

Internship for Integrating Digital PR and Ad Tech

by

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An internship final report submitted to the Department of Computer Science and
Engineering
in partial fulfillment of the requirements for the degree of
B.Sc. in Computer Science

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Declaration

It is hereby declared that

1. The thesis submitted is my/our own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. We have acknowledged all main sources of help.

Student's Full Name & Signature:

A handwritten signature in black ink, appearing to read 'ibnul', with a long, sweeping horizontal stroke extending to the right.

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Approval

The report titled “Internship as an Intern, Web Tech Team” submitted by

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Abstract

The Full Stack Online Developer Internship seeks to provide aspiring developers with a comprehensive grasp of creating dynamic and responsive online applications via hands-on experience. The program aims to bridge the gap between theoretical knowledge and practical skills via internships in actual development projects. The internship program will include all aspects of web development, including the creation of user-friendly interfaces, database management, and the implementation of large-scale systems. The course guarantees that participants achieve expertise in both front-end and back-end technologies via a comprehensive methodology. Interns will explore the latest front-end technologies, including HTML5, CSS3, and JavaScript frameworks such as Angular or React.js. They will acquire the skills to design user interfaces that are both interesting and user-friendly, guaranteeing a uniform experience across several devices. During their internship, students will acquire expertise in back-end frameworks such as Flask, Django, and Node.js, in addition to server-side scripting. Interns will acquire proficiency in database integration, server management, and API development via practical projects using PostgreSQL, MongoDB, and MySQL. Participants will get practical experience by using effective data retrieval and storage techniques, comprehending data models, and designing and managing databases. We will examine relational and non-relational databases, highlighting the significance of data integrity and scalability, while also introducing version control tools, namely Git, to the interns. They will get insights into optimal strategies for collaboration, code evaluations, and effective communication among developers via joint projects. In web development, security is the main concern. Interns will be instructed on best practices of security, including data encryption, authentication and authorization. They will get information on identifying and mitigating common security vulnerabilities. The internship will include the web application deployment process using AWS, Heroku, or Netlify. Interns will be instructed on principles of continuous integration and deployment (CI/CD) as well as the processes of DevOps. Internship participants will engage in authentic projects that replicate scenarios they may encounter in professional environment. Upon completion of the program, interns will possess a robust portfolio that demonstrates their expertise in the development, deployment and maintenance of full-stack web applications. The goal of this full-stack web developer internship is to provide participants with the knowledge, abilities, and self assurance necessary to succeed in the fast paced world of web development and set them up for long term success in the technology sector.

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Chapter 1

Introduction

1.1 Preamble

The use of technology in optimizing advertising success has become crucial due to the rapidly evolving landscape of digital advertising. Within this context, I had the unique opportunity to explore and contribute to the definition of the intersection between web development and advertising technology during my internship at the AdTech company Reachable, which specializes in innovative digital marketing solutions. Throughout my internship, I worked on numerous projects that sought to increase the effectiveness of digital advertising campaigns using CPM [2], CTR [3], and CPC [1] calculators. These technologies are crucial to the digital marketing ecosystem because they give marketers the measurements they need to assess the success of campaigns, optimize spending, and achieve higher returns on investment. At Reachable, I not only improved my technical skills but also broadened my knowledge of the AdTech industry. In this market, web development is crucial because it creates the framework for platforms and technologies that make advertising effective. I was able to connect the knowledge gap between theory and practice through my internship by learning how to address real-world issues in digital marketing. My internship at Reachable was a transformative experience that contributed to my professional development. In this report, I describe my responsibilities, the knowledge and skills I acquired, and how my work contributed to the company's goals.

1.2 Objective

During my internship at Reachable, my primary objective was to establish a solid foundation in web development within the AdTech platform. This involved acquiring technical expertise in coding, system analysis, and project management, as well as familiarity with the instruments and metrics used in digital advertising. In particular, I sought to support the development of three essential tools: the CPM [2] (Cost Per Thousand Impressions), CTR [3] (Click-Through Rate), and CPC [1] (Cost Per Click) calculators. These technologies are necessary for advertisers to evaluate and optimize the efficacy of their campaigns, and I was eager to apply my experience to create useful and accessible solutions. Additionally these technical objectives, I intend to immerse myself in the workings of a thriving AdTech company. Understanding Reachable's organizational structure, communication channels, and work environment is essential to my overall development.

1.3 Information Sources

I used a variety of information sources to guide me in my role and broaden my understanding of the current tasks during my internship. The core source of information was internal Reachable resources, which provided comprehensive project briefings, technical specifications and business-specific regulations. These resources were extremely helpful in ensuring that my work aligned with the company's standards and objectives. Additionally, I used online tools such as forums, coding communities, and courses to acquire new skills and overcome challenges. StackOverflow and GitHub were specifically valuable for researching best practices in web development and solving coding issues. Furthermore, my learning approach mostly relied on mentorship. My boss and other members of the Reachable team were always available to offer guidance, address inquiries and provide feedback on my work. Their insights were instrumental in helping me navigate the complexities of the projects I was involved in. These discussions, along with team meetings and brainstorming sessions, have enhanced my understanding of the AdTech industry and the objectives of web development within it. I have gained valuable insights into decision making processes and collaborative project development.

