

Design Project 2019 FAQ

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1. **Is concurrent editing supposed to be like Google Docs, i.e. realtime editing concurrently, or more like git, i.e. local editing concurrently?** It is more like git. We are not asking you to fully design a git-like system, but if there are particular characteristics of it that are important to you MUGS system, you should specify them and explain why they are important.
2. **Where is the MIT File System stored?** All the services described in the document run on your server except Kerberos and Gradescope. These latter two run remotely on their own servers.
3. **Can a student use either their own Kerberos ID or a group ID and how is that handled?** Yes, everyone will have a set of Kerberos IDs at their disposal, their own personal one and those of any group the person is a member of. The person will need to be able to select and use the appropriate one at any given time.
4. **What is the difference between a Kerberos ID and a Kerberos name?** A Kerberos ID is an unforgeable token. Holding a copy of a Kerberos ID is taken to mean that the holder has the right to act as that Kerberos ID. Kerberos IDs are verified or authenticated by the MIDS. Therefore, giving a Kerberos ID to someone carries with it the fact that that person can then act with the privileges of that Kerberos ID. This is how people are “put into Kerberos based groups”. Each Kerberos ID has a Kerberos name, a string associated with it. Knowing that name does not imply anything about any ability to act with the privileges of that Kerberos ID.
5. **Do we need to create a new name for our system, or can we just use “MUGS”?** You do not have to come up with a more creative name, but we, who are reviewing your projects, enjoy them and have seen lots of creativity in this area.
6. **What to the Administrative TA and Head WRAP instructors do?** The Administrative TA carries out many administrative course activities, such as setting up the teaching groups for the recitations, uploading many of the grades from all the recitations, and providing backup to the Recitation TAs if they need it either in class or in grading. The Head WRAP instructors take the leadership role for the whole WRAP staff, teach their own Tutorials, and provide backup and support to the other WRAP instructors as needed. They also play an instrumental role in the ongoing content development for the communications component of the course.
7. **Since a Recitation team jointly teaches two recitations (and tutorials) can those two groups of students in the two recitations be considered as one “recitation”?** They can be grouped, but they must also be distinguishable, so one should be able to see all the grades for a particular assignment for each individual recitation or tutorial. If you think it is valuable to see the combined grades for two recitations, that is fine as well.
8. **Is there any need to deal with networks outside MIT?** Yes, both students and staff may leave campus and should be able to continue to use the MUGS system, from outside MIT.
9. **In what ways must one be able to collect grades?** One may want to consider grades for each assignment either for the class as a whole, or by recitation or tutorial. In addition, we need to be able to consolidate all the grades across all the assignments for each student. This may happen during the term just to check on the progress of an individual student, but also definitely at the end of the term in order to begin the process of assigning final grades. In this latter case, one

needs to be able to collect all the data for all the students into one inclusive spreadsheet or other data structure to process them all.

- 10. We are a little confused about whether a file can be modified in the MFS by two people simultaneously without their having downloaded copies of the file. This has left us confused about what it means to merge multiple versions of a file.** You are right that this is vague and possibly confusing in the description. You will need to decide what semantics you believe are correct for dealing with simultaneous edits or updates to a file. This will involve clarifying both what you mean to happen and how that will be done.
- 11. How are Kerberos_IDs and Kerberos_names used?** The way they are used is that if a client wants a service to perform a function, the client will choose the appropriate Kerberos_ID that they are holding (in a secure way) and pass it to the service as part of the function invocation. The service will first request that the Kerberos service authenticate the Kerberos_ID. If that is successful, the Kerberos service will return the associated Kerberos_name to the requested service. That service will in turn verify authorization by checking that that Kerberos_name has permission to request that function. When both authentication and authorization have succeeded the function will actually be requested. Notice, that although all the function calls do not include a Kerberos_ID, every call will in fact include that. Thus, for example, if someone is trying to create new Kerberos_IDs, as the TAs will for each design team, each TA will need to include their own Kerberos_ID to invoke the create function. It will be checked for both authentication and authorization.
- 12. We are confused about the difference between putting files into the filesystem and submitting assignments. Are they the same thing?** No, they are different. Files exist in the file system. Designating a specific file as a submission is a separate operation. The MUGS system must present staff members with the specific files that are to be considered as the “submissions” for that assignment, and only those files. There may be many versions of an assignment in the filesystem for each student or DP team. They must specify which one is the one to be considered the submission.
- 13. Does the MFS use storage on our central server? How does the filesystem relate to Athena?** The MFS runs on the central MUGS server. Athena files are no different than files on your local (laptop) filesystem. They are files that are outside the MUGS system, in a different file system. They also can be files that are sync'd with the MSS.
- 14. How much does our target audience know about the requirements and other parts of the specification?** You can assume that they have read (and perhaps written) the original document. They understand the specifications of the MIDS, MFS, MSS, etc. In addition, in general they understand about the specific function calls provided as specified by those services. If you refer to one of those function calls, you will probably want to name it, but you need not specify the full set of parameters for it. You will want to be sure that there is no confusion on their part about what you mean.
- 15. Do we have to use all the provided services for all the functions we are designing? Can we design supporting services of our own?** You should only use the provided services in cases where they do something useful to you. Do not use them if that is not the case. In addition, if there are other services that you believe would be useful, you can (perhaps should) specify them as well. As always, these design choices should be justified.
- 16. We are confused about the voting system. Should students be picking their top 5 choices unordered or ordered?** We did not specify this, so you should decide for yourselves which way you would like this to go, understanding that that might be changed in a future design.

- 17. We are confused about the sync service.** When a client downloads a file using the sync service, they get a copy of the file and a hidden tag, which includes something like a timestamp and a version number or checksum. When they upload the file, the sync service will check that the tag reflects both the time that the file was downloaded and the fact that the version number, checksum or whatever has not change. If those are true, the upload can proceed. If the client tries to upload the file twice, the newest version of the file on the server will have a different “sync” timestamp, as well as other checks not matching. So it will not re-upload the file. This is especially important if the client modifies the file further between attempts to upload.
- 18. Does the DPPR have at address all the requirements in the document?** Your report should establish your design choices. If you are choosing not to meet a requirement, you will need to justify that choice. It is certainly feasible to make choices, design trade-offs, such that fulfilling one or some of the requirements will mean giving them priority over others. You will need to justify such choices.
- 19. How should we be designing for the kill function?** There are two parts to designing for the kill function. The first is how the “kill” signal will be transmitted. Is it within the file transfer protocol or a separate function. The second is how it will be handled. What will happen so that the receiving end is alerted to the situation and then what does it do? Designing to achieve these is part of your challenge.