Donorchoose. org is a funding platform that supports school projects. Currently they review the applications manually and decide whether to approve or decline the application. Manual review involves lot of time and volunteer resources, which can be used productively else where. Hence to automate the application review process, a classification model is built and deployed which will replace the manual review.

EXPLORATORY DATA ANALYSIS

The data collected by the Donor choose has information about the student grade, subject category of the project, teacher experience, school state and detailed essay on the project along with the project application timestamp. A tableau dashboard was built to monitor the key KPIs of the incoming applications — it tracks the total application volume by approval status, tracks the trend of approval rate over various time intervals — like weekly, daily monthly and so on. In addition to this it tracks the approval rate based on teacher experience along with resource analysis. Some key observations are

* Overall approval rate is around 85%
* Overall rate of teacher with past experience is slightly higher than first time applicants
* Most projects costs around $200 while some projects which requires electronic devices like tablets costs more than $1,000
* Apple Ipad, Lenovo Ideapad and chromebook constitues the top required resources in terms of $
* We received highest number of applications from California followed by New York, Florida, Texas and North Carolina.

Tableau Dashboard Link — <https://public.tableau.com/app/profile/mohamed.iqbal7268/viz/Portfolio_Project_17474808206110/DonorAapprovalRate>

* Average essay length of approved projects are higher than the projects that were not approved.
* Also approved projects have higher number of teachers with past experience
* Median project cost of approved ones are slightly lower than the ones that were not approved. This may indicate high cost projects have lower approval rates

HYPOTHESIS TESTING

* Significance of project subject category on approval\_staus were statistically tested using chi square test and it showed subject category has significant impact on project outcome
* Sginificance of teacher experience on approval rates were statistically tested using t-test and it showed teachers with experience have significantly higher approval rates against those who do not have any experience.
* Project cost and approval rates are negatively correlated with increase in project cost we noticed approval to go down slightly
* We also was increase in essay length significantly impacted the approval rates.