1.4 Document Overview

This essay is structured to provide readers a comprehensive overview of my internship at Reachable. The introduction sets the stage by outlining my aims, information sources, and work history. Subsequently, the company profile section examines Reachable in detail, including its history, key offerings, and market position in the AdTech industry. This section also details my first day at the company, emphasizing the onboarding process and my first thoughts. The organizational structure, communication methods, and work environment of Reachable are examined in the section on workplace details. Throughout my internship, it provided insight into team dynamics, remote work management, and business processes. The section on my contributions, which discusses the specific projects I worked on, the process of system analysis and design, and the technical challenges I ran into, is the main focus of the report. This section also contains my reflections on my responsibilities and how my work influences the company's objectives. The report concludes with a section on my growth during the internship, both personally and professionally. This section includes an analysis of the knowledge I gained, the skills I honed, and the overall impact the internship had on my career trajectory. On the final page, I provide a summary of my experience and recommendations for future Reachable interns.

Chapter 2

Company Profile

2.1 Company Overview

Prospective Reachable, an AdTech company, has established a name for itself in the field of digital advertising. Reachable was first established to revolutionize the evaluation and distribution of digital advertising. Since then, it has consistently pushed the boundaries of AdTech industry innovation. The company offers a range of products and services designed to increase user engagement, optimize the impact of ads, and provide advertisers with the tools they need to succeed in a competitive market. Their core offerings, which cater to a wide range of customers, include robust advertising platforms, data analytics tools, and optimization services for small and large enterprises alike. The company takes great pride in its ability to provide customized solutions that satisfy each customer's needs. This customer-centric approach, along with a strong focus on innovation and technology, has enabled Reachable to take the lead in the AdTech industry. Its history is outlined by a series of occurrences that reflect the growth and development of the business. Reachable has always made adjustments to the changing landscape of digital advertising, from its early days as a startup to its current position as a significant player in the industry. The company's executive team, which is made up of seasoned professionals with a variety of backgrounds, has played a major role in accelerating its development. Reachable has been able to stay ahead of the curve in a sector that is always evolving because of its vision and strategic direction.

2.2 First Day of Joining Reachable

On my first day at Reachable, I felt a mixture of anticipation and excitement as I entered the AdTech world. The well-crafted onboarding procedure demonstrated the business's commitment to ensuring that new personnel mesh well with the group. Upon my arrival, I was met by my supervisor who provided me with an overview of the projects I would be working on and her expectations for my role. The first session set the tone for the internship by emphasizing the need for cooperation and good communication. I received orientation training to familiarize myself with the company's technology, tools, and processes. My exposure to different teams and divisions within the company helped me understand how my role fits into the larger organizational structure. The initial training sessions provided me with the technical skills and knowledge needed to contribute effectively to my tasks. My first impres-

sion of Reachable was positive. The business culture emphasized collaboration and teamwork, creating a friendly and welcoming environment. The workplace was vibrant and lively, fostering inventiveness. I quickly realized that suggestions were valued and all team members, regardless of rank, were encouraged to contribute to the company's success. This supportive atmosphere was crucial in helping me feel comfortable taking on my responsibilities and settling in.

2.3 Products and Customers Overview

Reachable is committed to offering the AdTech industry innovative and high-quality ideas, as evidenced by the variety of goods it offers. The company's main offerings are sophisticated advertising technologies that enable clients to easily manage and optimize their digital marketing campaigns. Marketers can create, monitor, and modify their campaigns in real time thanks to the user-friendly interfaces of these systems. Additionally, customers can gain a thorough understanding of campaign performance, audience interaction, and return on investment through the platforms' robust data analytics tools. In addition to its communication channels, Reachable provides a range of data analytics tools to help clients make informed decisions about their advertising strategies. These tools use advanced algorithms and machine learning techniques to analyze large volumes of data, identify trends, and offer practical recommendations. The company's focus on data-driven decision-making, which allows clients to maximize their advertising efforts, is one of its key advantages. Reachable serves a diverse range of industries and companies, including large corporations looking to optimize their digital advertising spend and small enterprises aiming to increase their online visibility. The company's ability to tailor its products and services to meet the unique needs of each client contributes to its success. Through close collaboration with clients, the company creates solutions that provide measurable results and aid in understanding goals and challenges. They often use case studies to highlight the value of their solutions by showcasing successful marketing and satisfied customers. These case studies demonstrate the effectiveness of Reachable's platforms and solutions in practical settings, offering insight into how to utilize them to further business growth. Positive feedback from customers serves as proof of the high quality of the products and the Reachable team's dedication to providing excellent customer service.

