**Team members:** ALTIN CIPI (M1309), VASILIS SKOURTIS (M13 ), EYAGGELOS KARAGEORGOS (M13 )

**Project title:** E-voting android mobile application + system backend

**Project description:** I will develop an android application that will be used for e-voting. Users can login or register to the application. Then they can browse all the voting subjects that are available at the time and cast their votes on the ones they want. After they cast a vote on a subject they cannot vote again for it. Users can also view the current results of each voting. At the end of a voting they participated in they will get a notification of the voting results. Users will have points that will increase each time they participate in a voting. They will also be able to initiate a voting subject if they have the necessary amount of points. Voting subjects will also be categorized. Users will also be able to subscribe to other users and vote for their voting subjects. Since this is an online application there is a need for a backend system and a database system. I will develop a java web application as my backend system that will provide REST services to the android clients. Technologies like Spring, Hibernate, JAX-RS etc. will be used. My database will be PostgreSQL. I will use AWS EC2 instances as my backend servers to deploy my web application. Since I will use multiple EC2 instances (clustering) the AWS load balancer will be used also. Database replication will be also implemented. Each server node will have its own database that will read from. But when it has to perform a write it will write to all the databases in the cluster. This is to increase performance and fault tolerance. An alternative to this implementation is to use the AWS RDS Read Replicas or the RDS Multi AZ replicas. Those replica machines will agree on all votes cast and will avoid duplicate or inconsistent data. For security SSL will be used between the servers and the clients. Also SSL will be used between a server and another server’s database. Password advanced encryption and salt hashing will be used also. Finally since REST services are by nature stateless and we want the system to be as scalable as possible there cannot be any kind of stateful connections between a client and a server. Therefore there will be a session-token implementation technique for user authentication each time a client uses a REST service. For naming a domain name will be bought and Amazon’s DNS servers will be used. The final android app will be uploaded to Play Store. Possible names are: VoteNow, Vote4It, VforVote, The Vote, Votebook, Votify (this is already taken ) etc.