# Proposal to regional camp syllabus

- **Fundamentals of database systems.**
  - Need for databases.
  - Transactions and ACID properties.
  - SQL databases and relational normalized data modelling with fun example (A dating app to make it fun).
  - NoSQL database and simple modelling on top of it (same application now modelled on MongoDb).
  - How to make choice of a database, the war of In-memory, Graph,Columnar, SQL and other document stores.

Enabled with fundamentals of databases and a pinch of solving a problem using SQL and also NO-SQL database they'll be enabled to pick up any database in the future which could fit their objective and need when solving a real world problem.

- **Fundamentals of operating systems.**
  - Need for understanding the fundamentals of operating systems (they have to be convinced here first).
  - Basic Linux systems calls in C.
  - Playing around with Fork and exec.
  - What is a kernel ?
  - Some more OS concepts with fun programs if necessary.

When enabled with strong fundamentals of operating systems it becomes easier to be a better application programmer any point in time.

- **Algorithms and data structures.**
  - Understand the need for writing code with better time complexities.
  - Time complexities.
  - Fibonacci series with exponential and logarithmic time complexities, show them the difference when working on big data sets.
  - Importance of various data structures.

- **Building cool applications with Shell Scripts.**

- **Career benefits with free software development.**

- **Building fun and reactive web applications with NodeJS and ReactJS.**