist/performers agree to perform live music at Sinclair's East, 7847 Vaughn Rd, Montgomery, AL 36116 Montgomery, AL 36117 on the evening of Sat., October 27th, 2018 between the listed hours of 8:00pm to 11:00pm and Sinclair's East in Montgomery, AL. agrees to pay the above named artists \$200.00 and said payment to be paid upon completion of this performance.

These two formats are changed in this cycle. If the user touches the send button in the list, then formatted file sends email to user and also saved in google drive.

# Artist Confirmation and Booking Invoice

Completed by Ford Luttrell

**Below is the code for the artist confirmation.** We added the email subject line because this was a very time consuming part of Mike Moody's day and hopefully this will help him to save some time. We also added an email body to match our sponsors template. We had to include the artist name, venue, and performance date into the email. This then created a pdf for Mike Moody and the artist receiving the confirmation.

```
37 exports.sendArtistConfirmation = function (event, client, venue, pdf) {
38   return new Promise((resolve, reject) => {
39     let emailSubject = venue.name + " - Artist Confirmation";
40     let emailBody = "To whom it may concern,\n\n" +
41       "Attached is the Live Performance Contract/Confirmation invoice for " + client.stage + ", who is performing at " + venue.name + "\n\n" +
42       client.stage + "artist/performers agree to perform live music at The Renaissance/Exchange Bar, 201 Tallapoosa St., Monroeville, AL 36486\n\n" +
43       "\n\n$40.00 booking fee due to MusicMattersBookings.com, on the evening of this performance. "\n\n" +
44       "\n\nIf for reasons beyond your control you are unable to make your scheduled confirmed performance time and date; It will be a full refund.\n\n" +
45       "\n\nThanks,\n\nMusic Matters Bookings";
46     let pdfContent = "MusicMattersBookings.com " + pdf;
47     return sendEmail({
48       to: client.email,
49       subject: emailSubject,
50       text: emailBody,
51       attachments: [
52         {
53           filename: "Confirmation " + event.date + ".pdf",
54           content: pdfContent
55         }
56       ]
57     }).then(pdf => {
58       resolve(pdf);
59     }).catch(err => {
60       reject(err);
61     });
62   });
63 }
```

**Below is the code for the booking invoice.** We added the email subject line because this was a very time consuming part of Mike Moody's day and hopefully this will help him to save some time. We also added an email body to match our sponsors template. We had to include the artist name, venue, and performance date into the email. This then created a pdf for Mike Moody and the artist receiving the invoice.

```
52 exports.sendInvoice = function (event, client, venue, pdf) {
53   return new Promise((resolve, reject) => {
54     let emailSubject = client.stage + " - Invoice - " + Util.toUS(event.date);
55     let emailBody = "To whom it may concern,\n\n" +
56       "Attached is the Live Performance Contract/Confirmation invoice for " + client.stage + ", who is performing at " + venue.name + "\n\n" +
57       client.stage + "artist/performers agree to perform live music at The Renaissance/Exchange Bar, 201 Tallapoosa St., Monroeville, AL 36486\n\n" +
58       "\n\nThanks,\n\nMusic Matters Bookings";
59     return sendEmail({
60       to: [venue.email, venue.emallist],
61       subject: emailSubject,
62       text: emailBody,
63       attachments: [
64         {
65           filename: "Invoice " + event.date + ".pdf",
66           content: pdf
67         }
68       ]
69     }).then(pdf => {
70       resolve(pdf);
71     }).catch(err => {
72       reject(err);
73     });
74   });
75 }
76
77
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86
```

# Management plan

Completed by Ford Luttrell

In this cycle, our team was focused on improving the calendar aspect of the Music Matters application. We also focused on adding the artist confirmation and booking invoice. Our sponsor laid out his exact specifications for the calendar and gave an exact template for both the artist confirmation and booking invoice. We were also given the task of helping Mike Moody redownload the application onto his phone.

## Task Assignments

Each team member worked as a group through the beginning of this project. We met in the lab and over zoom in order to make sure we were all on the same page. We also worked in group me and through google docs for the report and demonstration. This cycle we met with Mike Moody and discussed which members of the team would do which assignments. Below are the tasks that each group member worked on.

**FORD LUTTRELL:** Coded the artist confirmations and booking invoices. Also, was responsible for changing the subject line format for the emails which proved to be a problem in past cycles.

**JUNGPYO HONG:** Coded the calendar aspect of the app and added calendar format into the workspace as Mike Moody requested.

