

# OPTIMIZING WORKFLOW AND DATA MANAGEMENT FOR CERES SCHOOL OF NATURE AND CLIMATE THROUGH THE IMPLEMENTATION OF .MONDAY.COM

- *Supplemental Materials* -

**AUTHORS:** Stephen Price, Sarah Ossing, Tyler Wong, Carson Murphy

**ADVISORS:** Prof. Holly Ault and Prof. Stephen McCauley

**SPONSOR:** CERES School of Nature and Climate

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## CONTRIBUTIONS

Over the past 7 weeks in Melbourne, our team has worked together to develop and implement a new bookings system for Student Programs. While we worked collaboratively, each of us specialized in specific areas. The following represents each team member's contributions. Stephen was the main communicator for the team with CERES staff and WPI advisors, developer for the external program and simulations, as well as booklet editor and primary writer. Sarah was the team's graphic designer (figures and booklet), writer, and primary editor in addition to assisting with Monday.com automations. Tyler's efforts were largely focused on the Monday.com workspace, ensuring the system met staff requirements and was well documented in addition to assisting with writing and researching. Carson's focus was transferring Student Program's legacy data from Podio to Monday.com and working within Monday.com.



# OPTIMIZING WORKFLOW AND EFFICIENCY FOR CERES: STUDENT PROGRAMS THROUGH THE IMPLEMENTATION OF MONDAY.COM

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## IMPROVING STUDENT PROGRAMS BOOKINGS PROCESS EFFICIENCY

Due to the increasing integration of technology in the workplace, demand for the automation of employee tasks has grown due to its time-saving benefits.<sup>13</sup> However, technological changes can cause major organizational changes within the workplace, negatively affecting employees within an organization.<sup>1</sup> As a result, extensive planning with those affected is necessary to ensure continued use and acceptance by staff.<sup>9</sup> CERES Student Programs, a non-profit environmental education center in Melbourne, Australia, currently devotes a significant portion of employee time to processing bookings. This time could be better spent elsewhere,

especially since the employees that process bookings are experienced environmental educators. Consequently, if the logistical demands of their position were diminished, they would be able to spend more time doing what they love - teaching others how to care for and appreciate our Earth.



A beautiful day on-site at CERES' East-Brunswick campus.

This project integrated Monday.com, a customer relationship management (CRM) tool, into the Student Programs workspace to minimize time spent on the bookings process and maximize time spent towards organizational goals, such as teaching students and expanding lesson plans. Frequent consultations with key stakeholders ensured that the resulting CRM implementation increased workflow efficiency while still performing all

functions of the previous system and that it would be used by employees without hesitation or skepticism. In addition, Student Programs could take advantage of many advanced reporting functionalities. Lastly, creating an automated scheduling system allowed us to run simulations and provide recommendations for how to best use the teaching spaces available to maximize bookings. Ultimately, this project transitioned Student Programs in time for Q1 2023 bookings to be processed in Monday.com, allowing staff to take advantage of the improved workflow and automations.

## AN OVERVIEW OF CERES AND ITS PREVIOUS WORKSPACE

Student Programs, a division of CERES and the primary focus of this project, offers programs to students in support of their mission "for people to fall in love with the Earth again." Previously, the Student Programs Office had seven apps that help them manage their bookings.<sup>2</sup> These apps were disjointed, making data acquisition difficult and requiring staff to manually transfer data between apps, which can be prone to error. Recognizing the advantages an integrated CRM would have on their workflow by centralizing data, automating

tasks, and improving reporting, Student Programs tasked a previous research team from Worcester Polytechnic Institute (WPI) in 2021 with analyzing various CRMs and detailing which CRM would best fulfill their needs.<sup>2</sup> This group, considering multiple options, ultimately chose Monday.com due to its code-free design, capacity for automation, and advanced reporting features. However, it is important to note, simply implementing a CRM or updating to a new version is not enough to see lasting benefits.<sup>6</sup> Often, for the performance benefits to be seen within an organization, a significant amount of work and time must be put into understanding customer and employee needs, which we considered throughout every step of implementation.<sup>7</sup> As an organization grows, change is inevitable and can raise concern for discomfort amongst employees.<sup>7</sup> However, this can be avoided through proper communication and well designed trainings.<sup>3</sup>

## RESEARCH ACTIVITIES AND FINDINGS

This project aimed to implement a CRM for Student Programs and improve workflow efficiency and the ease with which data can be accessed for analysis. To achieve this goal, we fulfilled the following objectives:

Understand the needs a CRM must fulfill

Develop and implement a workspace to simplify the current bookings process

Implement advanced reporting features

Work closely with staff to refine the workspace and increase staff compatibility

Transition booking process in time for Q1 2023 bookings

### UNDERSTANDING CERES STUDENT PROGRAMS STRUCTURE AND NEEDS

To establish a thorough understanding of CERES Student Program' bookings and reporting process, we interviewed key stakeholders in the bookings team and reviewed the three deliverables created by Baranowski et al.<sup>2</sup> As a result, we were able to develop the following criteria of an effective system must meet:

- Reduce the time required to process a bookings
- Maintain a similar appearance to past systems
- Exist entirely in Monday.com

These criteria were chosen as a result of staff frustration regarding time-consuming and repetitive processes and designed to decrease the amount of organizational change while still saving time. The

The importance of a decline in time required is best explained by Kate Green as she noted, for staff at CERES, "time at their desks is stuff they have to do to do what they want to do." While our goal was to build a system that adequately fulfills the above needs, our top priority was to leave a system in place that the staff were comfortable using.

### DEVELOPING A WORKSPACE TO MANAGE STUDENT PROGRAMS BOOKINGS

After analyzing the information we obtained from the interviews and reviewing work from Baranowski et al.,<sup>2</sup> we constructed a workspace in Monday.com. In addition to the workspace, a supplemental program was developed to support Monday.com on more advanced automations. Our goal in designing this workspace was to create an updated system that reduced the time staff spent on logistical tasks that they were comfortable with integrating into their daily workflow.

#### ***Automating Bookings in Monday.com***

The original bookings process included repetitive shifting between the various apps used, cluttering the workspace and contributing to inefficiency. As a result, one of our main priorities when building the Monday.com workspace was the integration of these apps so that data could transfer automatically. Successful completion of these resulted in each app integrated into

Monday.com, allowing the staff to only work in one app rather than seven, reducing the likelihood of lost information when transferring between steps and improving the overall efficiency of the bookings process. In addition to integrating Student Programs' accounts, internal automations were created to further simplify the bookings process by removing the most time-consuming steps.

### **Impacts of an Automated Bookings Process**

Interviews with staff before and after implementation enabled qualitative analysis that revealed the staff was confident in the new system and excited for the amount of time saved moving forward. Emily Bakyew, a member of the booking team since the project began with Baranowski et al., mentioned that our new system "created something that will improve the customer experience by adding more touch points and giving further information as needed." In addition, she described that with the time saved, the bookings team would be able to proactively advertise and reach out to customers, analyze data, and improve programs. For a quantitative analysis of the impact transitioning to Monday.com had, we timed the staff processing a booking on the new and the old system, which revealed the

previous system required 45 minutes, whereas the new system required 1.5 minutes to process a booking. In addition, Student Program's bookings process was made more efficient, reducing the time needed to process a booking by 96%, while decreasing the likelihood of error when transferring data.

### **Automating the Generation of Timetables**

Monday.com is designed as a no-code CRM tool, making it an excellent option for organizations like CERES who do not have a large IT department. However, due to its user-friendly simplicity, it cannot handle complex automations, which did not impact any of Student Programs needs, except generating timetables. This task is the most complex bookings task, taking up to 5 hours to complete and is required each day, something we concluded must be automated. The resulting algorithm was designed to comprehend and optimize the complex environment, considering program type, activity type, and competing location requirements. When implemented, the algorithm significantly decreased the time required for both standard and busy days, as seen in Figure 1. Upon completion, a version of this algorithm was modified to perform simulations to Student Programs capacity for

each program based on location usage. These simulations revealed which activities were limiting capacity the most and, as a result, provide the most benefit by finding alternate locations. Ultimately, each program's capacity was improved by 29% on average.

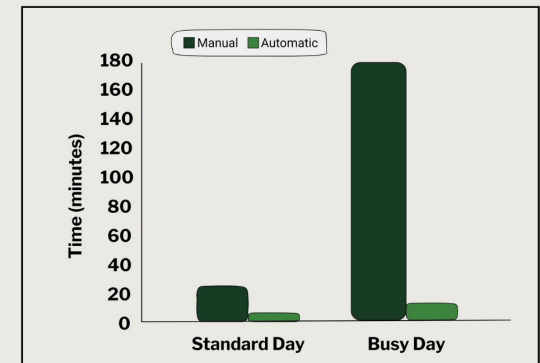


Figure 1: A graph depicting the improvement automated generation of timetables can provide on standard versus busy scheduling days.