Chapter 3

Workplace Details

3.1 My Responsibility

During my internship at Reachable, I had various responsibilities that allowed me to apply my technological expertise to help the company achieve its objectives. My main focus was on developing three key tools: a CPM [2](Cost Per Thousand Impressions) calculator, a CTR [3] (Click-Through Rate) calculator, and a CPC [1] (Cost Per Click) calculator. These tools are crucial for the company's advertising systems as they enable users to evaluate the effectiveness of their campaigns. The development process involved planning, coding, testing, and deployment. During the planning phase, I defined the project requirements and collaborated with my supervisor and team members to create a comprehensive project plan. This involved setting timelines, breaking down tasks, and identifying potential challenges to ensure that the project stayed on track and met its objectives. In the coding stage, I used my technical skills to bring the idea to life. I utilized programming languages and frameworks to develop the core functionality of the calculators, ensuring that the code complied with company standards. I also had to ensure that the calculators worked with existing systems and optimized their performance, addressing technical challenges by employing creativity and critical thinking. Testing was another crucial aspect of my work. I conducted thorough testing to identify and resolve any issues, creating test cases, running simulations, and analyzing results to ensure that the calculators performed as expected. I worked closely with the quality assurance team to verify the calculators and gather feedback for future improvements. After the calculators were tested and finalized, I participated in the deployment process, integrating the calculators into the company's advertising systems and ensuring their user-friendliness. I also assisted in resolving any issues that arose and making necessary adjustments during the initial release. My labor came to an end during the deployment phase, when I saw clients using the tools I had developed to enhance their advertising efforts. Apart from the calculators, I have also worked on a tool called Papercable [4]. I designed the flowchart for the whole product. Papercable is a product that provides digital PR analytics. This is the first-ever [4] tool that is made in Bangladesh and the first-ever Digital PR platform as well. My task was to design the product along with the flow chart. The dashboard screenshot is given below.

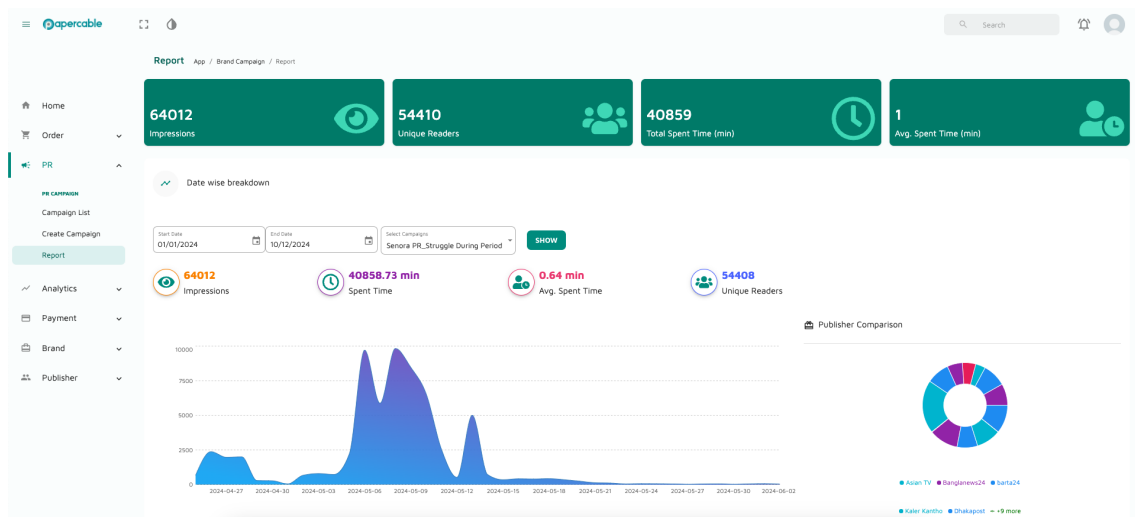


Figure 3.1: Figure 1

3.2 Organization Structure

The organizational structure of Reachable is designed to encourage productivity, innovation, and cooperation. The company places a greater emphasis on cross-functional collaboration and teamwork than it does on management levels due to its flat organizational structure. This method facilitates speedy decision-making and enables the company to respond quickly to shifts in the market and client needs. The executive team is at the top of the organization and consists of the CEO, CTO, and other senior executives. These individuals oversee the business's operations and contribute to defining its strategic direction. They work closely with department heads who oversee operations in areas including product development, marketing, sales, and customer support. Each department head is responsible for leading a team of professionals who are expected to execute the company's plans and achieve its goals. As a member of the product development team, I contributed to creating and maintaining the company's advertising platforms and tools. The crew consisted of UX/UI designers, web developers, software engineers, and quality assurance specialists. Working closely with the sales and marketing divisions, we ensured that our products met consumer needs and aligned with the organization's overall business objectives. One of the key benefits of Reachable's organizational structure is its focus on collaboration. Teams are encouraged to plan projects, share ideas, and contribute to the development of new features and products. This collaborative approach fosters innovation and allows the company to leverage the diverse skill sets of its employees. Additionally, it creates an inspiring work environment where team members are enthusiastic about supporting the company's growth and feel appreciated.

