
Modeling

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Introduction

With the "Enhancement of Performance Display on Blackboard," students will have access to an extensive and user-friendly online resource that offers insightful information about their academic progress. The goal of this project is to update the current performance display so that students may view their grades and comprehend the role that each assessment has in determining their final grade. It guarantees that students can take a more systematic approach to their coursework and test preparation. In addition to showing marks, the improved dashboard will include interactive visualizations that show the relative relevance of various assignment kinds, like bar graphs and pie charts. Students will be able to successfully prioritize their work with the aid of this degree of detail. Furthermore, the system will provide warnings and alerts about grading updates or approaching due dates, similar to how an intuitive software informs its customers. The dashboard will serve as more than simply a place to see grades; it will also serve as a reference, providing tooltips and help icons to help new users fully comprehend the grading system. It will demystify the grading process and help students create reasonable and well-informed academic goals by giving a clear and thorough explanation of how each work affects their ultimate grade. The project encourages academic performance and fosters a more proactive and positive learning environment by making grade reporting more accessible and clearer. It is a step in the direction of educational transparency, offering a one-stop shop for all information pertaining to academic performance and enabling students to be informed, organized, and in control of their education excel in their academic pursuits at UMBC.

Context Level Diagram

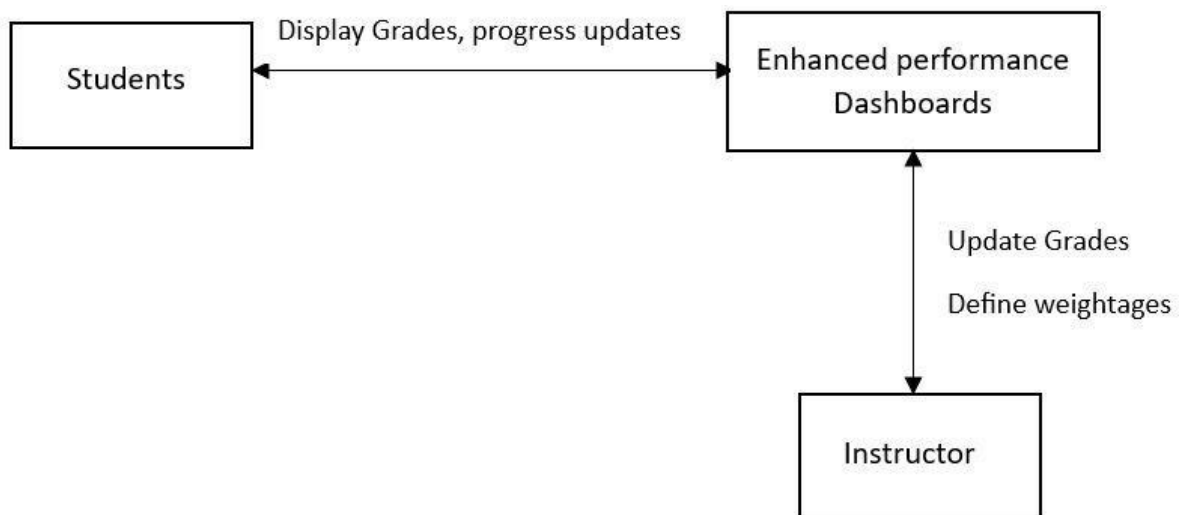


FIGURE 1- CONTEXT LEVEL DIAGRAM

The system is used by other entities, such as instructors and students. The main platform for processing and displaying data on academic performance is called the Enhanced Performance Dashboard.

Since they engage with the dashboard to determine their academic priorities and goals, "Students" is included as the primary entity, reflecting their role as the system's principal users. The other important player in the system is "instructors," who are the source of grade and evaluation data. They supply the crucial data that is processed and represented in the dashboard, making them important to the correctness and applicability of the system. The information flowing from instructors to students and the student feedback that guides future educational decisions are both symbiotic entities, as the diagram illustrates.