**ZACK SMITH:** Responsible for getting the application redownloaded on Mike's Phone.

**XUNMING ZHANG:** Responsible for getting the application redownloaded on Mike's Phone.

## Development Schedule

We worked on the beginning test cases that Mike Moody gave us. He laid out a task for each week and it helped a lot with developing our work schedule.

# Risk Mitigation

Completed by Zack Smith

The risks that we have to worry about is for our sponsor to have an app that doesn't work. This could be that the app doesn't send proper invoices to performers and venues leading to money problems for our sponsor. To avoid these problems we must test an extensive amount to ensure that the app will function as intended in all scenarios.

## Testing plan

Completed by Zack Smith

We will create extensive user tests to run on the system to insure proper functionality. Then run tests on the running prototype with the sponsor to ensure that he is satisfied with functionality and look of said functions.

### Test Procedure

#	Required Action	Expected Results	✓
1	calendar format readability	After putting in events, the calendar is still legible and easy to navigate.	✓
2	extract calendar	extracting the calendar is done correctly and efficiently.	✓
3	Installing app to customer	That installation process goes smoothly and easily so the customer can test the app and use it.	
4	Booking list usability	The created booking list is usable and legible.	
5	Booking template approved by sponsor	sponsors will approve the layout of booking list template and find it easy to navigate and use.	

# Lessons learned

Completed by Jungpyo Hong

In this cycle, the most important part that we learned is making a function in react native. We have almost three weeks in this cycle and we have to edit the pdf handler and email handler to work properly. Exporting pdf and sending emails should work with firebase and our code so that we have to find out how to get data from firebase and also how to upload our data to firebase.

Second thing is using EXPO. Expo is software that can help to deploy our application to the public area so that people can access our application through the expo app. We are using this way to install applications to our sponsor in a private way.

# Appendix A

## A.1 Status report

Completed by Jungpyo Hong

### Cycle Report 2-1

Senior Design Status Report (Page 1)									
Project Name:		Music Matters							
Team Members:		Ford Luttrell, Jungpyo Hong(Dennis), Zack Smith, Xunming Zhang							
Date:		10/19/20			Cycle:		Cycle 2 Status Report 2		
System Metaphor:		To design and create an application that allows users the ability to input musical artists' names, information, and performance venue into a calendar and sends out a report via email at the end of the month. This is essentially a booking system that sends invoices through email once a month.							
Cycle Intent:		Our team's intent for this cycle is to add the finishing touches to an already working application that is available through the app store. We plan to further develop the app, while focusing on the invoice emails that will be sent to staff members once a month. We intend to improve code already created and finish the last leg of this application's functionality.							
					Planned			Actual	
#	User Story		Cycle planned for completion	Total planned hours	Planned hours this cycle	Status	Actual hours this cycle	Total hours	
1	As a developer,change the format of calender		1	15	15	In Review	15		10
2	AS a developer, export the calendar as excel format		1	15	15	Completed	15		15
3	As a developer, finished installing the project		1	5	5	Completed	19		19
4	As a developer, create a booking list template for email		2	10	10	Completed	10		10
5	As a developer, create a booking list template format		2	10	10	Completed	5		5
			Planned Total	55	55	Actual Total	64		64

	User Stories				Planned	Actual									
Member Name	Collab	Code	Test	Review	Planned hours this cycle	Refactor Hours		Process Hours		Customer Hours		Product Hours		Total Hours	
						Week	Cycle	Week	Cycle	Week	Cycle	Week	Cycle	Week	Cycle
Ford Luttrell	Communi- cate, sea- rching	1	x	2	15	3	3	6	6	x	x	1	1	10	10
	find the way to deploy the applicati- on, create button to export the excel format of calendar														
Jungpyo Hong	calendar	1,2,3	x	1,2,3	15	5	5	10	10	x	x	4	4	19	19
Zack Smith	installing	3	x	3	10	3	3	3	3	x	x	0	0	7	7
Xunming Zhang	find the way	3	x	3	10	5	0	6	0	x	x	7	7	18	18
				Totals	50	16	11	25	19	0	0	12	12	54	54



## Cycle Report 2-2

[illegible]