3.3 Communication

Clear and effective communication is indispensable for the functioning of any organization, and at Reachable, it is of paramount importance. The company employs a diverse range of communication channels and technological tools to facilitate col-

laboration, information dissemination, and decision-making. These include email, instant messaging platforms such as Slack, video conferencing using Zoom, as well as project management systems like Jira and Trello. Formal communication at Reachable is conducted through scheduled meetings, presentations, and reports, during which teams evaluate project progress, share information, and make decisions. These sessions, typically led by department heads or team leaders, provide team members with an opportunity to voice concerns, pose questions, and contribute to the discourse. Informal communication takes place through spontaneous conversations, quick chats, and casual interactions. Effective communication is pivotal in nurturing relationships, fostering a sense of belonging, and addressing issues as they arise. Reachable places significant emphasis on informal communication as it cultivates a more transparent and collaborative work environment. Throughout my internship, I engaged in both official and informal correspondence. I regularly participated in team meetings to provide updates on my projects and receive feedback from my supervisor and other team members. These meetings were essential for ensuring that my work aligned with team objectives and that I remained focused on my tasks. Additionally, I initiated informal conversations with my colleagues to forge robust relationships and integrate more fully into the company. Adapting to various communication styles and preferences was one of the challenges I encountered in this line of work. Some team members liked to check in quickly verbally, while others preferred to write detailed reports. To deal with this, I made an effort to modify my communication style and my contacts list to suit the preferences of my coworkers. This ensured that both my staff and I could efficiently collaborate with them.

3.4 Remote Office

The trend toward remote work was accelerated by the COVID-19 pandemic, and Reachable has fully embraced this new way of working. During my internship, I had the opportunity to see remote work firsthand, which has its benefits and drawbacks. Setting up a home office conducive to productivity and focus was necessary for working remotely. To ensure feasibility, I invested in a large monitor, a comfy chair, and a stable internet connection. Maintaining a healthy work-life balance is one of the main challenges of working remotely. Without a clear demarcation between work and home, it might be challenging to switch off at the end of the day. To deal with this, I created a daily routine that included exercise, regular breaks, and time away from the computer. This routine helped me stay focused during work hours and relax during my free time. Remote work also requires strong time management and self-discipline skills. In the absence of the structure of an office environment, one may quickly get distracted. To stay on track, I used time management techniques like the Pomodoro method, which suggests working in brief, focused bursts interspersed with short pauses. This tactic helped me manage my obligations and stay productive. Despite its challenges, working remotely offers many benefits. Flexibility is the main advantage. Working from home allowed me to schedule my own time and work when I was most productive. This flexibility allowed me to balance my work and other commitments, such as spending time with my family and pursuing personal interests. Due to the elimination of travel requirements, working remotely also saved me time and reduced my stress levels. Working remotely also offers the opportunity to learn

new skills and become more independent. I had to be proactive, look for solutions on my own, and manage my time well while working alone. These skills are valued in both remote work environments and all professional settings. I had a mostly positive remote work experience with Reachable. The company provided the equipment and assistance needed for effective working from home, and my team was always there to provide guidance and support. Working remotely allowed me to learn important skills and gain insight into the structure and administration of jobs in the digital age.

3.5 Workspace Facilities

During my internship at Reachable, I spent most of my time working remotely. However, I did have the chance to visit Reachable's offices and see the technology they use. The workspace at Reachable is designed to improve productivity, teamwork, and employee well-being. The office features the latest technology and comfortable workstations with lots of natural light, all set in an open, modern design. One of the best things about the office is the variety of workstations available. In addition to individual workstations, there are communal areas for group projects and quiet spaces for focused work. This flexibility allows employees to choose the workstation that best suits their needs and the type of work they're doing. The office also has many conference rooms with video conferencing capabilities, which enable quick communication between remote team members and customers. These conference rooms are used for team meetings, presentations, and brainstorming sessions, as well as for important discussions and decision-making. In terms of amenities, Reachable offers a range of options to promote the well-being and happiness of its employees. There's a fully stocked office kitchen that provides coffee, beverages, and snacks all day long. Employees can also unwind and relax in the break area, which has comfortable seating, games, and a television for socializing and unwinding. Reachable places a high value on creating a positive, welcoming workplace atmosphere. This is reflected in the many team-building activities and cultural events planned throughout the year. Among other things, workplace outings, holiday parties, and birthday celebrations foster a sense of community among employees. During my internship, I had the opportunity to participate in a number of these events, which were a great way to get to know my colleagues and deepen my connections to the company. The workplace facilities offered by Reachable are designed to promote general collaboration, productivity, and well-being among staff members. Modern workspaces, accommodating work hours, and a strong focus on employee satisfaction all combine to create an environment where employees can thrive and support the expansion of the company. I gained a deep understanding of the workings of an AdTech company and the importance of a supportive and cooperative work environment during my tenure at Reachable. The organization's communication guidelines, workplace facilities, and organizational structure all contribute to a productive and happy work environment. I am grateful for the opportunity to have worked for such a creative and forward-thinking company as Reachable, which allowed me to improve both technically and professionally throughout my time there.

