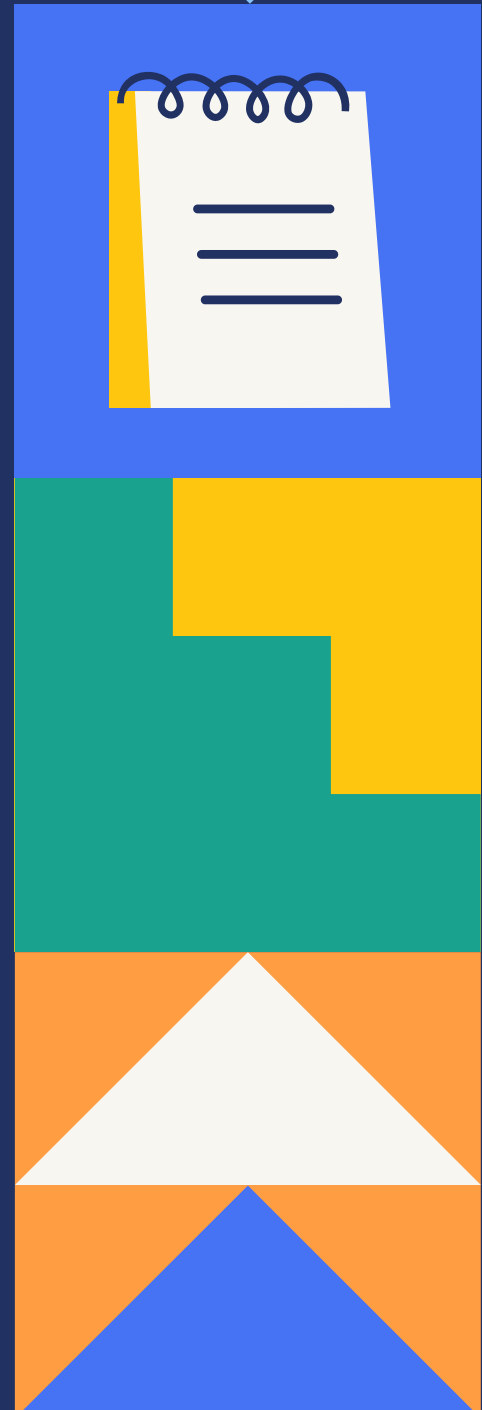
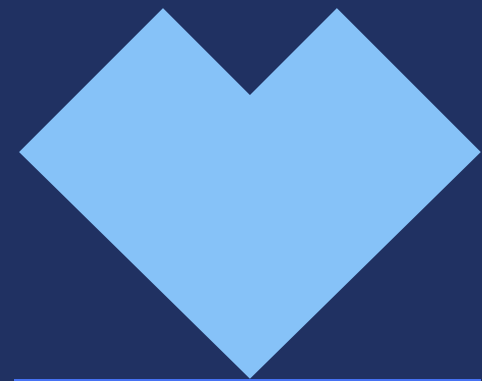


