

**theCourseForum Blog: Improving Student Outreach and Increasing Course Guidance with
a Publication**

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Technical Project Team Members

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On my honor as a University Student, I have neither given nor received unauthorized aid on this
assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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ABSTRACT

Needing to improve its student outreach, theCourseForum, the leading course review website used at the University of Virginia (UVA), had its marketing team available to write course advice articles for students. I decided to lead a team in developing a blog that would be added to the website. Using review data, our team contributed articles providing students with quantitative advice. This also would generate traffic to theCourseForum and provide ad revenue to fund the site. I used the Django framework to write, store and publish articles, then made an HTML frontend for displaying them following a mockup by our design team. I used agile development to delegate tasks and expedite development. The blog is now ready to launch this year, giving our marketing team a more valuable role in theCourseForum team and delivering useful advice to students already familiar with the website. It will also draw in more users interested in the articles. After launch, we will start publishing posts and adding engagement features like comments, likes, and recommended articles.

1 INTRODUCTION

From waterparks to Halloween costume stores, many businesses are only in demand at specific times of the year, and struggle to stay in business across the calendar. Similarly, theCourseForum, as a course

review site, is only in high demand when students are selecting their courses. In fact, according to Google Analytics data, user activity is up to seven times greater during course registration months than in non-peak months [1]. Thus, theCourseForum has a traffic void. However, the more students use the site, the greater the network effect: users will write reviews, which increases the value of the theCourseForum and draws even more users. This creates a powerful positive feedback loop.

The site could draw users in, particularly during the “off-season,” by meeting other student needs. With all the reviews, theCourseForum has a vast store of data that is largely unused. The site could leverage this data to bring new value to users by providing macro-level course insights. Another concern is that users see theCourseForum as a “faceless corporation”—in other words, they are not aware that it is a student-run site. Adding a new medium of communication helps theCourseForum project have a more personal feel.

2 RELATED WORKS

Although theCourseForum is a Contracted Independent Organization (CIO), and not a corporation, this project is best defined as a corporate blog. This is because it serves similar purposes: increasing transparency, personability, and, of course, providing users with information related to the company’s

field. Related work examines the motivations of a corporate blog as well as the implementation of agile frameworks that will be used to develop it.

Corporate blogs have emerged as corporations seek new methods to communicate their brand. Ahuja and Medury (2010) point out that there are various types of content that blogs use to build relationships with their customers [2]. These types include organizational, about growth, new projects, and employee experiences; relational, soliciting feedback and addressing controversies; and promotional, including factual data about products and promotional campaigns. The study found that relational posts tend to lead to higher user engagement by forming emotional connections with consumers. Moreover, having a larger blog presence leads to more engagement overall. This may inform what types of content we prioritize for the blog. It also affirms the value of having a blog to begin with. This project will help build a brand relationship between theCourseForum and students. When they feel more passionate about the site, they may contribute more to reviews. To develop this project, a robust development approach is required.

Agile is a development framework that allows for rapid iteration and flexible development. In order to optimize the efficiency of this project, I incorporated several of the framework's ideas. These are summarized in an exploratory study by Abrahamsson, et. al. (2017) [3]. One idea used in agile development is the scrum cycle that includes planning, backlog lists, and recurring "standup" meetings. Another concept is that of user stories, which orient development goals around actions the user should be able to take. These ideas drove the decisions I made as a team leader.

4 SYSTEM DESIGN

Our project involved selecting a robust architecture that would integrate the blog cleanly with the existing site, and meeting the requirements that would make it a fully-functioning blog. We developed the components to satisfy those requirements and experienced unique technical and organizational challenges along the way.