Chapter 4

Contribution to the Company

I had the opportunity to greatly assist Reachable's ambitions and objectives throughout my stint there. My main focus was on creating three calculators: a CPM [2] calculator, a CTR [3] calculator, and a CPC [1] calculator. Marketers need these tools to evaluate the effectiveness of their campaigns and optimize their advertising strategies. In this section, I will provide detailed information about the work I did on these projects, including the system analysis and design process, the challenges I encountered, and the impact of my work on the company.

4.1 My Contribution to the Company

During my time at Reachable, I focused on creating three essential tools: the CPM[2], CTR [3], and CPC [1] calculators, which are crucial to the company's advertising platforms. These technologies provide advertisers with data to evaluate and improve their campaigns. The CPM [2] calculator helps marketers calculate the cost of reaching 1,000 prospective clients, making it vital for assessing the efficiency of advertising channels and campaign cost-effectiveness. I designed the user interface, implemented fundamental functions, and tested the CPM [2] calculator to ensure reliability and accuracy. The CTR [3] calculator determines the proportion of people who click on an advertisement after seeing it, providing crucial information for assessing ad effectiveness and optimizing campaigns for more interaction. I focused on creating a user-friendly interface for the CTR [3] calculator and implemented tools for comparing the CTR [3] of various ads and tracking trends over time. The CPC [1] calculator estimates the cost of each click on an advertisement, which is essential for regulating pay-per-click (PPC) expenses. I developed the cost-per-click algorithm, built the user interface, and ensured the tool's correctness. I also integrated the CPC [1] calculator with the company's advertising platforms to ensure ease of use and data accuracy. I faced challenges in enhancing functionality, ensuring compatibility with existing systems, and managing user feedback. I worked closely with my supervisor and team members to overcome these obstacles. I conducted extensive research and testing to find the best solutions and meet business demands. The positive feedback received from both internal staff and customers validated the success of the calculators, which have now become fundamental components of Reachable's advertising platforms, enabling customers to assess and improve their campaigns more effectively. This experience highlighted the importance of teamwork, problem-solving, and attention to detail in delivering

high-quality products.

4.2 System Analysis and Design Process

During my internship at Reachable, I actively participated in the system analysis and design process, particularly in the development of the CPM [2], CTR[3], and CPC [1] calculators. For the front, I used HTML5, CSS3, Tailwind CSS, JavaScript, and Vanilla JavaScript. For the backend, I utilized PHP and WordPress CMS. The database was built using MySQL. The system analysis phase involved gathering and understanding project requirements. I worked closely with my supervisor and other stakeholders to outline the calculators' objectives and identify necessary features. We conducted multiple meetings and discussions to gather feedback on the calculators' layout and operation and to ensure everyone understood the project's goals. After determining the criteria, I examined the existing systems to identify any potential limitations or hurdles. This involved reviewing the business's current marketing plans, assessing the data sources required by the calculators, and identifying any unmet technical challenges. This analytical method ensured that the calculators would work with the current systems and meet user requests. Following the system analysis, I designed the calculators, producing comprehensive design notes covering functionality, user interface, and tool architecture. I created wireframes and mock-ups in collaboration with UX/UI designers to ensure the design adhered to corporate branding guidelines and was user-friendly. Defining the procedures and reasoning for calculating the CPM [2], CTR[3], and CPC [1] measures was another important step in the design process. After completing the design, I coded the calculators and integrated them with the corporate advertising systems to begin the deployment phase. This involved writing clean, efficient code that complied with company coding standards and testing the calculators for accuracy and functionality. The implementation phase was the most challenging, requiring close attention to detail and an in-depth understanding of the project's technical requirements. After the calculators were used, I conducted a lot of testing to identify and fix any bugs. This included running simulations, assessing the results, and, if required, modifying the plans. I thoroughly verified the calculators with the help of the quality assurance team and gathered feedback for future improvements. The testing phase was essential to ensuring that the final products met business requirements and were of the highest quality. I found that the system analysis and design process was an excellent instructional tool since it provided a comprehensive understanding of how software development projects are planned, executed, and completed. It also emphasized how important problem-solving, cooperation, and communication are to achieving successful outcomes.

Below are the desktop and mobile versions of the calculators.



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Want to know the click through rate (CTR) for your campaigns? Try Reachable's free online CTR calculator.

Use this free tool to calculate CTR of your marketing campaign.

CTR Calculator

Impressions

Clicks

Submit

How to use CTR Calculator?

The CTR calculator determines click-through rate, which helps you evaluate your ad performance. Just input the number of clicks and impressions that the ad received over a set period. Then, the CTR calculator helps you quickly identify the CTR of each ad.

Use the calculator to determine your CTR for multiple ads and digital marketing campaigns, or monitor the performance of a single ad campaign over time.

Figure 4.1: Figure 2



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Calculate your campaign's Cost Per Click (CPC) Instantly!

CPC Calculator

Cost

Clicks

CPC

Submit

What is CPC Calculator?

CPC stands for Cost Per Click and is the amount each click costs. It is usually a good payment model for advertisers, but not that great for website owners.

If you are selling ads on a CPC basis, this means a payout is triggered every time an ad is clicked on. If you are buying ads by the click, it is commonly referred to as PPC (which stands for Pay Per Click). There is actually no difference between CPC and PPC however.