Data Flow Diagram 0

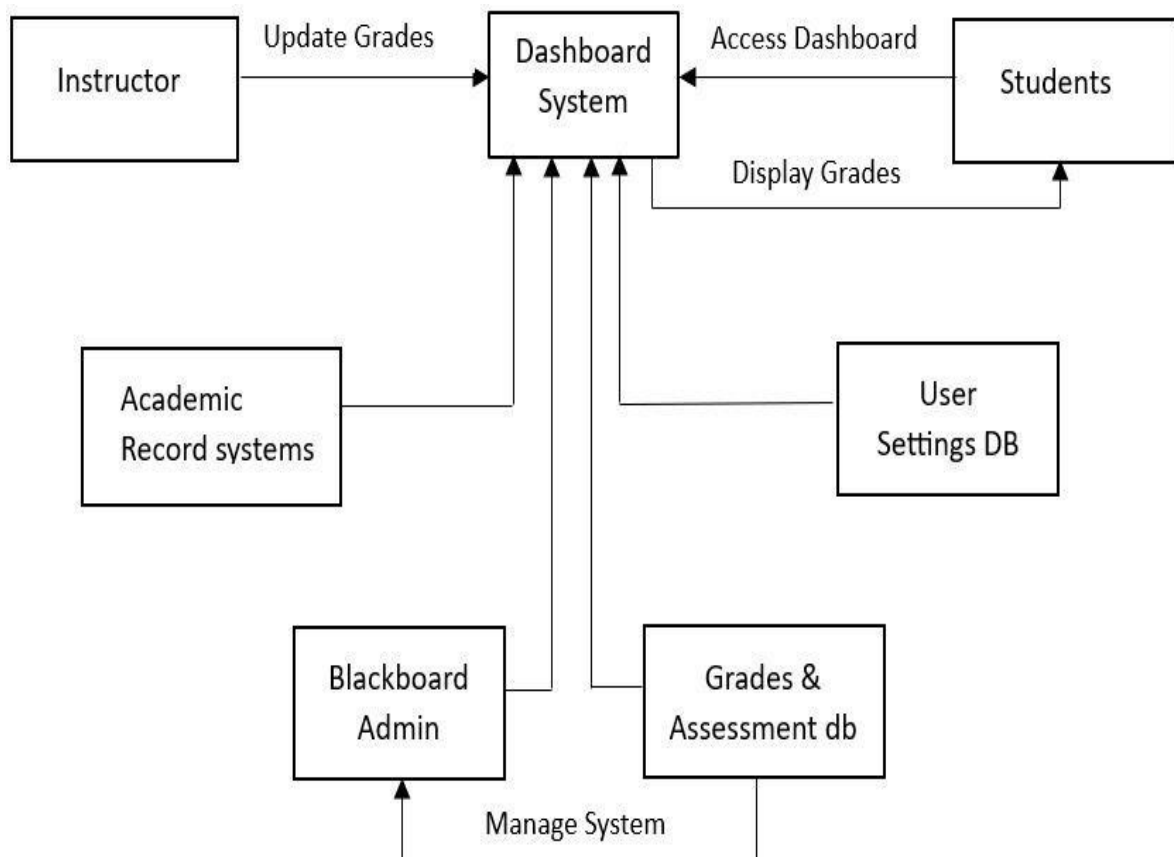


FIGURE 2 - DATA FLOW DIAGRAM 0

All exchanges take place at the "Enhanced Performance Dashboard System" core procedure.

"Students" and "Instructors" are the main external parties that communicate with the system.

Depending on the particular data flows in your project, "Blackboard Administration" and "Academic Records System" may interact with the system. They give the system the academic data it needs and the system administration tools it needs.

Academic data and user preferences are stored in the "Grades and Assessment Database" and "User Settings Database" data stores.

