* Dataset:<https://www.kaggle.com/datasets/danofer/compass/data>
* Regarding p% rule: <https://www.giskard.ai/knowledge/how-to-test-ml-models-5-the-80-rule-to-measure-disparity#:~:text=The%2080%25%20rule%20is%20a,process%20may%20be%20considered%20discriminatory.>
* Referenced this github repository to implement Adversarial Debiasness: <https://github.com/equialgo/fairness-in-ml/blob/master/fairness-in-ml.ipynb>
* Referenced this when doing the logistic regression: <https://www.datacamp.com/tutorial/understanding-logistic-regression-python>
* Referenced this when getting the coefficient of my model for the feature importance: <https://forecastegy.com/posts/feature-importance-in-logistic-regression/#:~:text=In%20multiclass%20logistic%20regression%2C%20we,the%20coefficients%20across%20all%20classes>.
* To understand what the different columns mean: [Chapter 10 Story COMPAS: recidivism reloaded | XAI Stories (pbiecek.github.io)](https://pbiecek.github.io/xai_stories/story-compas.html#data-3)

## About the dataset [COMPAS Recidivism Racial Bias (kaggle.com)](https://www.kaggle.com/datasets/danofer/compass/data)

*COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) is a popular commercial algorithm used by judges and parole officers for scoring criminal defendant’s likelihood of reoffending (recidivism). It has been shown that the algorithm is biased in favor of white defendants, and against black inmates, based on a 2 year follow up study (i.e who actually committed crimes or violent crimes after 2 years). The pattern of mistakes, as measured by precision/sensitivity is notable.*

*“Black defendants were often predicted to be at a higher risk of recidivism than they actually were. Our analysis found that black defendants who did not recidivate over a two-year period were nearly twice as likely to be misclassified as higher risk compared to their white counterparts (45 percent vs. 23 percent).*

*White defendants were often predicted to be less risky than they were. Our analysis found that white defendants who re-offended within the next two years were mistakenly labeled low risk almost twice as often as black re-offenders (48 percent vs. 28 percent).*

*The analysis also showed that even when controlling for prior crimes, future recidivism, age, and gender, black defendants were 45 percent more likely to be assigned higher risk scores than white defendants.”*

* *Black defendants were also twice as likely as white defendants to be misclassified as being a higher risk of violent recidivism. And white violent recidivists were 63 percent more likely to have been misclassified as a low risk of violent recidivism, compared with black violent recidivists.*
* *The violent recidivism analysis also showed that even when controlling for prior crimes, future recidivism, age, and gender, black defendants were 77 percent more likely to be assigned higher risk scores than white defendants.*

*Data contains variables used by the COMPAS algorithm in scoring defendants, along with their outcomes within 2 years of the decision, for over 10,000 criminal defendants in Broward County, Florida.*

***Both Context and Content were taken from the Kaggle link above.***

**Dataset and Descriptions**

| **Column** | **Description** |
| --- | --- |
| Person\_ID | Identification associated with defendants |
| AssessmentID | Identification associated with assessment |
| Case\_ID | Identification associated with case |
| Agency\_Text | Where the people were assessed |
| LastName, FirstName, MiddleName | Name information of defendants |
| Sex\_Code\_Text | Defendant gender information (Male/Female) |
| Ethnic\_Code\_Text | Defendant racial information (9 ethnicities) |
| DateOfBirth | Defendant age information (Can be utilised with Screening\_Date to obtain age) |
| ScaleSet\_ID | Based on ScaleSet (17 = All Scales, 22 = Risk and Prescreen) |
| ScaleSet | Scale applied for assessment (All Scales/Risk and Prescreen) |
| AssessmentReason | All values are "intake" |
| Language | Assumed to be language utilised by defendant (English/Spanish) |
| LegalStatus | Defendant's legal status (Parole violator, Pretrial, etc) |
| CustodyStatus | Defendant's custodial status (Parole, Probation, etc) |
| MaritalStatus | Defendant's marital status (Married/Single) |
| Screening\_Date | Date where defendant was assessed and score given |
| RecSupervisionLevel | Recomended Supervision Level scored from 1 to 4 |
| RecSupervisionLevelText | 1 = Low, 2 = Medium, 3 = Medium with Override Consideration, 4 = High |
| Scale\_ID | Identification associated with scale used (7/8/18) |
| DisplayText | Risk of Violence/Risk of Recidivism/Risk of failure to appear |
| RawScore | Risk score associated with DisplayText |
| DecileScore | Score associated with defendant (in a scale of 1 to 10 and "NA") |
| ScoreText | Category based on DecileScore  Below 5 is "Low", 5-7 is "Medium", 8-10 is "High", -1 is given "NA" (empty) |
| AssessmentType | New or Copy, whether previously generated and copied or new |
| IsCompleted | All default to 1 |
| IsDeleted | All default to 0 |