CPC can also be used as a measure of how much clicks have cost when you are using different ad pricing models. Paying for clicks is often cost-effective when you are starting out, but when your CTR starts getting better then a CPM rate can be better.

Figure 4.2: Figure 3



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Calculate your campaign's Cost Per Mile (CPM) Instantly!

CPM Calculator

Cost

CPM

Impressions

Submit

How to use CPM Calculator?

The CPM calculator helps you calculate important metrics to evaluate your marketing campaign by calculating the CPM rate (cost per mille or cost per thousand). It can also help you calculate campaign cost or your campaign's total number of impressions.

To use the calculator, you will need to input two of three fields:

The total cost of your marketing campaign
The cost paid for every 1,000 ad exposures or impressions
The total number of ad impressions made over the length of the campaign

The calculator automatically determines the missing field. It's easy and fast to use and is ideal if you need a simple way to manage your marketing campaign's performance.

Figure 4.3: Figure 4

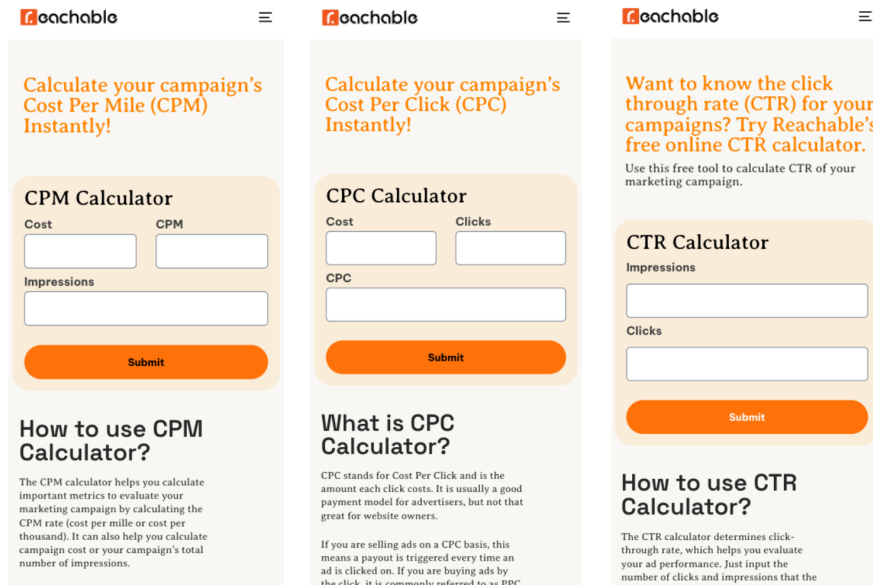


Figure 4.4: Figure 5

4.3 Technical Challenges

During my internship at Reachable, I encountered numerous technical challenges that required creative problem-solving and a deep understanding of the tools and technologies I was using. One of the most difficult tasks was maximizing the performance of the CPM [2], CTR[3], and CPC [1] calculators, which businesses rely on to evaluate the effectiveness of their initiatives. I extensively researched optimization techniques to address this issue and successfully improved the speed of the calculators by implementing parallel processing, caching, and code refactorings. Another challenge was ensuring that the calculators were compatible with Reachable's existing advertising platforms, which are complex systems handling large volumes of data and offering a wide range of features. Integrating the calculators into these systems required a thorough understanding of APIs, data flows, and system architecture. Working closely with the development team, I ensured that the calculators functioned seamlessly within the larger system and could be easily integrated. In addition to performance and compatibility issues, I also faced challenges with user interface (UI) and user experience (UX) design. The calculators needed to have a user-friendly interface that allowed marketers to input data easily and receive real-time results. Collaborating with the UX/UI designers, we developed visually appealing and user-friendly interfaces, ensuring that the calculators met user needs through user testing and feedback. One of the most demanding aspects of the project was managing the timeline and meeting deadlines. Given the complexity and length of the calculator development process, it was essential to stay on schedule. I effectively managed the schedule using project management techniques and tools such as time tracking, job prioritization, and regular progress reports. Maintaining open communication with my supervisor and the project team allowed for prompt issue resolution and ensured that the project stayed on track. In conclusion, the technical challenges I faced at Reachable provided invaluable learning opportunities. They allowed me to enhance my problem-solving skills, deepen my knowledge of the tools

and technology I was working with, and deliver high-quality products that met the company's and clients' needs. My contributions, particularly the development of the CPM [2] , CTR[3], and CPC [1] calculators, provided practical tools for clients to accurately evaluate and optimize their advertising campaigns. The system analysis and design process, along with teamwork, significantly contributed to my professional development. I am grateful for the opportunity to contribute to Reachable's growth and proud of the work I accomplished during my internship.