Data Flow Diagram 1

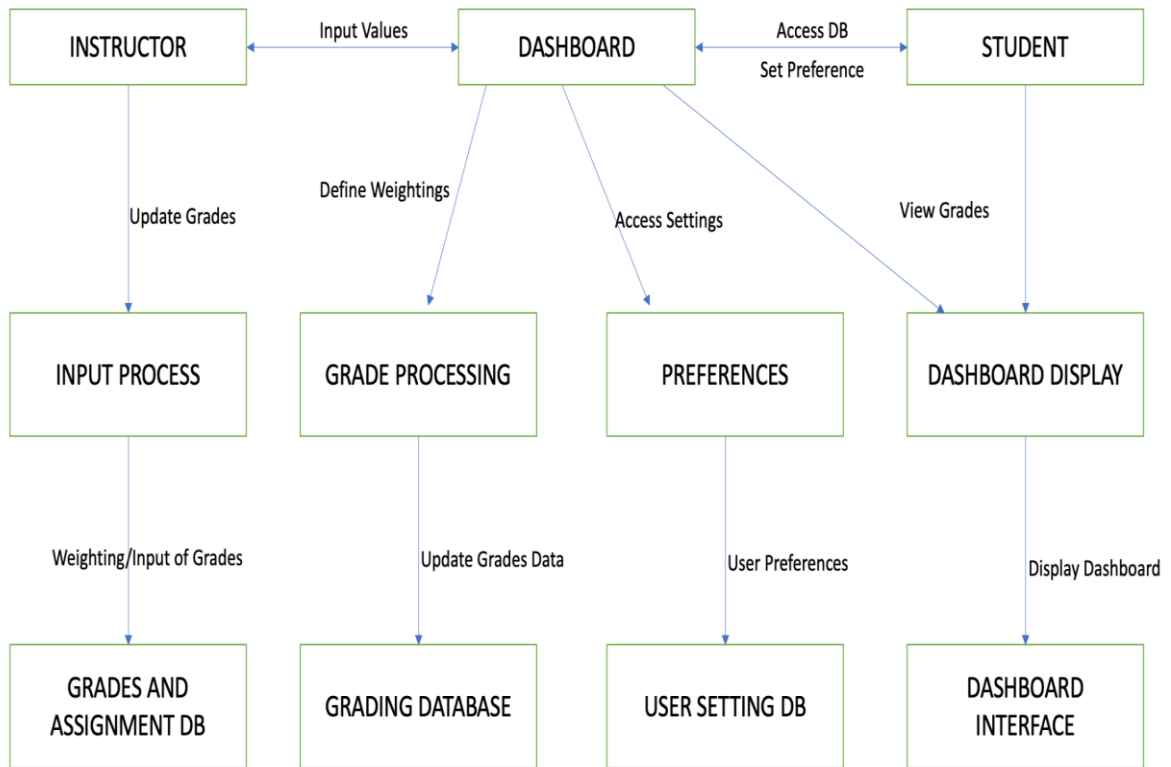


FIGURE 3 - DATA FLOW DIAGRAM 1

- Three sub processes comprise the "Enhanced Performance Dashboard System" from the Level 0 DFD: "Grades Processing," "Preferences," and "Dashboard Display."
- "Students" and "Instructors" continue to be the main external entities that connect to pertinent subprocesses and interact with the system. Certain tasks, like entering grades, processing grades, handling user preferences, and presenting the dashboard interface, are handled by subprocesses.
- The information that moves through the system, including grade data, user preferences, and displayed grades, is represented by data flows between subprocesses.

