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Case Study: Engaging the Campus Community to Create an on Campus Hackathon

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Abstract

In recent years, hackathons have gained significant prominence as a platform for students to gain real-world experience in computer science. However, not all university campuses offer equal opportunities for students to participate in such events, leading to disparities in practical exposure. For instance, students at our own undergraduate and graduate degree institution have not been organized to attend hackathons. These events foster a unique blend of creativity, problem-solving, and teamwork, which are fundamental skills in the tech industry today.

This paper presents a case study aimed at addressing this issue by creating a hackathon on our campus. While the effort was initiated by faculty members, the goal was to have the event be student driven with the faculty providing support and oversight. This paper will discuss how the student community was engaged in organizing the event and created four working groups (logistics, operations, finance, and marketing) to accomplish the monumental task of creating a hackathon in a twelve-month span of time. This paper will additionally discuss the various offices and groups that were engaged as part of making this effort possible. We will then conclude by discussing the student learning outcomes of organizing this event.

By sharing our experiences and insights in this study, we aim to empower educators and students to create hackathons on their campuses, enriching student learning through hands-on experience, collaboration, and engagement with the broader tech community. Through this case study, we also aim to provide insights into the practical challenges and successes of creating this type of event for the first time on our campus.

1 Introduction

With more than 300 weekend events and more than 500,000 students participating each year[1], MLH hackathons are popular among college and university students who are learning to be coders. These events provide students with opportunities to get hands-on with tools and technologies they may not necessarily have the opportunity to be exposed to in the classroom. Moreover, participating students get the chance to network with both their peers at other institutions and also with sponsoring companies, which could lead to internships and jobs out of school. They also provide a unique opportunity for students to develop in-demand skills and contribute to advancing engineering knowledge.

As an institution, our goal is to provide our students with opportunities like these to help propel

their careers and their skills forward. In the past, we sought to create a bus trip to get our students to these MLH events at other institutions in nearby cities, but the trip ended up being difficult to do logistically and presented a non-trivial cost to the university.

Instead, our university opted to organize our own hackathon. This presented a unique opportunity to provide our students with the opportunity not only to gain skills by participating in the hackathon, but also to be organizers of the event. In doing so, students will also have the opportunity to learn about things such as teamwork, planning, and budgeting...all of these being skills they can benefit from when in industry.

2 Background

As the landscape of engineering education is evolving in a rapidly changing technological world, it demands innovative approaches to equip students with practical skills and necessary experiences. Hackathons are a worldwide phenomenon that offers multiple outcomes for industry, educators, and students. Hackathons also come in various forms, each catering to different audiences and goals. At university level, these are fast-paced and collaborative events where student programmers gather to address software challenges, usually over 24 to 48 hours. However, hackathons are not just about coding. They also involve presentations, workshops, and networking opportunities with sponsors and mentors. For student organizers, these events are an opportunity to ignite their entrepreneurial spirit as well as a platform for event design, development, and networking [2]. Another advantage of hosting such events on campus is that it allows students to take charge and apply theory to real-world problems. Consequently, it also encourages student community, brings leadership, and accountability. Additionally, hackathons are also a pedagogical tool that improves critical thinking, problem-solving abilities, and teamwork [3, 4]. This combination makes hackathons incredibly valuable for participants and organizers alike as it provides students professional growth within the academic environment.

Despite the popularity of hackathons, there exists limited research that answers question: what are the practical differences and challenges in organizing student-led hackathons at a mid-size university for the first time? The available MLH guide [1] and other similar planning resources [5, 6] outline the general preparation process on how to prepare and execute a hackathon by focusing on a particular format. Existing literature are mainly correlative case studies that outline the benefits of hackathon in educational ecosystem [7, 8]. These resources do not allow a proper understanding of the causal processes on how to organize and execute an effective student-led hackathon. To address, we share our methodology and experiences in overseeing time-based student-driven hackathon at our university.

3 Implementation

This hackathon was built with the purpose to highlight the talent at our university and nearby regions to sponsors and recruiters. To do this we engaged students in our department, worked to gain support of high ranking members of the university, and worked with nearby schools to draw in attendees.

3.1 Engaging Students

First and foremost was to make sure that students were involved in this effort. To do this, the event was advertised to students as their opportunity to ”do something big on campus”. This peaked students’ interest and helped us garner a strong group.