Chapter 5

Professional and Personal Growth

5.1 Professional Knowledge

During my internship at Reachable, I gained valuable professional knowledge. The experience greatly enhanced my understanding of the AdTech industry, including the tools, strategies, and technologies used to optimize digital advertising campaigns. I learned how to calculate and analyze important campaign performance metrics such as CPM [2], CTR [3], and CPC [1], which are commonly used by marketers. This knowledge is crucial for anyone involved in digital marketing or advertising, as it lays the groundwork for making informed decisions and achieving better results. In addition to industry-specific knowledge, I also improved my understanding of software development techniques. The system analysis and design process was particularly enlightening, providing a comprehensive understanding of how software projects are planned, executed, and completed. Gathering requirements, system analysis, design, coding, testing, and deployment are all essential steps that contribute to the success of a project. Understanding this will be essential for my next position as a software engineer as it provides a solid foundation for managing software development projects. Collaborating with an experienced team of professionals constituted an additional noteworthy facet of my career advancement. Collaborating with my Reachable peers allowed me to learn from their expertise, see how they tackle problems, and improve my skills in project management, communication, and teamwork. I gained a lot of experience working with cross-functional teams when I co-developed the calculators with product managers, UX/UI designers, and quality assurance specialists. This understanding has made it easier for me to recognize how many roles and disciplines work together to produce things and solutions that work. I now have real experience with industry-standard tools and technology thanks to my internship at Reachable. I gained firsthand knowledge from development tools, frameworks, and programming languages widely used in the AdTech industry. Along with strengthening my technical skills, this experience has given me more confidence in my ability to work on difficult software projects and support the growth of a company.

5.2 Skill Development

I had several opportunities throughout my internship at Reachable to hone both my technical and non-technical skills. Coding and software development have emerged

as two of my most useful skills. Working on the CPM [2], CTR [3], and CPC [1] calculators allowed me to solve difficult technical issues, use my knowledge in real-world applications, and write clean, efficient code. I also learned about databases, APIs, and web development frameworks—essential skills for any software developer. I developed my critical thinking and problem-solving skills in addition to my technical knowledge. The challenges I had while developing the calculator pushed me to use my imagination and come up with unique solutions. All of the challenges—whether it was making the calculators work better, ensuring that they would work with the systems that are in place, or designing user-friendly interfaces—were opportunities for me to become better at solving problems and carefully weighing my options. Project management emerged as an additional crucial skill that I acquired. Controlling the growth of the calculators is necessary for meticulous planning, efficient time management, and task prioritization. I have learned valuable skills during my internship, including how to assess my progress, set realistic goals, and break down challenging tasks into manageable ones. I also gained experience with project management tools and procedures, such as task tracking, progress reviews, and regular communication with the project team. These skills are essential for effectively managing tasks in any professional setting. Teamwork and communication were also key areas of skill development during my internship. Good communication was crucial while working with my teammates, both in writing and when speaking. I learned how to communicate my ideas clearly, accept constructive feedback, and collaborate with others to achieve common goals. I also improved my ability to adapt my communication style to suit different audiences, whether it was explaining technical concepts to non-technical team members or providing updates to my supervisor. Additionally, my time management and self-control skills were honed during my internship at Reachable. Working from home required me to effectively manage my time, maintain focus on my work, and balance my responsibilities with other commitments. I learned how to create a conducive work environment, set boundaries between my personal and professional lives, and establish a daily schedule. These skills will not only help me succeed during my internship but will also be beneficial for my future career.

5.3 Professional Network Development

During my internship at Reachable, I found that building my professional network was incredibly valuable. I had the opportunity to connect with a wide range of professionals, including software engineers, UX/UI designers, product managers, and quality assurance specialists. These connections have opened doors for collaboration, professional growth, and valuable insights. Engaging in team meetings, completing assignments, and having informal conversations with colleagues helped me build strong relationships. Additionally, I took advantage of networking opportunities outside the workplace, such as attending trade shows, participating in online discussions, and making business connections on LinkedIn. Through these activities, I expanded my network and connected with individuals who share my interests and career goals. In addition to getting to know my Reachable coworkers, I also interacted with clients and other professionals in the advertising technology (AdTech) industry. These connections allowed me to showcase my skills to a wider audience and opened up potential job opportunities. They also provided me with a deeper

understanding of the industry and its opportunities and challenges. Building my professional network has been instrumental in my career growth, providing access to new opportunities, resources, and support. The relationships I formed during my internship at Reachable will continue to be invaluable as I progress in my career, and I look forward to maintaining and collaborating with the individuals I have met.

