**IST 634 - Fall 2020 Section 51 - Project Description**

**Group 6** (**Redis**, December 2)  
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**Redis for the mass storage, retrieval and analysis of student transcripts:**

If students have access to their transcripts on a trusted blockchain, it enables them to cheaply send out records of their transcripts to employment seeking websites, like how job seekers can upload a resume or create a webform equivalent of a resume on sites like linkedin or Indeed. The level of trust provided by the blockchain would make the transcript a much more reliable indicator of competency for recruiters, as skills on a resume can be easily fabricated whereas a grade on the transcript is legitimized by an actual university.

Because transcripts would be stored on the blockchain, there is little need to store their information permanently on the servers of the recruitment sites (such stored data would likely be outdated by the end of a semester anyway). This makes Redis the ideal tool for sites and services that want to be able to handle very large numbers of transcripts efficiently. Redis uses key-value based system that runs entirely in memory, sacrificing data permanence for incredible retrieval and write speeds. Our project will have three parts:

A transcript generator, written in Python, that will simulate a high volume of users who have submitted their transcript from the blockchain to a recruitment website. It will generate transcripts (as well as some user data such as name, unique id, location) in the JSON format, which can be easily represented as a string for storage with Redis or parsed as a dictionary in Python.

A Redis database, using Python as a client language, which will store the full transcripts of all users and provide additional analytic and set filtering functions, such as finding students from a specific geographic location, tabulating the number of classes taken from a particular university or department, creating a leaderboard for grades within a class or gpa within a type of degree.

An interface which allows a user to view transcripts or analytic data.