### **BUILDING REPORTING AND ANALYZING TOOLS FOR STUDENT PROGRAMS**

One of the key reasons Monday.com was chosen is its advanced reporting capabilities.<sup>2</sup> After transitioning the bookings process to Monday.com, we developed dashboards to automatically collect, analyze, and clearly report on data in real-time. Previously, creating similar reports was a process that occurred infrequently due to its time-consuming nature. However after transitioning to Monday.com, these

performance metrics are updated in real-time and can be accessed instantaneously, eliminating the time required to compile reporting data. One of the staff members, when discussing the improved reporting process, explained that the updated system meant that they could simply look at the dashboard and don't have to do anything" when gathering data. The resulting time saved could be spent elsewhere. As a staff member stated, with reports generated in real-time, the Student Programs office has transitioned away from being reactionary and instead enabled them to proactively adjust based on performance metrics.

**EXTENSIVE USER TESTING AND TRAINING** During and upon completion of the Monday.com workflow, our team conducted extensive user testing over multiple weeks to ensure that the automations and procedures were performed to their desired specifications and that the new system could adequately improve and replace the old workflow. User testing allowed us to improve the system so that we could more precisely tailor the system to Student Programs' needs. This testing revealed that the workflow and implementation was a huge improvement from their previous system, and that they were excited about

the transition. As a result of user testing, the staff were already quite familiar with the system, which was supplemented by comprehensive trainings to fill any gaps in knowledge, address any questions or concerns, and enable a smooth transition to the new system. Initially, there had been some hesitancy and skepticism from the staff regarding transitioning, but after testing and training, they were confident and excited to use the new system.

#### **TRANSITIONING STUDENT PROGRAMS TO MONDAY.COM**

Upon completing the development of the Monday.com workspace and extensive user testing and staff training, Student Program's transitioned to the workspace, thereby directing all new bookings to Monday.com. We accomplished this in time for planning week, one of the busiest times of the year for bookings, meaning that staff could immediately start benefiting from the 96% reduction in time required for a standard booking. In addition, all legacy data was transitioned from Podio to Monday.com to enable advanced reporting on previous data and further reduce the number of applications required, which was described as "really helpful" and "amazing" by the management team. Considering the improved workflow and the number of

bookings received per year, we estimate the time required to perform administrative tasks will decrease from 531 to 28 hours. If used solely for excursions, this time would enable the bookings team to educate students for an additional 101 days, reaching 7,575 students while still completing their responsibilities.

#### **CONCLUSION: A SUCCESSFUL TRANSITION FOR STUDENT PROGRAMS BOOKINGS**

Our work with Student Programs has transitioned their excursions and incursions bookings process from a largely manual process into an automated system using Monday.com. This transition has simplified the bookings process, making it easier to understand and bringing the standard time required for a booking from 45 minutes to 1.5 minutes, a reduction of approximately 96%. In addition to improving the workflow and system used, we left a system in place the staff were excited to use so that they could spend more time outdoors with students.

**"It has definitely had an impact on our workflow and speeding up the process. We've been lucky to have that especially being a non-profit and having limited time and resources, any time that we can save actually makes a big difference."**

*-Alex Sullivan, Bookings & Administration Coordinator*

## **IRB REVIEW**

A Human Subject Review was submitted to Worcester Polytechnic Institute's Institutional Review Board for all interview questions. The submission was under Institution Number: IRB-23-0088, titled "Optimizing Workflow and Data Management at CERES" and Professor Ault as a PI. It was accepted and made exempt from further review under 45 CFR § 46.104 (d)..

## **INTERVIEW DISCLOSURE**

The following disclosure was given to each member of CERES' staff prior to interviewing them:

We are a group of students from Worcester Polytechnic Institute, a university in the United States. We are conducting research to assess the usability of the Monday.com sandbox test environment that you've been testing. Participation in this interview will take approximately 10 minutes, and your participation is completely voluntary. You are not required to answer any question that you wish not to answer. We would also like to ask for your permission to take an audio recording of the interview. Before we begin, do you have any questions about any of the information provided to you?

## **QUESTIONS FOR KEY STAKEHOLDERS**

After going over the disclosure for the interview, the following questions were asked to each CERES employee at the start of each interview. Once the general questions

applicable to all employees were completed, depending on the purpose of the interview, employees were then asked questions in Supplementary Materials Appendix D - Appendix G.

1. What is your role at CERES?
2. How long have you been working at CERES?
3. Do you have any experience with CRM technology?

## **QUESTIONS TO ASSESS BARANOWSKI ET AL. (2021) WORKFLOW MAP APPLICABILITY**

1. Do you feel this map adequately depicts the general bookings process for a CERES program?
2. Are there any aspects of this map that are no longer applicable to the current workflow?
3. Are there any steps that could be added to this diagram based on your understanding of CERES' workflow?
4. How would the implementation of the automations outlined in this map affect the completion of your daily responsibilities?
5. Will integrating this workflow into CERES allow you to focus more time on other tasks?

