The **OnlineEducationPlatform** contains 4 collections: Courses , Instructors, Students, Payments.

The *business purpose* of these collections is to organize the educational platform and improve the student experience. They help manage student profiles, track progress and simplify courses and instructor management. These collections also ensure accurate financial and revenue tracking.





**Courses:**

The Courses collection helps manage the educational platform by listing courses , instructor identification and the price for each course. The roles of Courses collection are:   
*Cataloging Courses*: Provides a structured way to store course details, making it easy for students to find and select courses.   
*Tracking Pricing and Enrollment*: Keeps track of course pricing and how many students are enrolled, helping in revenue planning and forecasting.

***Instructor Linking***: Connects courses to their respective instructors , using instructorID, for better organization and communication.

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| **Data** | **Data Type** | **Business Purpose** |
| \_id | ObjectId | A unique identifier automatically generated by MongoDB for each document. |
| courseID | Integer | A unique integer identifier for each course. |
| title | String | The title of the course. |
| category | String | The category under which the course is listed (e.g., Programming, Data Science). It provides a structured way to store course details, making it easy for students to find and select courses. |
| price | Decimal (or Integer) | The cost of enrolling in the course in USD. |
| instructorID | Integer | ID of the instructor teaching the course, linking to the **Instructors** collection. |
| enrollmentCount | Integer | Number of students currently enrolled in the course. |



**Instructors:**

The Instructors collection is essential for managing all details related to instructors. The roles of Instructors collection are :

*Managing Instructor Profiles*: Holds detailed information about each instructor, including their areas of expertise and the courses they teach.

*Tracking Instructor Ratings*: Includes ratings and feedback, utilizing the rating field to help evaluate and enhance teaching quality.

***Linking to Courses:*** Connects instructors to the courses they are associated with, making course management easier.

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| **Data** | **Data Type** | **Business Purpose** |
| \_id | ObjectId | A unique identifier automatically generated by MongoDB for each document. |
| instructorID | Integer | A unique integer identifier for each instructor. |
| name | String | Full name of the instructor, displayed to students. |
| expertise | String | Areas of specialization or subjects the instructor teaches. |
| courses | Array of Integers | List of course IDs taught by the instructor, linking to the **Courses** collection. |
| rating | Float | Average rating given by students, used to evaluate teaching quality. |



**Students:**

The Students collection is important for managing student profiles, tracking their enrollment in courses, and monitoring their progress.

*Manage Student Information:* Keeps track of student details, making it easy to manage their profiles. It stores student's email IDs, allowing the platform for communications and important notifications.

*Track Course Enrollment:* Records the courses each student is enrolled in and their progress.

*Monitor Student Progress*: Tracks progress data to identify students who may need extra support, as well as recognize those who are excelling in their studies.

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| **Data** | **Data Type** | **Business Purpose** |
| \_id | ObjectId | A unique identifier automatically generated by MongoDB for each document. |
| studentID | Integer | A unique integer identifier for each student. |
| name | String | Full name of the student, used for identification. |
| email | String | Student's email ID for communication and notifications. |
| enrolledCourses | Array of Objects | List of courses the student is enrolled in, including their courseID and progress, linking to the **Courses** collection. |



**Payments**:

The Payments collection is essential for financial management. The roles of payments collection are :

*Tracking Transactions*: Keeps a record of payments made by students, which helps in financial planning and revenue tracking.

*Managing Course Fees*: Connects payments to specific courses, ensuring that fees are collected accurately and that courses are properly funded.

*Monitoring Payment Status*: Helps the platform manage payment statuses, using status field, and follow up on any pending transactions.

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| **Data** | **Data Type** | **Business Purpose** |
| \_id | ObjectId | A unique identifier automatically generated by MongoDB for each document. |
| paymentID | Integer | A unique integer identifier for each payment transaction. |
| studentID | Integer | ID of the student making the payment, linking to the **Students** collection. |
| courseID | Integer | ID of the course for which the payment was made, linking to the **Courses** collection. |
| amount | Integer | Total amount paid for the course in USD. |
| status | String | Current status of the payment (e.g., Completed, Pending). |