India produces 1.5 million engineers every year. A relevant question is what determines the salary and the jobs these engineers are offered right after graduation. Various factors such as college grades, candidate skills, proximity of the college to industrial hubs, the specialization one is in, market conditions for specific industries determine this. 

The dataset contains various information about a set of engineering candidates and their employment outcomes. For every candidate, the data contains both the profile information along with their employment outcome information. Candidate Profile Information includes: 

* **Scores on Adaptive test** – a standardized test of job skills. The test includes cognitive, domain and personality assessments
* **Personal information** like gender, date of birth, etc.
* **Pre-university information** like high school grades, high school location
* **University information** like GPA, college major, college reputation proxy.
* **Demographic information** like location of college, candidates’ permanent location

Employment Outcome Information includes:

* First job annual salary
* First job title
* First job location

#### Data Collection

A million undergraduates take every year as a way to get job credentials and feedback to improve themselves. Candidates are tested on the following skills –

* **English Language, Logical Ability and Quantitative Ability** – these are IRT based adaptive modules. More information here on what IRT based adaptive tests are.
* **Personality** – Big Five based personality instrument. More information here.
* **Skill tests** – Chosen by candidates based on their interest

### **Technical Tasks**

The task is a mixture of predictive modelling, recommendation, providing insights from the data and furnishing visualization on the insights.   
**TASK A [Predictive Modelling]:**Design an annual-salary predictor based on the independent variables. You may use any machine learning technique.   
**TASK B [Recommendation and Data Insights]:**Provide us insights on what factors determine salaries in the labour market. You may do this through one or more of the following techniques: feature analysis, interpretable models, causal analysis and other approaches. Provide your commentary/interpretation of why particular factors may be influencing salary outcomes. You may use the same model for both tasks, Task A and Task B.   
**TASK C [Visualization]:**Come up with interesting visualizations and inferences on job titles and city of job (the two other dependent variables). Feel free to use any sort of plots, graphics and visualizations to provide more insight into patterns in job titles and job location and how the independent variables influence the labour market. 