4.1 Review of System Architecture

We quickly decided that the blog would build off the existing theCourseForum website to keep everything in one place. By working off the existing codebase, the feature will automatically be deployed on theCourseForum's production site, hosted on Google App Engine, and the existing database will be used to store the post content. This meant that the blog's architecture is based on the main site. TheCourseForum uses the Django web framework, which uses the model-view-controller (MVC) pattern. Models abstract the underlying SQL database and allow us to declare how the blog posts are stored with Python code. Views, written with HTML and CSS, are the user interface (UI), which is what is shown on the screen. We use the Bootstrap UI framework which has prebuilt components we customize. To handle rendering typographical elements in posts, we used a package called django-markdownx that handles converting Markdown, a simple writeup language, into HTML that will be displayed on the pages. Finally, the controller layer has the logic that handles retrieving and processing data.

An important feature of the blog's design is the pipeline for nontechnical authors to post their writing. The marketing team will write their articles in Markdown on Google Docs, then use the Django-generated admin portal

to add articles and set their publish date. These articles will then automatically show up on the site. The team will need only minor training to learn this since they do not need to access code. This also eliminates the need for rebuilding and redeploying the site just to publish new content.

4.2 Requirements

The application needed to meet the following functional requirements:

- Use the existing aesthetic of the site.
- Be prominently displayed on site for easy discoverability.
- Have non-technical pipeline for the marketing team to add posts.
- Have secure admin interface for posting, editing, and deleting posts.
- Show all blog posts at once (“browse”) and show individual blog posts.
- Each blog post should have a title, subtitle, unique URL (“slug”), author, and thumbnail image.

It should also meet the following technical requirements:

- Use existing tech stack, database, and code base of site.
- Support Markdown rendering in style of site for all Markdown types.

4.3 Key Components

The project is almost complete with only minor UI tweaks needed before deploying it to production. The following components make up the blog.

The main page, shown in Figure 1, displays the featured posts and has all posts “below the fold” in a list, to quickly skim. The featured posts allow the user to see our best work. Each list item shows key information about the post including the title and author. Clicking on the items brings the user to that item’s post page.

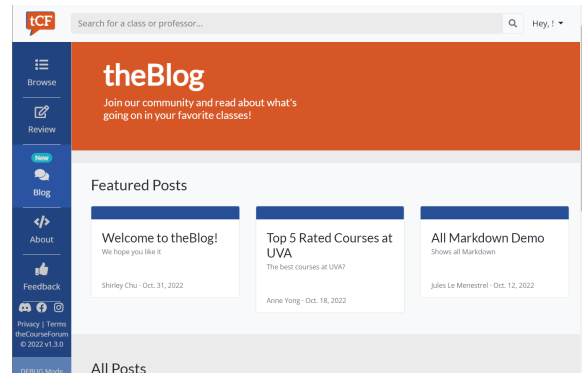


Figure 1: The “browse” page of the blog shows thumbnails of all posts and highlights three specific ones.

As shown in Figure 2, the post page displays the title and the body of the post and allows the user to read it. It fully renders the Markdown the author used including headings, bold, italic, links, block quotes, and so on, exemplified in Figure 3. Clicking on the “theBlog” title brings the user back to the main page.

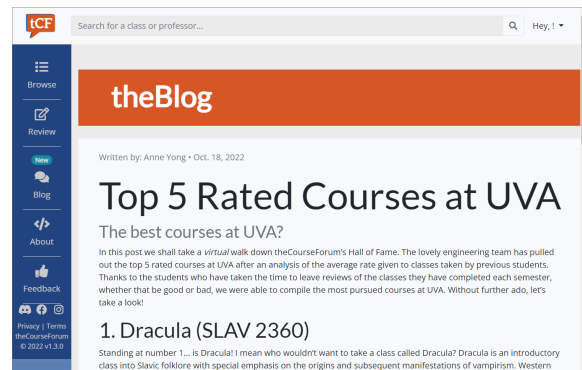


Figure 2: The post view shows the post using theCourseForum fonts, stylings, and colors.

