**Question3**

For different places, like universities and coffee shops, we should choose distinct models. In this part, we use an example of a public place to describe how our model changes. We use university of MIT as an instance, to analyze the demand of the E-car charging station to satisfy 11376 students’ demands in charging. For its function, since university could be attributed to the Government Sponsor category, it is different to coffee shop.

For government places, like a university, the propose they provide free charging service is to meet the demand of students and professors, but nor for making money by attracting consumers through free charging service. Plus, the current sockets have already satisfied students’ demand and the energy-consuming for plug-in is relatively small compared to that of EV charger. As a result, we neglect the factor of plug-in in this model.

Consider that approximately 80% of students own their cars. Therefore, in the foundation that 21.6% people own EV, we time it by 80% to solve the number of college students who own EV

Then, we can apply the energy function:

Therefore, MIT will consume 61473.54kWh for charging EV if they satisfy all the student’s demands.

For solving out the quantity of charging station, we firstly find the maximum value of

By calculating, we find the max point is , so,

Therefore, will be:

**Conclusion**

For MIT, to satisfied all the student demand in charging EV. Is should at least build 420 charging stations, the fixed cost is $420000, and the energy consumption for charging the EV will be $885.218976 per day.