## **QUESTIONS TO ASSESS BARANOWSKI ET AL. (2021) SANDBOX APPLICATION**

1. Would the implementation of this sandbox benefit the completion of your daily workflow?
2. Is there anything that could be added to improve the applicability of the automations?
3. Do you find the system easy to use?
4. Are there any aspects of your workflow that

the system does not feature?

5. In your opinion, how would the implementation of this sandbox affect the customer's experience?

## **QUESTIONS TO CREATE A CUSTOMER JOURNEY MAP**

1. How do CERES' Customers normally hear about CERES?
2. Does CERES do any recruiting or advertising to get customers to come?
3. How can a customer register for an event at CERES?
4. Are there any other ways that a customer can register?
5. After registering, what are the next steps for the customer?
6. How is that registration handled by CERES?
7. Between registering and attending an event, are there any steps that need to be taken, and do those steps differ between Student, Teacher and Community Programs?
8. After an event, is there any follow up to gain feedback on the customer's experience at CERES?
9. After an event, is there any follow up to get customers to return?
10. Is there any additional interactions between CERES and their customers that were not already mentioned?

## **QUESTIONS TO DETERMINE OPTIMAL CRM IMPLEMENTATION PARAMETERS**

1. Do you currently, or have you ever, used a CRM?



2. What parts of a CRM do you find most helpful?
3. What parts of a CRM do you find most challenging?
4. Are there any aspects of your job you think could be simplified through automation within a CRM?
5. What app would you like to see integrated into a CRM?
6. How do you see Monday.com playing a part in your workday at CERES?
7. Is there anything you would like included within Monday.com that has not been mentioned?
8. Is there anything you are concerned integrating a new CRM might impact for the employees at CERES?
9. Is there anything you are concerned integrating a new CRM might impact for the customers of CERES?
10. How could the rollout of Monday.com be designed to minimize the effect on the customer experience?

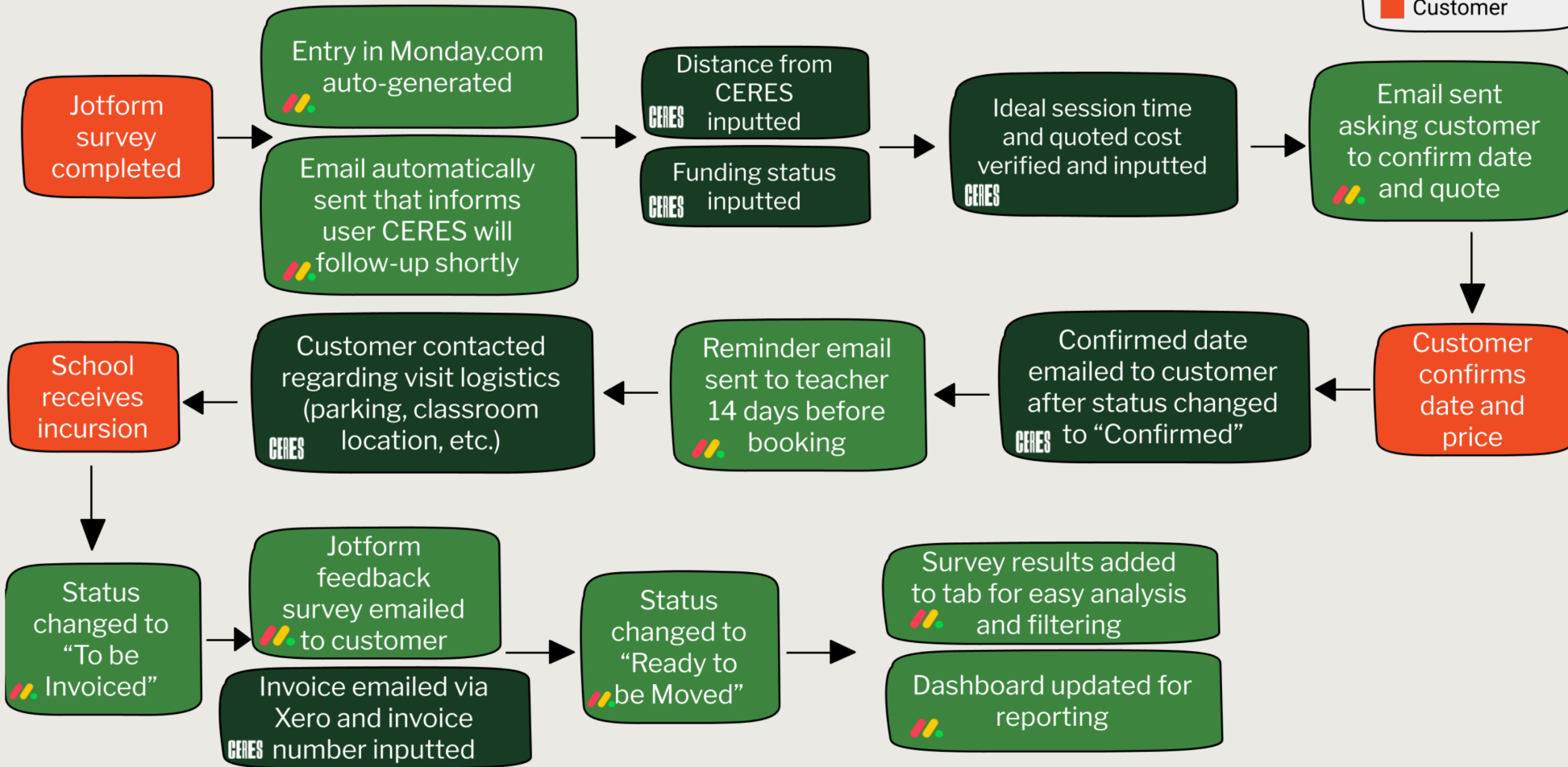
daily tasks and how will this impact the CERES?