5.4 Soft Skills Development

Developing my technical talents, my internship at Reachable allowed me to hone my soft skills. Soft skills are essential for success in any kind of professional setting because they enable individuals to communicate effectively, adapt to changing circumstances, and engage with others. One of the most crucial soft skills I developed throughout my internship was communication. It was necessary to communicate openly and effectively with my team, supervisors, and customers to develop the CPM [2], CTR [3], and CPC [1] calculators. I gained knowledge on how to convey my thoughts and updates, how to take criticism seriously and incorporate it into my work, and how to modify my strategy to appeal to a variety of audiences. I also realized how much active listening and empathy are necessary for productive working relationships and conflict resolution. Working in a team was another critical soft skill I developed throughout my internship. It took a lot of cooperation and harmony to work on the calculator development project with my colleagues. I gained knowledge on how to contribute to group discussions, support my peers in achieving common goals, and work effectively in a team environment. I also learned that collaboration, mutual respect, and trust are essential for creating a positive team environment. During my internship, I also developed my soft skills in problem-solving and flexibility. The challenges I had while developing the calculator pushed me to be a critical, creative, and flexible thinker who could also adjust to changing circumstances. I gained knowledge on how to remain composed under pressure, approach problems positively, and be flexible while coming up with solutions. These skills will help me succeed during my internship and will also be helpful in my future career. Eventually, I had the opportunity to improve my time and self-management skills during my internship at Reachable. Working remotely required me to balance additional responsibilities on top of my career, which required excellent time management and self-discipline. I had to learn how to make plans, prioritize tasks, and manage my time well to accomplish my objectives. I also learned how important it is to set boundaries between work and personal life and to maintain a healthy work-life balance. All things considered, my internship at Reachable provided me with excellent opportunities to develop and hone my soft skills, which are essential for success in any industry. These skills will help me succeed during my internship and will also be helpful in my future career. I had the opportunity to grow both personally and professionally during my internship at Reachable. I developed a strong professional network, gained significant expertise in the AdTech industry, and enhanced and refined both my technical and soft skills. Taking on tasks and overcoming obstacles allows me to use my skills in a real-world setting and support the growth of the company. I am grateful for the opportunity to have been a part of Reachable and can't wait to use the knowledge and skills I gained in my future position.

Chapter 6

Conclusion

6.1 Summary of the Internship

Apart from opportunities for both personal and professional growth, my internship at Reachable was a highly rewarding and instructive one that provided me with a perceptive understanding of the AdTech industry. Over the internship, working on three main tools—the CPM [2]calculator, the CTR [3]calculator, and the CPC [1]calculator—advertisers cannot evaluate the performance of their campaigns or optimize their advertising strategies without these tools. Over the internship, I worked in many stages of the software development process—system analysis, design, coding, testing, and deployment among other spheres. Among the many technical challenges I encountered, I created easy-to-use interfaces and ensured compatibility with present systems, and the best calculator performance. These interactions enabled me to develop project management, technical, and problem-solving skills. Apart from the technical aspects of the internship, technological tools helped me to improve my time and responsibility management, good communication, and team-building ability. The internship offered me an opportunity to deepen relationships with my colleagues, expand my professional network, and develop soft skills like flexibility, communication, and teamwork among others. All things considered, my internship at Reachable was a fantastic and transformational experience preparing me for my future job phase. Apart from the contributions I provided to the company, I am happy with the guidance and aid my supervisor and coworkers offered me.

6.2 Future Directions

I'm excited to go on and use the knowledge and skills I gained from my internship at Reachable to new opportunities and challenges. I'm particularly drawn to working in the AdTech industry because it lets me use my expertise in developing tools and technologies that help marketers get the most out of their campaigns. Moving ahead, I want to take on more responsibilities in software development, project management, and team leadership. I'm eager to continue growing professionally, whether it takes the form of further coursework, credentials, or real-world experience. My internship at Reachable has provided me with a strong foundation, and I am certain that the knowledge and skills I have gained will be very useful in my future position. Finally, I pledge to maintain contact with the professional network I

established during my internship and to search for new opportunities for growth and collaboration. I believe that the connections I have built will be invaluable tools for me as I progress in my career, therefore I'm eager to maintain and build new ones moving forward. In the end, my internship at Reachable represents a sea change in my career path and will enable me to use the skills and information I have gained to new heights.

Bibliography

- [1] CPC Calculator; Reachable — [reachableads.com](https://reachableads.com/cpm-calculator/). <https://reachableads.com/cpm-calculator/>, 2024. [Accessed: 22-10-2024].
- [2] CPM Calculator; Reachable — [reachableads.com](https://reachableads.com/cpm-calculator-2/). <https://reachableads.com/cpm-calculator-2/>, 2024. [Accessed: 22-10-2024].
- [3] CTR Calculator; Reachable — [reachableads.com](https://reachableads.com/ctr-calculator-2/). <https://reachableads.com/ctr-calculator-2/>, 2024. [Accessed: 22-10-2024].
- [4] bdnews24.com. 'Papercable' ushers in a new era of digital PR in Bangladesh — [bdnews24.com](https://bdnews24.com/technology/9230srwfv9?fbclid=IwY2xjawGETKlleHRuA2FlbQlXMQABHQpYuHEjcY0dTGazryFT2-wQLkgCjiCtm0hk_9lfECtvrqPvE89QddUEjg_aem_d41NAsMc-nMd_aMYD3Qxtg). https://bdnews24.com/technology/9230srwfv9?fbclid=IwY2xjawGETKlleHRuA2FlbQlXMQABHQpYuHEjcY0dTGazryFT2-wQLkgCjiCtm0hk_9lfECtvrqPvE89QddUEjg_aem_d41NAsMc-nMd_aMYD3Qxtg, 2024. [Accessed: 22-10-2024].