## Training plan

## Javascript

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| Theme | Description | Task | Control | Deadline |
| Objects in JS | Need to learn how objects works in JS. Reference types in JS.  After learning. Vlad understand object behavior in language. Know how to copy an object and understand difference of the refence types with other types. Can create and copy objects to create a real copy. | Reading https://javascript.info/ topics 4.1, 4.2, 4.3. And done tasks after each topic | Meeting with results. | 06.09.2022 |
| Classes in JS | Learn classes in JS. Understanding of the basic principles of OOP (optional). Understanding basic entities of the classes (class, access methods, static, constuctors, extending). Can create classes, with all object entities and work with classes. | Reading <https://javascript.info/>  Topics from chapter 9.  Make singleton. Functional + classes | Meeting with results. | 09.09.2022 |
| This in JS | Learn this and context in JS. Understanding of context of execution, understanding how this works in the execution context. Could find out why “this” is undefined. Learn how to work with bind, call, apply functions in JS and what they done. | Reading https://javascript.info/ Topics from part 4.4, 6.9, 6.10, 6.11 and done tasks from each topic. | Meeting with results. | 13.09.2022 |

## Typescript

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| Theme | Description | Task | Control | Deadline |
| Typescript | Learn how to use TypeScript. Learn about interfaces, types, enums, generic types, how typing work with properties (utility types). Write code using TypeScript. Use typescript to define interfaces. Use typescript to describe functions, methods, another interfaces and create complicated interface structures. | Complete all of the tasks from <https://github.com/total-typescript/beginners-typescript-tutorial> | Created github repository with tasks and send them on ready.  Discussion of the tasks on deadline meeting. | 20.09.2022 |

Last week - refresh memory (deadline – September 23):

1. React lifecycle
2. React hooks
3. HTTP – protocol (headers)
4. REST – methods, naming

## Databases

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| Theme | Description | Task | Control | Deadline |
| DB entities (relations, keys, relationships, indexes) | Need to learn basic DB entities, relations, keys, relationships, indexes. Understand and know how to detect the relation between databases. Know and done decomposition of the table with relation. Know keys types and they usage. Can create DB with multiple tables with different relation types | Read topic number 2 from Epam training. Complete all the tasks from subtopic. Finish final task from topic. | Meeting with results. | 04.10.2022 |
| Normalization | Need to learn, normazlition process in DB. Understand and use at least 3 normal forms. Know how to normalize table and could do a table normalization. Know how to do Denormalization and why. | Read topic number 3 from Epam training. Complete all the tasks from subtopic. Finish final task from topic. | Meeting with results. | 11.10.2022 |
| Addition DB object and processes | Learn about addition DB objects and processes. Know how to create an views/checks/triggers etc. Know meaning and situations when to use them. | Read topic number 5 from Epam training. Complete all the tasks from subtopic. Finish final task from topic. | Meeting with results. | 18.10.2022 |

Addition chapters 4 and 6 should be learned at some point of time. Read 6 later, read 4 if really interested.

## Backend

Notes: We skip couple of the parts in the course. If you wan’t to refresh the memory you could proceed with Asynchronous JS part. Also. Handling error could been skipped.

TBD: Update an Tests and deployment part later

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| Theme | Description | Task | Control | Deadline |
| Node Module System & Node Package Manager | Learn the basic modules of the node js. Check the work of the basic entity, and know how to use them. Had understanding about package managers. Package json structure, and overall work with the package json. (Path Module, File System Module, HTTP Module) | Proceed the course <https://coherentsolutions.udemy.com/course/nodejs-master-class/> with Node Module System and Node Package Manager | Meetings and discussion of the topic | 08.11.2022 |
| RESTfull API & Express Advance topics | Learn how to restfull HTTP module of the express work. Know how to run you local server. Understandings of the handling HTTP requests by the server. Know about another expressjs tools – Middlewares, Authentication. Know how to create custom Middleware. (You could skip templating engine). Also look for structure express application | Read the Build RESTful API’s using express and Express- Advanced Topics | Meeting and discussion of the topic | 15.11.2022 |
| MongoDB and work with the DB | Learn of the mongodb implementation and usage in expressjs. Know and understand local configuration of the mongodb. Understand mongoos ORM and models (how to work with the models). Know how to do basic DB queryis operations (paginating, countring). Mongoose data validation description, Know how to define relation between models and understand this relations. Mongoose transactions. | Read all mongo DB topics (3). CRUD Operations Using MongoDB. Mongoose – Data Validation. Mongoose- Modeling Relationships Between Connected Data. | Meeting and discussion of the topic | 25.11.2022 |
| Authentication and Authorization | Learn about authentication and authorization. Know difference between this two process. Hashing functions and understanding their ussage. Understand difference between Hashing and Encoding. Understanding structure of the JWT (JWT creation flow \*). Understanding how to store sensitive data and application keys. Authorization middleware and it’s implementation. | Read Authentication and Authorization topic of the course. | Meeting with results. | 02.12.2022 |