Senior Design Status Report (Page 2)																
Team Name:		Music Matters														
User Stories					Planned	Actual										
Member Name	Collab	Code	Test	Review	Planned hours this cycle	Refactor Hours		Process Hours		Customer Hours		Product Hours		Total Hours		
						Week	Cycle	Week	Cycle	Week	Cycle	Week	Cycle	Week	Cycle	
Ford Luttrell	nicate,s earchin g	1 x		2	15	3	3	6	6	x	x		1	1	8	8
Jungpyo Hong	way to deploy the applicati on, create button to export the excel format of calenda	1,2,3,4 x		1,2,3,4	15	5	5	10	10	x	x		4	4	21	21
Zack Smith	installing	3 x		3	12	3	3	3	3	x	x		0	0	19	19
Xunming Zhang	find the v	3 x		3	12	5	0	6	0	x	x		7	7	16	16
Totals					54	16	11	25	19	0	0		12	12	64	64
<b><u>Accomplishments since last status report:</u></b>						<b><u>Objectives for the next week:</u></b>										
During last week, Jungpyo Hong - worked on change format of calendar and found the way to make export calender as excel format with using database. Ford - changed part of the email template not entirely sure if totally correct need a second pair of eyes and researched how to fill subject line in an automated email. Zack - was still working how to deploy application through Windows version and Android version. Xunming - was still working how to deploy appliaction						We have plan Zoom meeting with client on Tuesday. We have to conclude our Cycle 2 working and prepare for our Cycle 2 report and presentation in next week.										
<b><u>Obstacles encountered since last status report:</u></b>						<b><u>Notes:</u></b>										
We need to meet our sponsor since we need some more details.						1) Will the app, on the 1st of each month, open that month's calendar and autofill the daily performance dates ??  2) Can artist names be entered into that month's calendar from my iphone and/or from my computer ?? complete 3) Once a calendar's month's bookings are complete, will the app produce a										
<b><u>Risks facing the project:</u></b>																
Our risks facing this project is that we are having some problems with getting the emails to send correctly so that is going to be a difficult																

# A.2 Meeting Minutes

Completed by Jungpyo Hong

10/13/2020

- Physical meeting in Shelby Lab
- Working on coding

Participant : Jungpyo Hong, Ford Luttrell

Total Hours : 3

10/15/2020

- Physical meeting in Shelby Lab
- Making calendar pdf handler

Participant : Jungpyo Hong, Ford Luttrell

Total Hours : 3

10/20/2020

- Meeting with Client Mike Mooty
- Talking about our plan and the paths

Participant : Jungpyo Hong, Ford Luttrell

Total Hours : 1

10/21/2020

- Physical meeting in Shelby Lab
- Working on coding, discuss about the path of our team
- Communicate with sponsor

Participant : Jungpyo Hong, Ford Luttrell, Zack Smith

Total Hours : 3

10/26/2020

- Physical meeting in Shelby Lab
- Working on coding, working on report and presentation

Participant : Jungpyo Hong, Ford Luttrell, Zack Smith

Total Hours : 2

## A.3 Correspondence

Completed by Xumming Zhang

NOTICE: This email originated from Gmail. Please report any phishing activity to [phishing@auburn.edu](mailto:phishing@auburn.edu).

Hello again...Glad to see the team at work on this...

google drive:

[musicmatters@kings@gmail.com](mailto:musicmatters@kings@gmail.com)

@o0NN22ardin

Apple Developer

[peeff@bellocouth.net](mailto:peeff@bellocouth.net)

@o0NN22ardin

Let me know that you got this and they work for you...Thanks...M

...

New Message ↓



Music Matters

收件人 你自己

08:43

...

NOTICE: This email originated from Gmail. Please report any phishing activity to [phishing@auburn.edu](mailto:phishing@auburn.edu).

I reset the google password to:

@o0NN22ardin

...

# A.4 Source Code

Completed by Jungpyo Hong

```
function generateCalendarTable(startDate, events) {  
  
    let calendarTable = [];  
  
    let daysHeader = [];  
    ["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"].forEach(day => {  
        daysHeader.push({  
            text: day,  
            style: "calHeader"  
        });  
    });  
  
    calendarTable.push(daysHeader);  
  
    //populate with empty boxes before 1st  
    if (startDate.getDay() > 0) {  
        calendarTable.push([]);  
        for (let i = 0; i < startDate.getDay(); i++) {  
            calendarTable[1].push({  
                text: "",  
                style: "emptyDate"  
            })  
        }  
    }  
}
```

```

let currentDate = startDate;
while (currentDate.getMonth() === startDate.getMonth()) {
  //if at the end of the week, add another array
  if (currentDate.getDay() === 0) {
    calendarTable.push([]);
  }

  let cellArray = [];
  cellArray.push({
    text: currentDate.getDate()
  });

  let matchingEvents = events.filter(event => {
    let eventDate = new Date(Util.toUS(event.date));
    return eventDate.getTime() === currentDate.getTime();
  });

  matchingEvents.forEach((event, i) => {
    // if (i < 2) {
    cellArray.push({
      text: [Util.toAMPM(event.start), Util.toAMPM(event.end)].join("-"),
      style: "dateTimeslot"
    });
    cellArray.push({
      text: event.client.stage,
      style: "dateClient"
    });
    // }
  });
}

