1. Data Generation and Exploratory Data Analysis (EDA):

Fabricating data to generate accurate and viable data is always a difficult step.

I sourced my data mostly from using packages out there specifically for data generation, and sourcing various websites and blogs for additional information and ideas for having fraudulent claims.

I used *Faker* as well as *Elizabeth* in conjunction to get better and appropriate results, I initially started off with a excel database of names and surnames, but due to the malformation of the database it was tedious and cumbersome to validate and integrate. I also used some random data which I implemented and validated to make the data set more realistic. Here is the list of fraudulent claims reasons with explanations.

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| **No Date of birth** | It is important to know the date of birth of a person, since it is possible to work out the age of the person and check maturity ages for the policy. |
| **Date of birth calculated Age and Age do not match** | Since this is a verification step to make sure that the person is valid and not fabricated, date of birth calculated age and age should match otherwise this claim is invalid. |
| **Claim amount is more than Sum Insured** | A person can only claim the maximum amount that the person is insured for. |
| **No Policy start date** | This is a mandatory field since without this a claim is incomplete, due to the fact that the policy may not exist. |
| **No Policy end date** | Also another mandatory field since this verifies if the claim was within the policy agreement, due to the fact that the policy may not exist. |
| **Policy end date before start date** | This makes an invalid policy since the end date can never be before the start. |
| **Claim Date before loss** | A person cannot claim before a loss has happened. |
| **No kind of loss** | If the kind loss is not specified the claim cannot be valid. |
| **Invalid kind of loss** | If the kind of loss is not one of the options that the insurer provides. |
| **No premium but has claim** | If you do not pay a monthly fee, one cannot have a claim. Since nothing is free In this world. |
| **Claim after Policy end date** | A Claim cannot be created after the policy has ended. |
| **Claim before Policy start** | A Claim cannot be created before a policy has started. |
| **Age is not in requirements** | Age is a requirement that each insurer has, you have to have a reasonable age, older than 18 and younger that a maximum age of 120. |

1. **PPDM**
2. **Data Cleaning**
3. **Machine Learning**
4. **Bonus**