### **QUESTIONS TO CREATE A REPORTING DASHBOARD**

1. What statistics are you currently collecting and how?
2. How long does it typically take you to collect the data?
3. What additional statistics will you like to collect?
4. What will you use the current and new data for?
5. How will centralizing the reports impact your

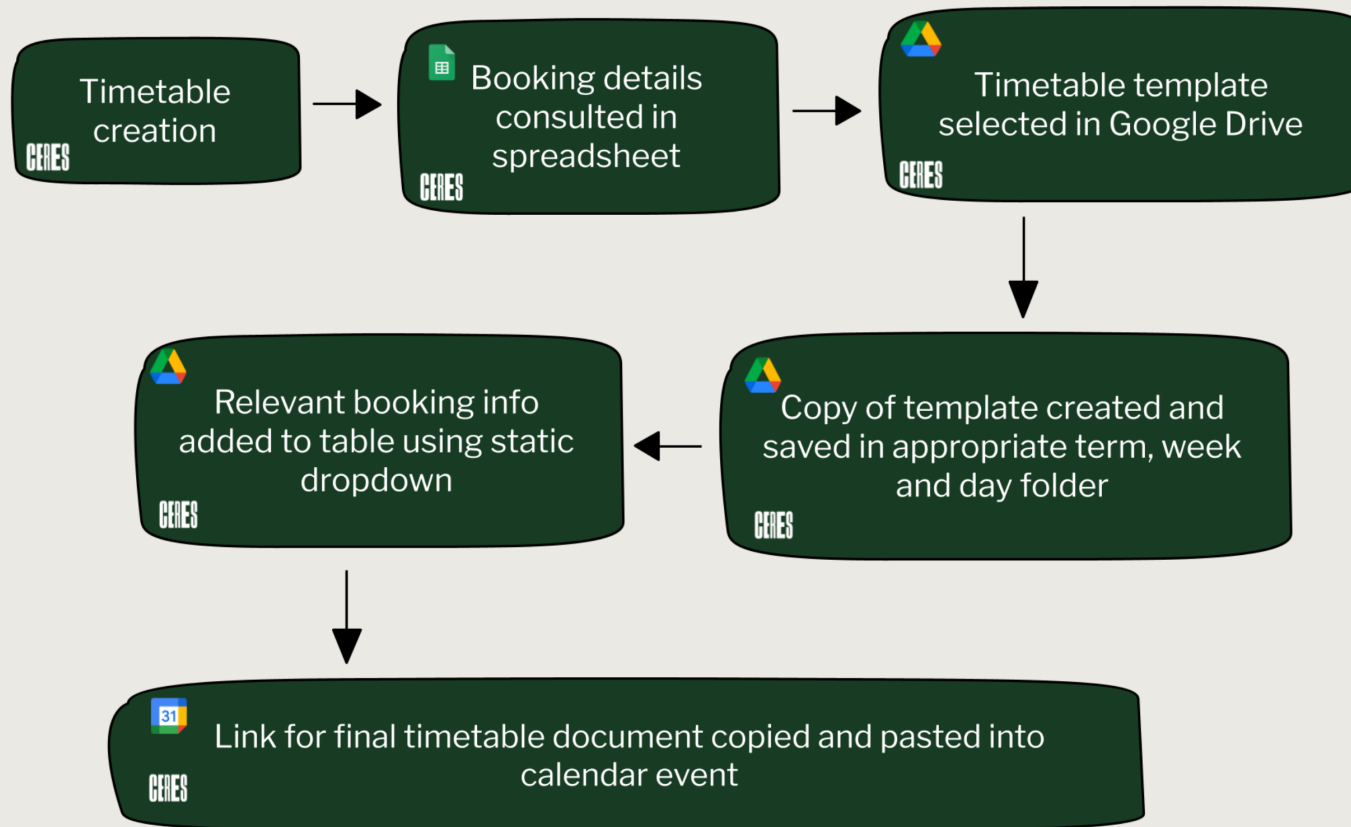
# BOOKING STAFF WORKFLOW - INCURSIONS

■ Automatic  
■ CERES staff  
■ Customer



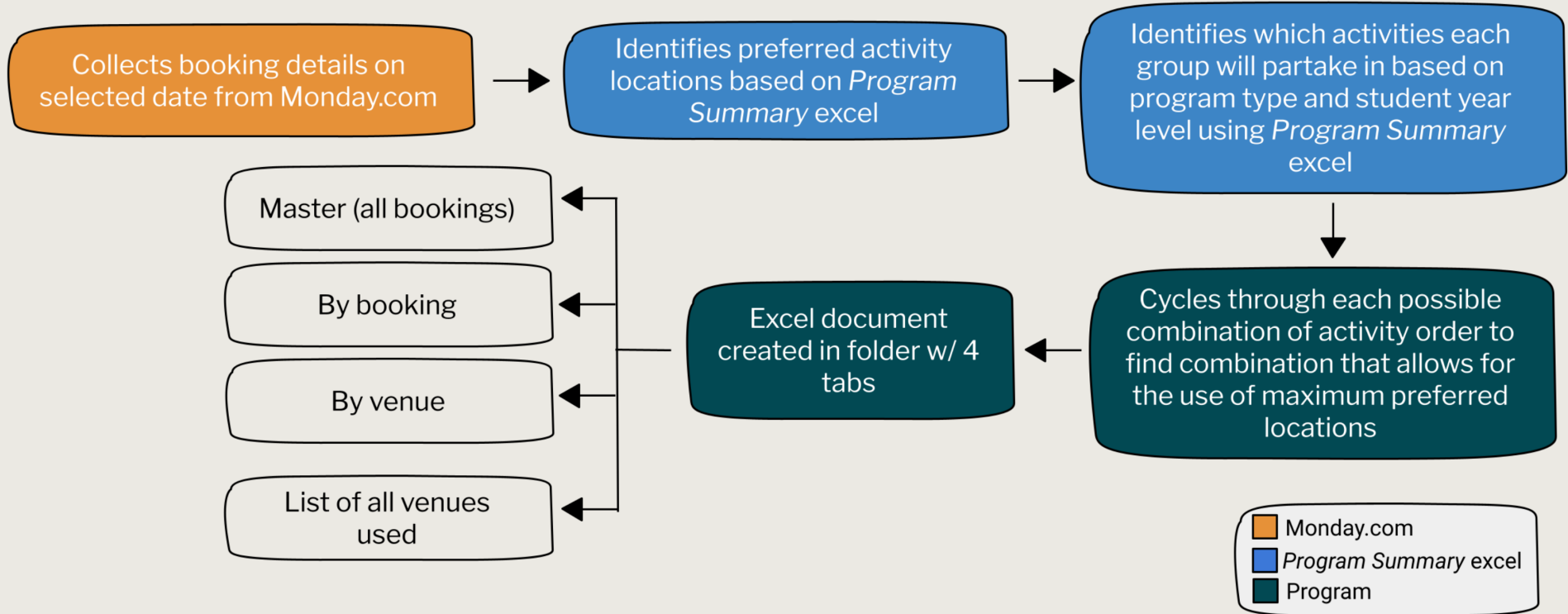
Visualization of the new incursion booking process with the incorporation of Monday.com