```

```

57 exports.sendArtistConfirmation = function (event, client, venue, pdf) {
58   return new Promise((resolve, reject) => {
59     let emailSubject = venue.name + " - Artist Confirmation";
60     let emailBody = "To whom it may concern,\n\n" +
61       "Attached is the Live Performance Contract/Confirmation invoice for " + client.stage + ", who is performing at " + venue.name + "\n\n" +
62       client.stage + "artist/performers agree to perform live music at The Renaissance/Exchange Bar, 201 Tallapoosa St., Morristown, TN 37814\n\n" +
63       "$40.00 booking fee due to MusicMattersBookings.com, on the evening of this performance. "\n\n" +
64       "If for reasons beyond your control you are unable to make your scheduled confirmed performance time and date; It will be a full refund.\n\n" +
65       "Thanks,\n\nMusic Matters Bookings";
66     let attachments = [
67       {
68         filename: "Confirmation " + event.date + ".pdf",
69         content: pdf
70       }
71     ];
72     return sendEmail({
73       to: client.email,
74       subject: emailSubject,
75       text: emailBody,
76       attachments: attachments
77     });
78   });
79 }

```

```

        //add new date box to most recent week added
        calendarTable[calendarTable.length - 1].push(cellArray);

        //go to next day
        currentDate = new Date(currentDate.getTime() + 24 * 60 * 60 * 1000);
        // currentDate.setDate(currentDate.getDate() + 1); // this will crash t
    }

    //populate with empty boxes after end of month
    if (currentDate.getDay() !== 0) {
        for (let i = currentDate.getDay(); i < 7; i++) {
            calendarTable[calendarTable.length - 1].push({
                text: "",
                style: "emptyDate"
            });
        }
    }

    return calendarTable;
}

function getMonthEnd(monthStart) {
    let monthEnd = new Date(monthStart.getTime());
    monthEnd.setMonth(monthEnd.getMonth() + 1);

    if (monthEnd < monthStart) {
        monthEnd.setFullYear(monthEnd.getFullYear());
    }
}

```

```

        layout: {
            fillColor: (row, node, column) => {
                if (row === 0) return CAL_BLUE;
                else if (row === 1 && column < monthStart.getDay()) return CAL_GREY;
                else if (row === node.table.body.length - 1 && column > monthEnd.getDay()) return CAL_GREY;
                else if (column === 0 || column === 6) return "#dee2f2";
                else return null;
            }
        }
    });

    let printer = new PDFMake(fonts);
    let pdf = printer.createPdfKitDocument({
        pageOrientation: "landscape",
        content: content,
        styles: pdfStyles,
        defaultStyle: {
            font: "Helvetica"
        }
    });
    pdf.end();
    return pdf;
};

```

```

let stringifyNames = function (performerNames) {
  if (performerNames.length === 1) {
    return performerNames[0];
  } else if (performerNames.length === 2) {
    return performerNames.join(" and ");
  } else {
    let returnString = "";

    for (let i = 0; i < performerNames.length - 1; i++) {
      returnString += performerNames[i] + ", ";
    }

    returnString += " and " + performerNames[performerNames.length - 1];
    return returnString;
  }
};

```

```

52 exports.sendInvoice = function (event, client, venue, pdf) {
53   return new Promise((resolve, reject) => {
54     let emailSubject = client.stage + " - Invoice - " + Util.toUS(event.date);
55     let emailBody = "To whom it may concern,\n\n" +
56       "Attached is the Live Performance Contract/Confirmation invoice for " + client.stage + ", who is performing at " + ven
57       client.stage + "artist/performers agree to perform live music at The Renaissance/Exchange Bar, 201 Tallapoosa St., Mon
58       "\n\nThanks,\n\nMusic Matters Bookings";
59     return sendEmail({
60       to: [venue.email, venue.emaillist],
61       subject: emailSubject,
62       text: emailBody,
63       attachments: [
64         {
65           filename: "Invoice " + event.date + ".pdf",
66           content: pdf
67         }
68       ]
69     }).then(pdf => {
70       resolve(pdf);
71     }).catch(err => {
72       reject(err);
73     });
74   });
75 };
76
77
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```

Whole source code will can find in github

[https://github.com/jphong1111/Senior\\_Project](https://github.com/jphong1111/Senior_Project)