Your One Stop Tuition Bookings Provider

Academic Levels: (or their equivalent)
- Preschool
- Primary School
- Secondary School
- Junior College
- Polytechnic
- IP
- ITE
- University

Modes - Tuition Conducted:
- Face-to-face Tuition
- Online Tuition (Zoom)

Countries: (SEA region)
- *Singapore*
- Malaysia
- Indonesia
- Philippines

Major Examinations: (or their equivalent)
- PSLE
- O Levels
- N Levels
- A Levels
- IB
- IGCSE

Customizable
- Language Courses & Music Classes
- Coding/Programming

<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)

BCM
Pte Ltd

Your One Stop Tuition Bookings Provider

<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

Your One Stop Tuition Bookings Provider

< Issue #2 – Poor Mobile App Services >

Your One Stop Tuition
Bookings Provider

- 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instances of duplicate information for the same tutor's portfolio (they had multiple profile which users could view – outdated versions, versions that were incomplete were displayed)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>

BCM Pte Ltd

Your One Stop Tuition Bookings Provider

Source Control

Continuous Integration

Configuration Management

Deployment Automation

Containers

Orchestration

Cloud Platforms

Azure

Database

RPAs

Ui Path

Data Analysis

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

< 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)

BCM
Pte Ltd

Your One Stop Tuition Bookings Provider