## CREATING A TIMETABLE – ORIGINAL PROCESS



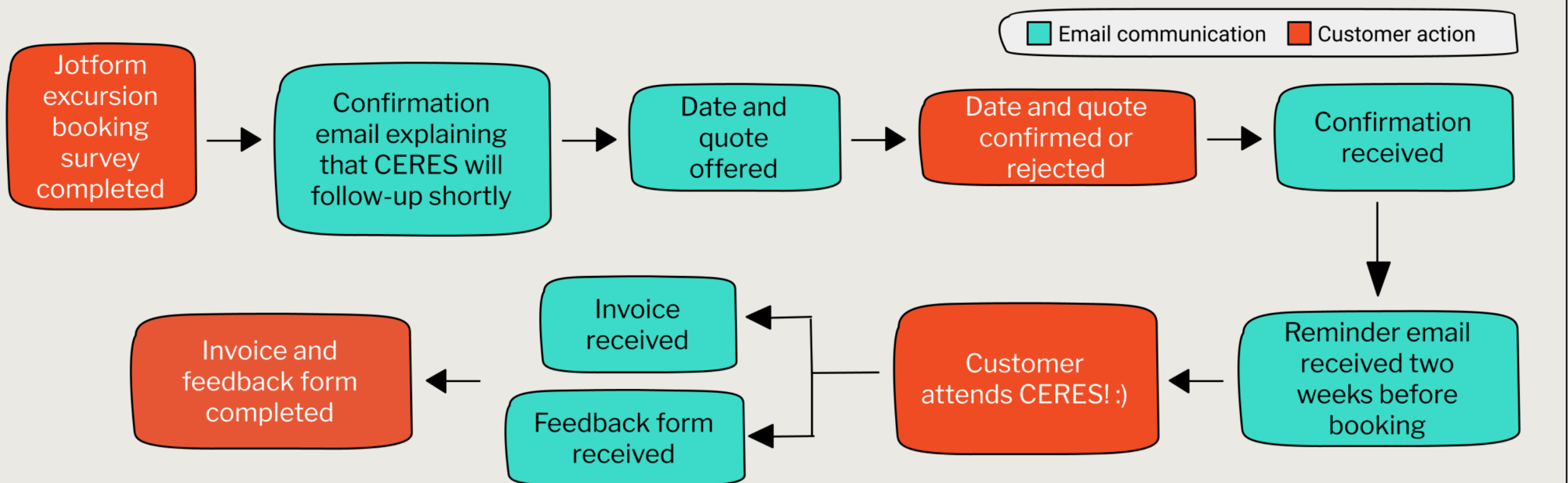
*Visualization of the original process of creating a timetable*

# BREAKDOWN - TIMETABLE CREATION



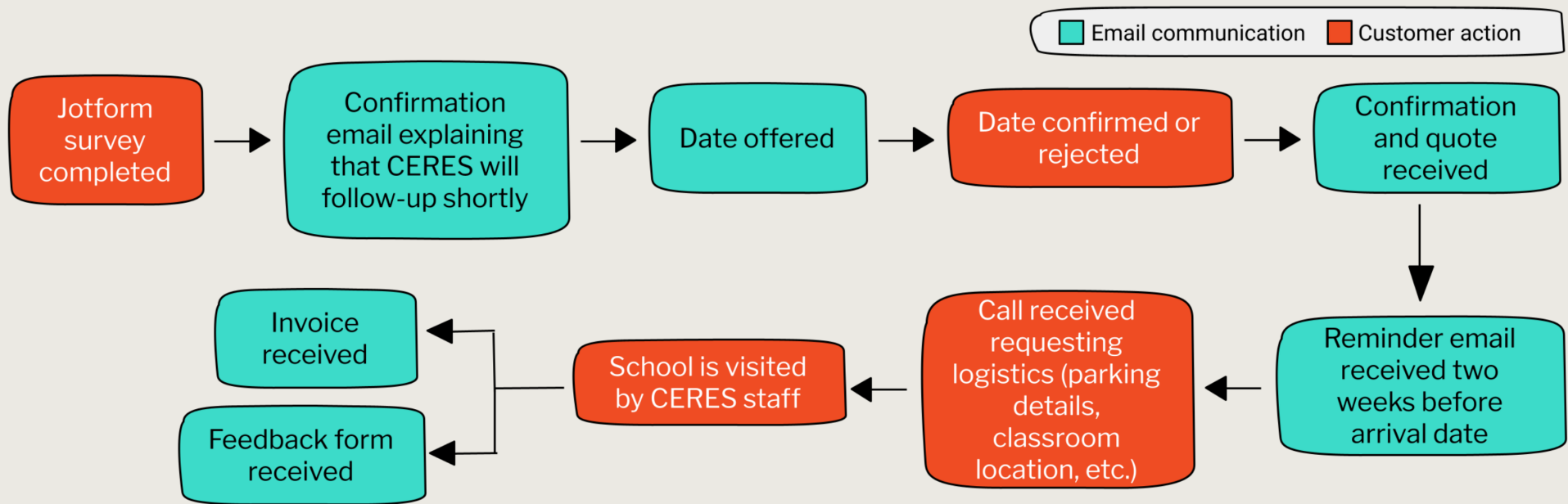
*A workflow of how the external program works*

