**Project Proposal**

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**Title:** Prediction of Medical Appointment No-Shows

According to an article in Harvard Business Review (HBR), approximately 3.6 million people miss medical appointments each year. Missed appointments not only create an obstacle in providing medical care to the patients, it also cost billions of dollars to the healthcare provider. Addressing the issue can improve patient experience and lower healthcare cost (Kim, Myers, & Allen, 2017).

This project will attempt to develop a model that can predict those patients that are prone to miss medical appointments. Using historical medical dataset, a model can predict the behavior of patients regarding medical appointments. By predicting patients inclined to miss appointments, healthcare providers can design creative ways to solve the problem and encourage or help patients to keep their appointments.

R programming will be used for this project. Since the project is trying to predict no-show patients, a classification method will be used. A learner will be trained using a supervised learning method. The first part of the project will focus on exploratory data analysis; in the second part, machine learning model will be built to predict no-show patients. Both visual and non-visual analytical methods will be used to demonstrate the project.

A dataset -Medical Appointment No-Shows, from Kaggle will be used for this project. The dataset is collected by healthcare providers in Brazil. This dataset is a medium-sized dataset with about 300,000 observations and 15 variables, and it is readily available in CSV format. There could be some missed values and it may need some data cleaning before using the dataset to develop a model.

**Project timeline**

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| Data collection and data cleaning | 1 week |
| Exploratory data analysis (EDA) | 2 week |
| Model Building | 2 week |
| Final Report | 2 week |

**Reference**

Kim, S. H., Myers, C. G., & Allen, L. (2017, August 31). Health Care Providers Can Use Design Thinking to Improve Patient Experiences. *Harvard Business Review*. Retrieved from https://hbr.org/2017/08/health-care-providers-can-use-design-thinking-to-improve-patient-experiences