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Team 25
Sign Out Loud

In determining our overall project plan we needed to take into account the scope, size, and complexity of our project; we needed to think about what it would take us if we were to actually do it. First we had to break our project plan into the following overarching tasks: Problem Specification, Project Planning, Project Analysis and Design, Project Development, Deployment and Maintenance. For problem specification, we determined it would only require a few team members to do sufficient research to determine if the project is feasible. Any more than this number and there would not have been enough work to go around. Similarly, with project planning, since this is the job of the project manager, we only assigned the project manager to the project planning phase of this project.

The bulk of required manpower is in the design, implementation, and maintenance of the application. For design, we determined that given engineers with experience working on applications like this before, we would only need two engineers to do the design of the application. Any more than that would lead to a “too many chefs in the kitchen” sort of scenario; where everyone has their own opinion about how things should be designed; since design is as much an art as it is a science. We found it best to take a longer time and have one cohesive and coherent design than to assign too many people to make the high level design decisions.

For the development phase, each module was broken down into smaller tasks: implementation, test planning, unit testing, and code review. For the vast majority of the smaller modules, there is only really enough work for one or two developers at most to be working on it at one time. Otherwise, there’s just too much code that was interconnected to work in parallel on certain modules. The biggest exceptions to this rule were in the controller and interface modules. For the interface, most of the code can be written in parallel since little interface code needs to interface with other parts of the interface. For the controller, we determined such a huge task involving the identification of signs and then interpreting them into natural human language would require numerous engineers a very long time to complete; since it would involve not only computer vision but also natural language processing to complete in any reasonable fashion. For that reason, our development costs and time run rather high, but the investment is something that can be reused in the future on other projects.

Ultimately, the calendar time required to develop Sign Out Loud is going to take 270 work days and 378 calendar days to complete. The number of man hours required for a project of this size and scope is 13,120 and the total cost of this project will be $1,359,120 at an hourly rate of $105 per hour for each individual team member.