

Model Development Phase Template

Date	18 June 2025
Team ID	SWTID1749622322
Project Title	HealthCareApp – Mental Health Prediction Model Using ML
Maximum Marks	5 Marks

Feature Selection Report Template

During the model development phase, we analyzed all available features and selected the most relevant ones based on their impact on prediction accuracy. Each feature was evaluated for its contribution to identifying mental health risks. Selected features include age, gender, stress levels, work type, sleep patterns, and family history. These were chosen due to their strong correlation with mental health outcomes.

Unselected features were excluded due to low relevance, redundancy, or missing values. This structured approach ensures better model performance and improved transparency in the feature selection process.

Feature	Description	Selected (Yes/No)	Reasoning
Age	Age of the individual	No	Age may influence stress levels and mental health risk.
Gender	Gender of the respondent	Yes	Gender may show patterns in mental health trends.
State	State or location of the individual	No	Geographic location is not directly relevant to mental health prediction.

family_history	Family history of mental illness	Yes	Important predictor for inherited mental health risks.
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Self_Employed	Whether the person is selfemployed	Yes	Work type may affect stress and mental well-being.
Treatment	Whether the person has sought mental health treatment	Yes	Indicates prior mental health issues, useful for risk prediction.
work_interfere	How mental health interferes with work	Yes	Directly linked to severity of mental health issues.
no_employees	Company size where the individual works	Yes	Work environment size may affect mental health support and culture.

remote_work	Whether the person works remotely	Yes	Remote work can affect isolation and stress levels.
tech_company	Whether the person works in a tech company	Yes	Industry type may correlate with workplace stress factors.
benefits	Whether employer provides mental health benefits	Yes	Affects support availability for mental well-being.

care_options	Availability of mental health care options	Yes	Indicates how easy it is to seek help, influencing mental health outcomes.
wellness_program	Employer offers wellness programs	Yes	Promotes mental well-being and preventive care.
seek_help	Comfort in seeking help for mental health	Yes	Reflects openness and awareness toward mental health.

anonymity	Whether anonymity is guaranteed when seeking help	Yes	May influence willingness to seek support.
leave	Ease of taking leave for mental health reasons	Yes	Supportive policies reduce stress and burnout.
mental_health_consequence	Perceived consequence of discussing mental health at work	Yes	Reflects workplace stigma and openness.
phys_health_consequence	Perceived consequence of discussing physical health	No	Less directly related to mental health prediction.
coworkers	Comfort talking to coworkers about mental health	Yes	Peer support is important for mental well-being.
mental_vs_physical	Whether mental health is viewed equal to physical health	Yes	Reflects general attitude and awareness.

obs_consequence	Observed consequences of mental health discussions	Yes	Shows workplace behavior toward mental health, indicating supportiveness.
comments	Additional free-text comments by the participant	No	Unstructured text not used in this model; requires NLP for proper analysis.