Entity Relationship Diagram

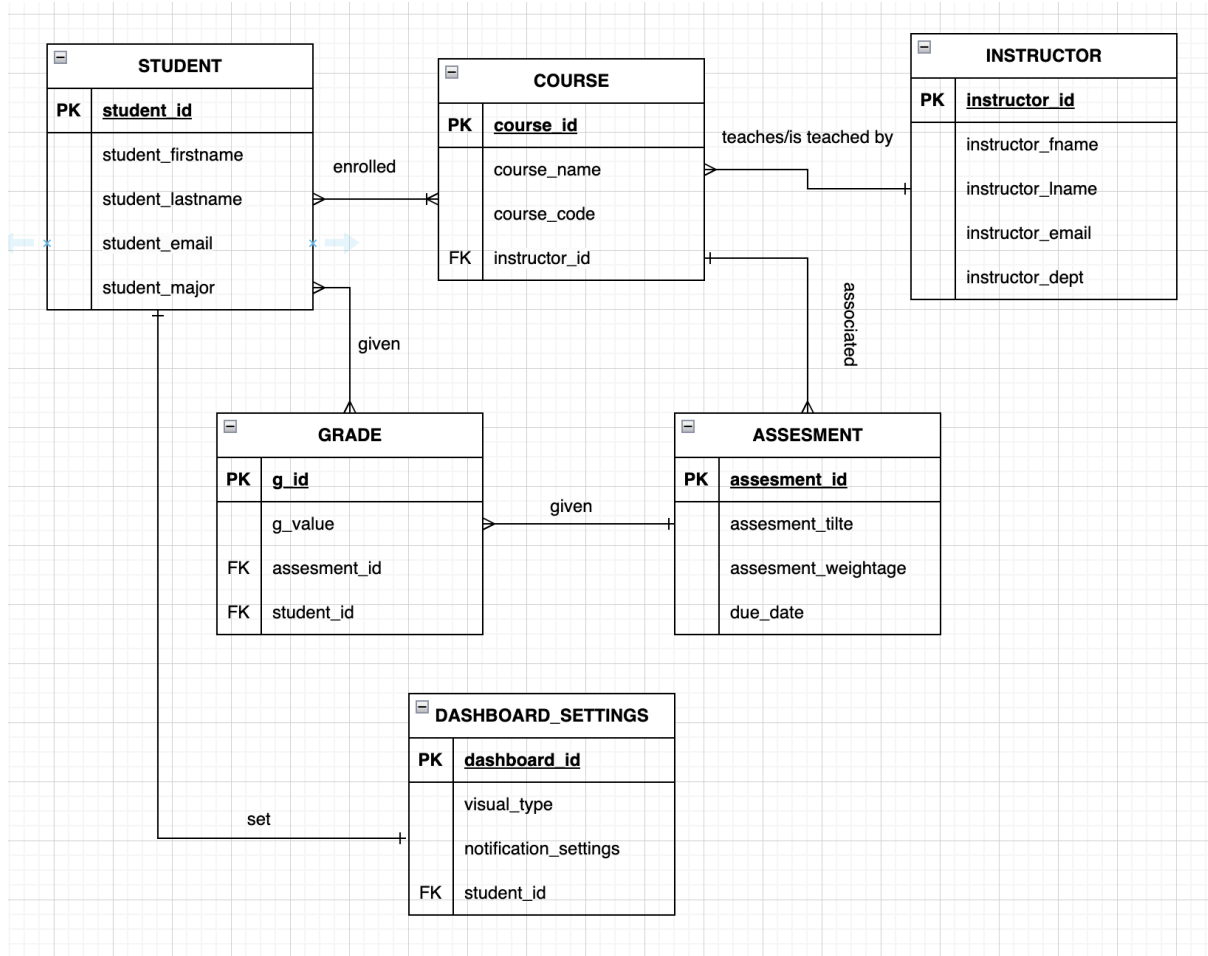


FIGURE 4 ENTITY RELATIONSHIP DIAGRAM

An entity-relationship diagram, or ERD for short, is a graphic representation that illustrates the relationships between entities in a database by highlighting their shared attributes and associations.

The following list of tables and their relationships, along with the associated attributes for each entity.

A. Student table

The users enrolled in courses and receiving grades are represented by this entity. Each student would have specific information such as an ID, name, email address, and perhaps a link to their dashboard user settings.

B. Course table

The course entity might include all the classes available at UMBC. It would have a unique ID, course name, description, and could be connected to specific instructors and students.

C. Instructor table

The task of creating assessments and entering grades falls to the instructors. A name, an ID, and the courses they are teaching are examples of attributes.

D. Grade table

Depicts the actual grades or scores that students have received. It would have something to do with the entities of Assessment and Student.

E. Assessment table

This could stand in for various forms of exams, quizzes, and graded assignments. A description, ID, weight toward the final grade, and due date are examples of attributes.

F. Dashboard setting table

Each student's preferences for how they want to see their dashboard, including their preferred visualization types and notification settings, would be stored in this entity.

Assumptions:

- Every student is enrolled in one or more courses.
- Each course has one or more assessments.
- Instructors can teach multiple courses.
- Grades are given for each assessment a student completes.
- Students can customize their dashboard settings.

Conclusion

In summary, the foundation for effective data management and streamlined user interactions is laid by the integration of Data Flow Diagrams (DFDs) and Entity-Relationship Diagrams (ERDs). Our comprehension of the system's operations is improved by the DFDs, which offer a clear visual representation of the interactions and data flow inside the system. As this is going on, the ERDs carefully record the connections and characteristics of important database tables, guaranteeing the accuracy and integrity of the data. With a user-friendly dashboard that offers more than just grade displays, this integration gives users more power. It gives students information about the significance of each academic task, enabling them to make decisions based on data. Students can develop goal-setting skills by understanding how each score type affects their final grade through interactive visualizations. In addition, the system mitigates information overload by providing user customization through settings options. Additionally, it gives accessibility top priority, making sure that all students—including those with special needs—can utilize the system to its full potential. To summarize, the project "Enhancement of Performance Display on Blackboard" employs a combination of DFDs and

ERDs to streamline the performance display procedure, encourage improved academic decision-making, and ultimately enhance student performance and satisfaction.