We created a shiny application for the first dataset to help our clients better understand and interact with the data. The shiny application has five different tabs to visualize the structure of the data. We have two simple tabs, just to see the distributions of subgroups of the clients and two more complicated tabs from which we can observe the relationship between response rate of the clients and contact method together with client subgroups.

The first tab is ‘Introduction’, which gives users a brief introduction of the dataset and the goal of the analysis.

The second tab is ‘Demographics’. As we can see, in our dataset, we have a lot of different information about our clients, while some of the information is just about the demographics. We pick up those variables and create this tab to visualize the demographic distributions of our clients. To be more specific, we can visualize the distributions of age group, gender, job category and education level. The demographics is very important, we can see if our clients a biased, if there is imbalance within subgroups. These are potential factors of an inaccurate analysis thus we want to visualize them.

The third tab is ‘Financial Background’. In this tab, we separate the information about one’s financial background from other information. Here we can visualize if a person ever has loan, ever has mortgage, ever lend money from other sources, ever purchases insurance, ever goes over his/her credit card limit or the saving balance in one’s banking account. These factors are important since we want to make more profit by improving the campaign effectiveness. If our clients all have a bad financial background. For example, they all have a history of unpaid credit card, then we should think about if we can truly make a profit even if they open a loan account at our bank since it can be the case that many of them won’t pay the debt back.

The fourth tab is ‘Primary response rate’. We have three different channels to contact our clients. Those three channels are email, text message and phone call. If a client open the text message, read the email or pick up the phone call, then we say the client responds to our contact. Otherwise, we say the client doesn’t respond to us. In this tab, you can choose the contact method, the subgroup you are interested in, and whether clients respond or not to visualize the distribution of each subgroup given the method of contact. Thus, for each subgroup, we can see which method is the most efficient one. For each method, we can see which subgroup is the audience.

The last tab is called ‘Secondary response rate’. Similar to the previous tab, given the contact method, if the client eventually open an account at our bank, then we say the client responds to the method of contact. Otherwise, we say the client doesn’t respond to us. Since our goal is to improve marketing effectiveness, and there’s nothing more related to marketing effectiveness than a client open an account at our bank, we definitely want to visualize this information. That’s why we created the tab.

This is the basic structure of our shiny app. For details and for the interactivity please refer to the separate rmd file for the application.