



Your One Stop Tuition
Bookings Provider

Countries: (SEA region)

- **Singapore**
- Malaysia
- Indonesia
- Philippines

Modes - Tuition Conducted:

- Face-to-face Tuition
- Online Tuition (Zoom)

Academic Levels: (or their equivalent)

- Preschool
- Primary School
- Secondary School
- Junior College
- Polytechnic
- IP
- ITE
- University

Major Examinations: (or their equivalent)

- PSLE
- O Levels
- N Levels
- A Levels
- IB
- IGCSE

Customizable

- Language Courses & Music Classes
- Coding/Programming



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<Assumptions>

- **Infrastructure** – Expanding Physical Servers would be costly and high demanding usage/data would deter vertical scalability
- **IT Teams** – assignment of roles were unclear, direction & progress of the IT department slow
- **IT setup** – Only able to cater to at most 300,000 users in a single moment
- **Database** – using only SQL databases. Linking form inputs with SQL database using PHP scripts
- **Work from abroad** – so must be able to link all employees online (virtual working environment)



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<Issue #1 – scalability of the database>

- Database – using only SQL databases & current resources
 - **Higher Scaling Cost** - Limited horizontal scalability (require more physical resources for servers or require more complicated sharding solution)
 - **Lower Availability** - High complexity for failover (if the server crash and file transfer is not completed) between nodes
 - **Slower Development** - Constraints on the database schemas & data modelling

< Issue #2 – Poor Mobile App Services >



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- there were bugs that were not properly addressed
 - Rare occurrences of users disconnecting from the mobile app interface (the app crashed) when few users tried to access the tutor's information & subsequently when they try to open the app it prompted for their login details again
 - Some users have submitted forms to update personal details and credentials, which could not be updated to their preference. The data could not include personalised tagging(s) – users can customise their pages
 - There were instances of duplicate information for the same tutor's portfolio (they had multiple profile which users could view – outdated versions, versions that were incomplete were displayed)
 - Filter options to source for tutors were not extensive and customer-oriented
 - Recommendations made to customer were not entirely based on tiers (levels) & Regions (locations)
 - The location was not updated properly, so users were recommended tutors who were located/situated far away – (face-to-face tuition)
 - Slow response time to customer's queries via emails. Customers were not sure if the organisation are reviewing their feedbacks and complaints

<Recommendations – DevOps CI/CD>



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**Source
Control**



**Continuous
Integration**



**Configuration
Management**



**Deployment
Automation**



Containers



Orchestration



**Cloud
Platforms**



Database



RPAs



Data Analysis



1. Caching
2. Queuing
3. Throttling – congestion management – bounce and balance the load



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< Recommendations – building teams & getting started >

Commission & Deploy

1. **DevOps Team:** CI/CD pipelines
 2. **DevSecOps & Cyber Security Team:** Security CI/CD pipelines & personal data security
 3. **Database Team:** Managing the database
 4. **Front-End Developer Team:** Manage the front end of the mobile/web application
 5. **Infrastructure & Server Team (Network):** Setting up servers & ensure that resources are available
 6. **Data Analysis & UI/UX Team:** Study web clicks (user interaction), algorithms
 7. **Procurement Team:** Negotiates and make purchases
 8. **Customer Service Team:** Who communicates and provide information to customers/users, and also design adverts to promote products
 9. **Review & Compliance Team:** Verify tutor's credentials & review portfolios to identify red flags/dummy accounts/users that are inactive for more than 1 year
- Partnership/Hire Trainers to pass the skills over to the employees – deploy the CI/CD pipelines tgt with the partnering companies & guide them through some of the processes. After handover, communications are still available.
 - Update the companies on latest technologies/applications/methodologies/concepts/trends which could make their services more attractive to customers (user-friendly – UI & UX & convenience)