To further get students excited, an executive board was formed with students filling all of the officer positions. The faculty stepped back at this point and filled a strictly advisory role in which they looked to help resolve issues that were out of the students ability to solve on their own.

To further incentivize students to work on this project, two major promises were made to them. The first one was to promise them exclusive face time with the industry sponsors. This took the form of a breakfast on the first day of the event. The second was to award them Professional Enrichment Program (PEP) credits for their work that counts towards the undergraduate degree. These credits were contingent on them participating on two trainings for the event, one on conflict de-escalation and the other on networking.

3.2 University Support

While the faculty worked to clear up as many issues as possible, there were times where the faculty did not have the necessary permissions, authority, or resources to resolve the issue. To this end there were several people the faculty worked to engage in the organizing effort.

3.2.1 Events Director

Due to the amount of space needed for the hackathon, it was necessary to engage the Events Director on our campus. Through their office we were able to not only reserve all of our spaces but also set up the necessary signage and handle all of the liability related matters to ensure the event was up to university regulations.

3.2.2 Advancement Office

As neither the students nor the faculty are permitted to enter a contract it was necessary to involve the Advancement Office. This office was also able to help with getting connected to companies who could help sponsor the event which was key in getting students to attend. Without appealing sponsors, students would not have a reason to attend.

3.2.3 The President’s Office

To provide a high level backstop and assist in any matters where necessary, the President’s Office was engaged. While not used frequently, by having this office aligned with our goals we were able to quickly resolve any major roadblocks that came our way.

3.3 Working with Nearby Schools

To help with getting students interested in participating in the event, the chairs of Computer Science departments at multiple area schools were contacted. They were asked to disseminate to

their students and faculty information about our event. When possible, on site visits for student organizers were set up to further connect with students at other campuses and get them to register to participate.

4 Student Learning Outcomes

There were several learning outcomes that were achieved by the students in completing this project. Each one is discussed below.

4.1 Project Management

By its very nature, a hackathon is something that has many moving parts. For this reason, students had to exercise their project management skills. During this project students had to delegate tasks as well as manage deadlines such as submission of the application to MLH. Students managed this project by breaking into four working groups as previously discussed and creating an eboard for the event. Tasks were divided among the different groups as appropriate and it was up to each group to manage the task to completion.

4.2 Teamwork

While the groups were given separate tasks, it was not unheard of for their to be overlap between the different teams on a task. For example, for one of the tasks the students had to create t-shirts for the event. This required the marketing team to work with the finance team to create a design and determine the most cost effective way of printing the shirts so as to not go over budget.

4.3 Communication

Communication played a huge role in this event. Students had to communicate both within their groups and also between the groups to accomplish tasks, They also had to design flyers and social media posts to get the word out about their event. On top of this, the students needed to work with others including various offices around campus and outside agencies such as restaurants to get pricing for catering.

5 Difficulties and Challenges

While the event was successful, there were some issues along the way. Two major issues were student retention and also administrative roadblocks.

5.1 Student Retention

During the course of this event, there was a high level of turnover among student organizers. The reason for this was largely the workload that students had to complete for their courses compounded with the numerous responsibilities in creating a hackathon. To help mitigate this, students were offered Professional Enrichment Program (PEP) Credits for their participation which helped them in completing their sixteen PEP credit requirement.

5.2 Administrative Roadblocks

As this was the first time an event of this nature was done on campus, there was some concern about having a twenty-four hour event occurring on campus and what that would mean for the university. To help assuage those concerns, the faculty worked closely with the various offices involved to help raise awareness as to what a hackathon is and what these events entail. Once people understood what the event was the concerns were quickly resolved.

6 Results and Conclusion

Hackathons are an innovative method for educational development through interdisciplinary and interprofessional exchange. Under faculty guidance, a 24-hour hackathon was organized for the first time on campus where student involvement was central throughout the year-long planning process. This paper presents a case study addressing practical differences, challenges, methods used to resolve them and student learning outcomes. With students leading all aspects of event planning and execution, a strategic collaboration with various university departments and community outreach was a key. This included support from university offices for logistical and sponsorship support and outreach to regional institutions to gather registrations for the event. Significant challenges were maintaining consistent student involvement and navigating administrative hurdles. These were addressed by providing incentives for student participation and aligning university offices by raising awareness on the importance of hackathon. The findings provide practical insights for organizing similar student-led initiatives and demonstrates the feasibility and value of organizing such events in educational settings.

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