## CUSTOMER MAP – EXCURSIONS



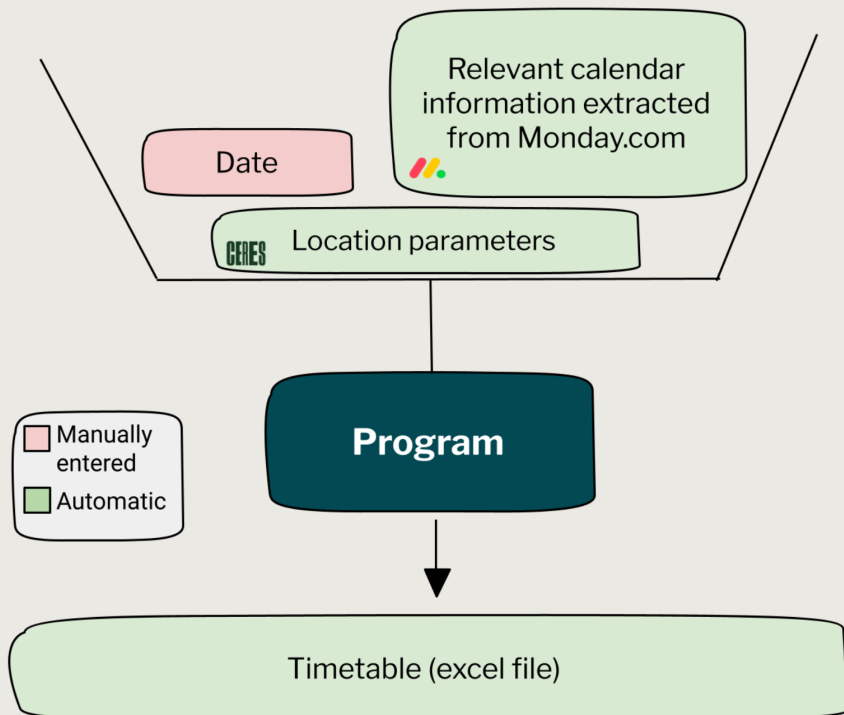
Visualization of the customer map for the excursion booking process

# CUSTOMER MAP – INCURSIONS

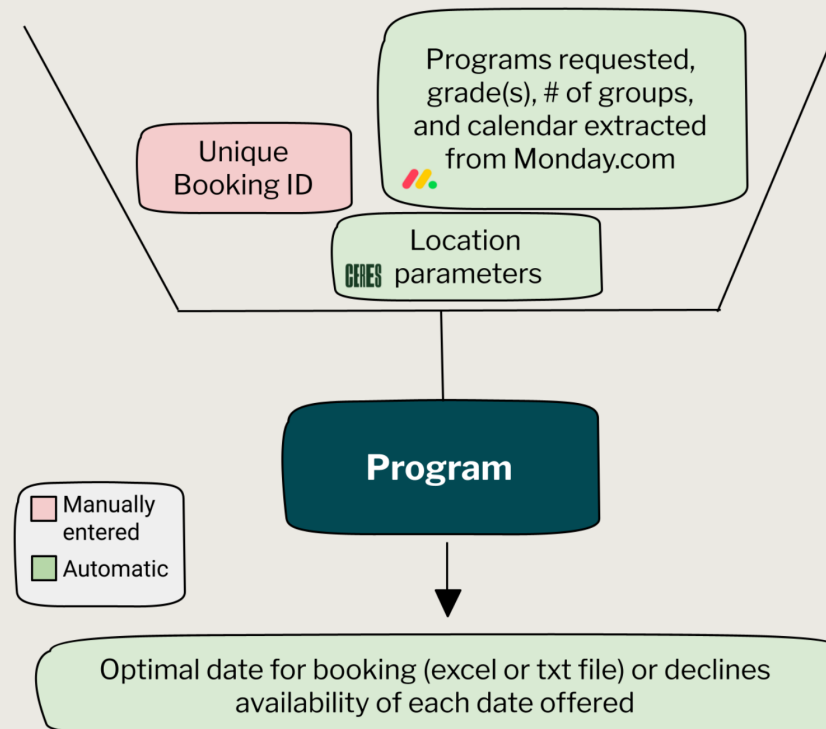


Visualization of the customer map for the incursion booking process

## PROGRAM BREAKDOWN



## PROGRAM BREAKDOWN



*Visual of all the inputs needed for the external program and it's corresponding outputs*