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WEEK 13 REFLECTION

New technologies in the database realm, on the one hand, may provide the increase in the work efficiency and effectiveness of the serverless SQL databases and AI-integrated database management tools that got my attention. The databases can become more reliable, smarter, and be more productive in our project only if the above trends are present.

AWS Aurora Serverless and PlanetScale are serverless SQL databases (for example). In the words of the author, the former helps you get rid of the infrastructure management headache since the automation that serverless systems bring about allows for the scaling up or down as the inputs of supply and demand dictate. Very useful indeed, especially if our system becomes more crowded with users and data. With the automatic backups and built-in failovers of serverless platforms, there are less data loss and more recovery simplification. On the downside, various serverless systems may have a slow start after inactivity, and their limited customization options may be affected by the performance of more complex queries or systems that demand specific tuning.

On the other hand, AI-based database management tools exploit machine learning to accomplish tasks such as index, query optimization and even anomaly detection rather than relying on human input. The AI functionalities are driven by the cloud subsystem of the service (e.g. Google Cloud's AI), and they can detect how the execution of the queries is and suggest ways to make the execution better, which results in maintaining efficiency as the data grows.

Furthermore, the human problem becomes manageable through resourceful initiatives such as making leeway for cloud in project realisation, cutting the complications that come with it, and providing the much-needed agility to the project. Conversely, efficiency increasing human features can be the ones that send the bill, and the tailor-made configurations may also require financial ability or a special environment of use such as free-tier of which the latter may not be a guarantee.

As a wrap-up, serverless and AI-generated technologies have the potential to lead us towards a more efficient and effective system in the areas of scalability, performance, and maintenance.

Nevertheless, one needs to be conscious of the constraints in customization and accessibility at the undergraduate level while using free platforms for their projects. These technologies repeat the lesson that database management is turning into an automatic and smart process and learning such skills should be part of our future IT careers.