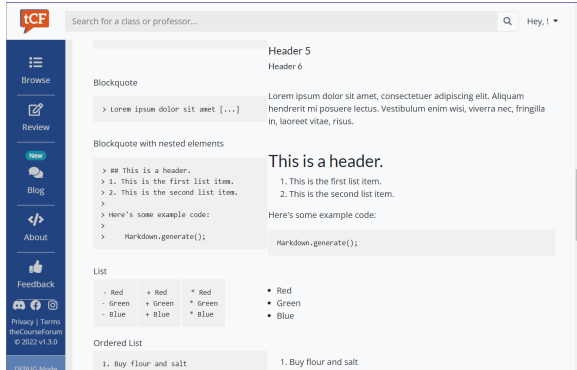


Figure 3: The Markdown package, django-markdownx, supports rendering all Markdown elements into HTML.

Finally, the administrator page, shown in Figure 4, allows authenticated users to submit posts. It includes fields for the date, time, title, and author. It has a text area field for the Markdown with a live preview so users can ensure the post will be rendered correctly.

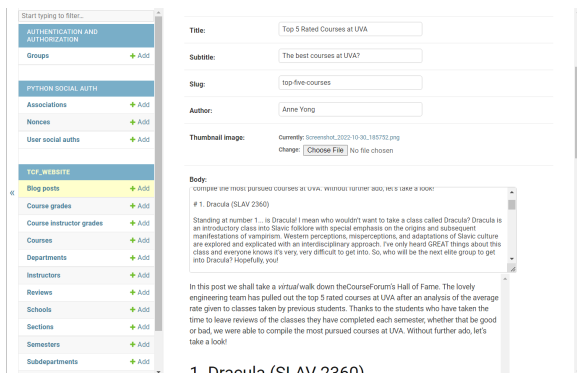


Figure 4: The admin page allows users to create, edit, and delete posts with a live preview of what they write.

4.4 Challenges

One challenge was learning to use Django since I was somewhat rusty on the framework and had to learn the MVC pattern to develop the blog. Another challenge was integrating into an already-existing large codebase: I had to negotiate extra configuration and setup to make sure the feature was compatible with the existing code. I also needed additional

CSS to customize the Bootstrap UI to ensure the look of the blog posts matched the rest of the site. A final challenge was getting work done in a timely manner. My limited work capacity was complemented by delegating work to other developers by creating specific goals and requirements. This approach proved very effective to speed up development.

5 RESULTS

The blog looks professional and clean and is well-integrated into the site. It is easy to use with the visual admin interface. It also has met almost all of the requirements with only a few bugs to fix before production. Two posts are ready to go, and with the robust system architecture, the blog site will likely need minimal maintenance once it is deployed.

6 CONCLUSION

One issue theCourseForum faces is that the marketing team lacks actionable approaches for promoting the site. Another challenge is that theCourseForum brand feels too corporate and detached from the university. Finally, the most important issue is student outreach, especially in the offseason, which is key to bringing the site's value to as many people as possible and generating reviews which give it that value.

This project addresses these problems in multiple ways. First, it uses the marketing team more effectively by giving them an additional way to communicate with students. Second, the blog increases theCourseForum's transparency and personability, thus improving our brand. Finally, it engages users by providing useful, quantitative course advice, which not only helps students but also encourages them to visit the site longer and more often. Bringing users to the site also catalyzes the network effect positive loop, because more users will

write more reviews, which generates even more users.

7 FUTURE WORK

The bulk of the blog is finished but it is not yet deployed to production. Once it is, there are more possibilities for future features. First, minor user interface tweaks and technical fixes are required, such as changing how text is laid out, and supporting images in the posts. When these are completed, the blog will be ready to put in front of users in production and the marketing team can continue writing articles. After the blog is deployed, one next step would be adding advertisement banners to earn additional revenue. We could also add engagement features such as “likes,” comments, sharing tools, and recommended articles to generate discussion and encourage users to keep reading.

8 ACKNOWLEDGMENTS

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