**SYSTEM ARCHITECTURE FOR A SCHOOL MANAGEMENT SYSTEM.**

Users

1. Students
2. Teachers
3. Parents

Functional Requirements:

*Student*

1. Should be able to login.
2. Should be able to download assignments.
3. Should be able to upload assignments
4. Should be able to take online exam on the platform for a specifies timeframe eg. 1 hour
5. Should be able to view and print results.
6. Should be able to view available course

*Teacher*

1. Should be able to login.
2. Should be able to post assignments.
3. Should be able the access student’s performance, grade uploaded assignments and exams.
4. Should be able to upload course materials and lectures.

*Parent*

1. Should be able to login.
2. Should be able to view the performance of his/her ward.

The system has more than one main functionalities, therefore using a Monolithic architecture is not advised. For easy scalability, the Microservice architecture is best.  
Microservice architecture breaks down the system into independent sections (services) that can still communicate with each other. Why microservice architecture?

* Loosely coupled
* Independently deployable
* Highly maintainable, testable and scalable.

These functionalities can be taken as the services, can be worked on independently and deployed separately. Clearly, this architecture has no single point of failure.  
Decentralized data storage is best for microservice architecture hence each of the 3 services here will have separate databases. There can be additional databases to serve as redundant databases.

Client

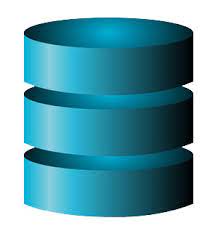
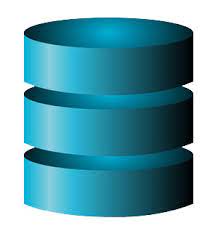
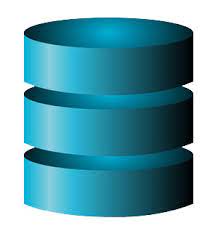
Request

API  
Gateway

Student  
Service

Teacher  
Service

Parent   
Service



DB

DB

DB