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# **Executive Summary**

As students, we all know from personal experience that there are always moments toward the end of any given semester in which we all inevitably whip out our calculators to perform a series of “doomsday” GPA number crunchings. Questions arise such as “What do I need to score on this final to pass the course?” or, hopefully, “What’s the absolute *worst* I can do and still retain my ‘A’?” Such questions are important in prioritizing one’s time and establishing goals, especially when coinciding project and exam deadlines roll in for those already juggling multiple courses and responsibilities from family to work! “But *where* are the answers to all these pressing issues?” you might ask. Why, the how, the what, the when, and the where are all within the Grade PlanAlyzer, of course – it just needs you!

The Grade PlanAlyzer application is our solution to students’ woes by creating a platform tailored to providing them a more robust, proactive, and quantitative approach to academic planning throughout each semester. By retaining all of one’s pertinent academic information, the student not only avoids having to manually transcribe large quantities of data on a case-by-case basis to calculate grading hypotheticals, but is also afforded the luxury of attaining more dynamic and impactful results via the application of data analytics. In other words, the student will remain keenly aware of one’s academic standing throughout the entirety of a given semester such that they may make informed decisions to guide their path forward, rather than defensively access such information to backpedal a semester gone awry. The Grade PlanAlyzer will enable students to optimize their time management skills and dedicate a more appropriate amount of time to each assigned task. This approach will enable them to ensure that they are allocating their efforts efficiently and effectively, ultimately resulting in better overall performance and academic outcomes.

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# **Competitive Analysis**

The analysis of competitors’ web sites will be quantitatively assessed based upon the following six primary features: User Experience, UI Design, Data Storage, Calculation Complexity, Customization, and What-If? functionalities. The criteria are scored on a 0 - 5 scale (0 = not present, 1 = awful, 2 = poor, 3 = fair, 4 = good, 5 = outstanding) and are applied to five software applications chosen for their thematic similarities involving grade calculations. The results of this assessment are displayed in Table 1, below.

Table 1 - Concept Scoring Matrix

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Grade PlanAlyzer | Canvas | Calculator.net | Fourpoint | Grades | The Grade Calculator |
| User Experience | 4 | 5 | 2 | 4 | 4 | 2 |
| UI Design | 5 | 3 | 2 | 4 | 3 | 2 |
| Data Storage | 4 | 5 | 0 | 4 | 4 | 0 |
| Calculation Complexity | 5 | 4 | 3 | 4 | 3 | 1 |
| Customization | 5 | 3 | 0 | 5 | 4 | 0 |
| What-If? | 5 | 3 | 2 | 0 | 0 | 0 |
| *Mean* | **4.67** | **3.67** | **1.50** | **3.50** | **2.83** | **0.83** |

**Canvas (3.67) -** [**https://www.instructure.com/canvas**](https://www.instructure.com/canvas)

At present, Canvas falls short in providing students with essential features to optimize their academic performance. Specifically, the platform lacks the capability to calculate grades per assignment, limiting students' ability to allocate their time efficiently and accurately gauge their progress. Additionally, Canvas does not provide students with the ability to determine the minimum score required to achieve an A in a specific assignment, depriving them of essential information needed to set realistic goals and make informed decisions. By contrast, an advanced grade calculator app can address these shortcomings, empowering students to take a more proactive approach to their studies, optimize their learning experience, and achieve their full potential.

**Fourpoint (3.50) -** [**https://apps.apple.com/us/app/fourpoint-a-gpa-calculator/id383417299**](https://apps.apple.com/us/app/fourpoint-a-gpa-calculator/id383417299)

Fourpoint is an efficient and user-friendly mobile application designed to make calculating your GPA easy and accurate. It is beneficial for students who attend schools that use the supported GPA calculation system and allows you to add semesters and courses as you progress through your academic career. Fourpoint has several useful features, including the ability to designate a course as Pass/Fail or not count toward your GPA, setting the weight of grades, and determining your major GPA. You can also designate courses as in progress and add past GPA history with Q-Points and Hours. Fourpoint enables you to calculate both a single semester GPA and a cumulative GPA for your entire educational career. However, it may not be useful for students who have unique academic circumstances or situations that require more complex GPA calculations.

**Grades (2.83) -** [**https://apps.apple.com/us/app/grades-view-your-scores/id1434492452**](https://apps.apple.com/us/app/grades-view-your-scores/id1434492452)

The Grades App is a helpful tool for students who are looking to track their academic progress. With features such as automatic GPA calculation, the app can provide users with a quick and easy way to get an overview of their semester grades. However, it seems that the app may have some limitations. For example, the user interface may lack personality and customization options, which could be a disadvantage for some users who are looking for a more personalized experience. Additionally, the app may not account for customizable grading scales, which could be an issue for users who have unique grading systems in their schools or courses. Finally, the app's analytics may be somewhat inaccurate, which could impact the reliability of the data presented.

**Calculator.net (1.50) -** [**https://apps.apple.com/us/app/grades-view-your-scores/id1434492452**](https://apps.apple.com/us/app/grades-view-your-scores/id1434492452)

The visual appeal of Calculator.net is lacking and requires an excessive amount of manual data input due to the website's lack of dynamism. This means that each assignment grade must be manually selected and typed in for calculation, resulting in a time-consuming and frustrating process that can lead to errors and decreased efficiency. This is particularly problematic for individuals who need to calculate grades frequently, as it can impede their workflow and productivity. Calculator.net isn’t user-based and requires complete manual entry for every grading query, also only represents a singular built-in grading scale so it is not customizable to the user.

**TheGradeCalculator (0.83) -** [**https://thegradecalculator.com/**](https://thegradecalculator.com/)

The Grade Calculator tool has some useful features, but there are also some significant drawbacks that should be considered. Firstly, the user interface is outdated and not very user-friendly, which could make it difficult for some users to navigate. Additionally, the tool is not consolidated into one location and requires users to visit multiple websites to access all of the features they need. This can be time-consuming and inconvenient for users. Another major disadvantage of the tool is the lack of a login feature, which means that there is no user and data relationship. This could be frustrating for users who want to save their progress and access it later, as they will have to input their data every time they revisit the website. Finally, the tool lacks infographic capabilities, which could be a significant disadvantage for users who want to present their data in a more engaging and visual format.

**Grade PlanAlyzer (4.67) -** [**https://q-wrld97.github.io/cen4010\_sp23\_g23/**](https://q-wrld97.github.io/cen4010_sp23_g23/)

***Planned Advantages:***

The What-If? tool offered by the Grade PlanAlyzer is particularly advantageous in that its calculations will always be derived from the latest empirical dataset at one’s disposal. Many competitors, on the other hand, simply attempt to provide a crude letter grade estimate based solely upon input of hypothetical score averages by weighted category. Moreover, such tools are further limited due to their complete lack of customization options to account for various calculation intricacies, such as a unique grading scale, extra credit, or even complex rules such as replacing the lowest deliverable score in a category with the average of the remainder. However, the Grade PlanAlyzer maintains the real-time authenticity of such What-If? estimates by automatically adjusting its calculations to display results under the context of remaining scoring opportunities after factoring in the weight of what events have already transpired.