**Model Development Phase Template**

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| Date | 18 June 2025 |
| Team ID | SWTID1749709635 |
| Project Title | Mental Health Prediction |
| Maximum Marks | 5 Marks |

**Feature Selection Report Template**

In the forthcoming update, each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

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| --- | --- | --- | --- |
| **Feature** | **Description** | **Selected (Yes/No)** | **Reasoning** |
| Timestamp | Time of survey submission | No | Metadata; irrelevant for prediction; dropped during preprocessing. |
| Age | Age of the respondent (numerical) | Yes | Age is a continuous variable and an important predictor of mental health trends. |
| Gender | Gender identity of the respondent | Yes | Gender differences influence mental health experiences and likelihood of treatment. |
| Country | Country of residence | Yes | Cultural and national context can impact mental health awareness and treatment. |
| state | State for US only | No | Dropped in preprocessing; very sparse and not generalizable across countries. |
| self\_employed | |  | | --- | |  |   Self-employment status | No | Weak importance in predicting mental health treatment; possibly little variation in dataset. |
| family\_history | Family history of mental illness | Yes | Strong correlation with likelihood of mental health conditions. |
| treatment | Whether respondent has sought treatment or not | Yes | This is the target variable, not a feature. |
| work\_interference | How mental health interferes with work | Yes | Directly reflects the impact of mental health issues and influences help-seeking behavior. |
| no\_employees | Company size | No | Low influence on individual mental health treatment decision. |
| remote\_work | Whether respondent works remotely or not | No | Weak predictor; less relevant in isolation for treatment-seeking behavior. |
| tech\_company | Whether the person works in a tech company | No | Not significantly predictive of treatment-seeking behavior in feature importance results. |
| benefits | Whether mental health benefits are provided by employer | Yes | Access to mental health benefits influences treatment decisions. |
| care\_options | Availability of mental health care options | Yes | |  | | --- | |  |  |  | | --- | | Important for undertstand ease of access,  to treatment | |
| wellness\_program | Availability of wellness programs | No | Lower importance relative to other features; often overlaps with other benefits-related fields. |
| seek\_help | Encouragement from employer to seek help | Yes | Positive correlation with likelihood of seeking treatment. |
| anonymity | Whether anonymity is provided when seeking mental health treatment | No | Moderate importance; excluded to simplify model based on lower relative contribution. |
| leave | Ease of taking medical leave | Yes | Indicates how supportive the environment is, influencing treatment-seeking. |
| nental\_health\_consequence | Perceived consequence of discussing mental health at work | Yes | Fear of consequence can discourage treatment; highly relevant feature. |
| physical\_health\_consequence | Perceived consequence of discussing physical health at work | No | Less predictive of mental health treatment compared to mental health consequences. |
| coworkers | Comfort discussing mental health with coworkers | Yes | Support from coworkers can influence willingness to seek treatment. |
| supervisor | Comfort discussing mental health with supervisor | Yes | |  | | --- | |  |  |  | | --- | | Supervisor support directly affects  treatment decisions. | |
| mental\_health\_interview | Willingness to discuss mental health in interview | No | Lower practical importance in treatment outcome prediction. |
| phys\_health\_interview | Willingness to discuss physical health in interview | No | Least relevant to the current task of predicting mental health treatment. |
| mental\_vs\_physical | Whether mental health is treated as seriously as physical health at workplace | Yes | Reflects organizational culture; strong influence on help-seeking behavior. |
| obs\_consequence | Observed consequences of discussing mental health at workplace | Yes | Important in assessing perceived risk and stigma, thus predicting treatment behavior. |
| comments | Free text field for comments if any | No | |  | | --- | |  |  |  | | --- | | Unstructured text not processed  in current version;  dropped from preprocessing. | |