The Impact of Remote Work on Employee Mental Health

Oct 2024 - Banawata KOUROUMA

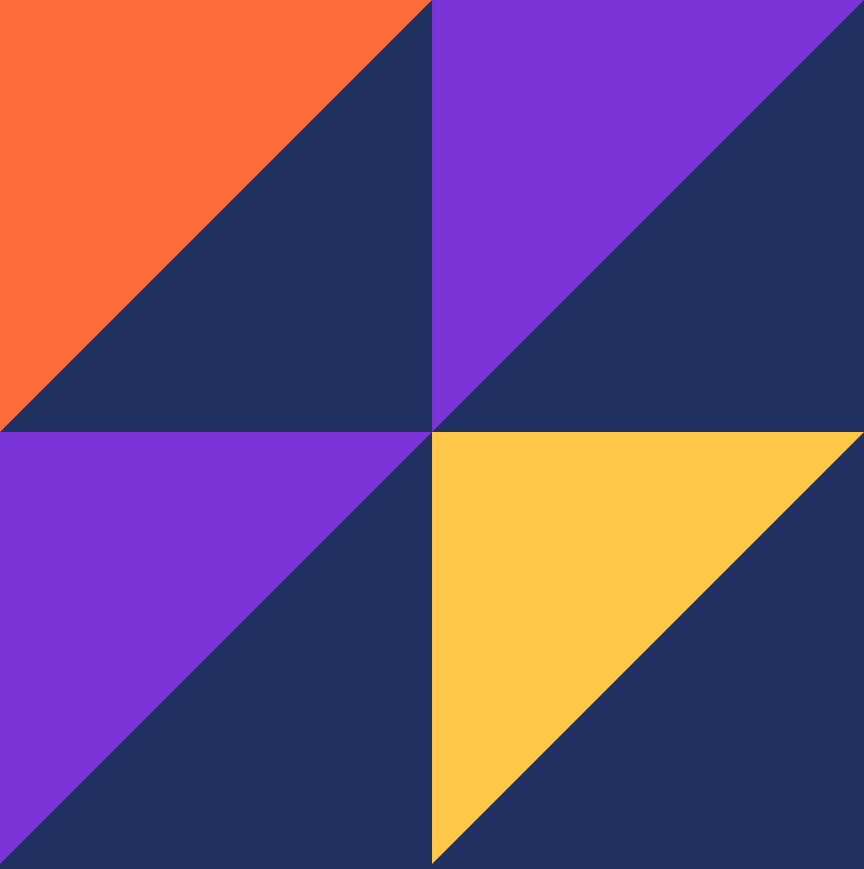




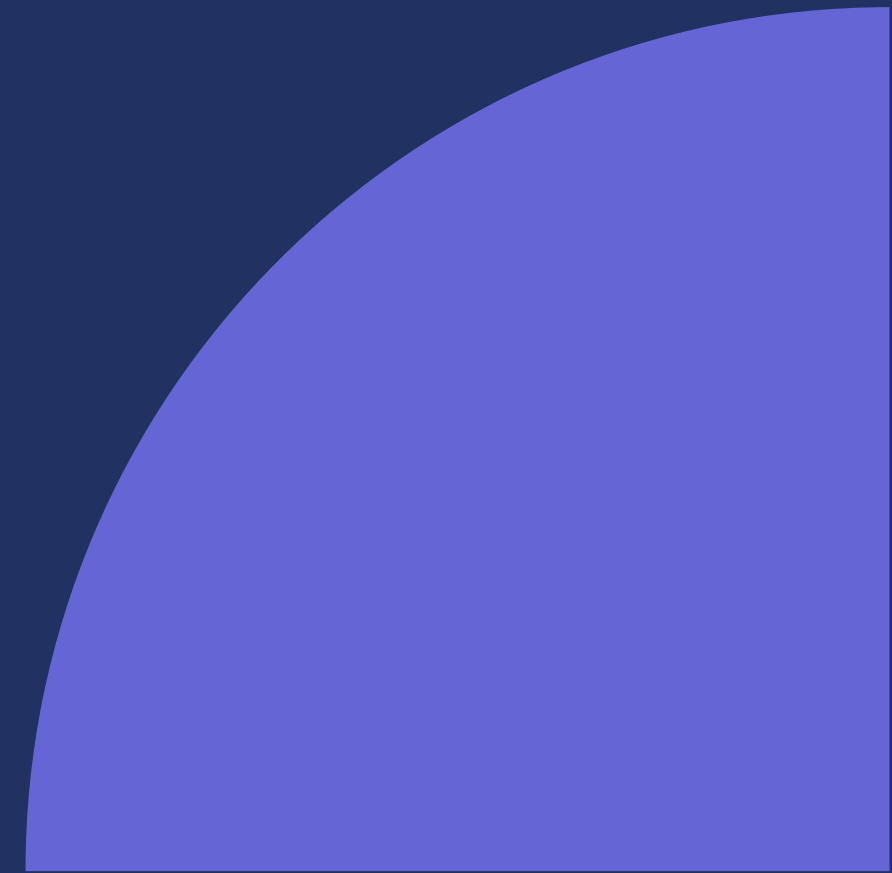
Introduction



- Objective: Analyze the relationship between work locations (remote, onsite, hybrid) and mental health outcomes such as anxiety, burnout, and depression.
- Business Relevance: Understanding remote work's impact on mental health can help companies develop strategies to support employee well-being, which is essential for retention and productivity.



Problem Statement and Importance



Problem Statement and Importance



Remote work has raised concerns about employee mental health, with increasing cases of anxiety, burnout, and depression.



Using insights from the data can help companies improve their remote work strategies and implement mental health support to enhance employee satisfaction and retention.



Data-driven analysis allows us to identify mental health trends and offer solutions to improve employee well-being.

The image features a dark blue background. In the top-left corner, there is a cluster of four triangles: one orange, one purple, one yellow, and one dark blue. In the bottom-right corner, there is a large, light blue circular shape.

Hypothesis

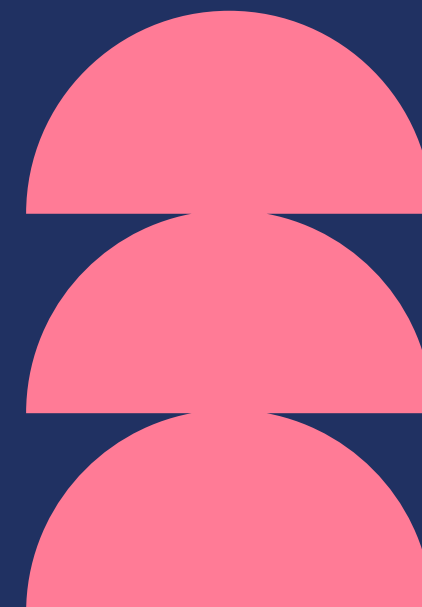


Hypothesis

Hypothesis general :

- Work Location has a significant impact on Mental Health.

Sub -hypothesis :

- 
- H1: Work location is significantly associated with stress levels.
 - H2: Work location has a significant relationship with work-life balance.
 - H3: Changes in productivity are related to work-life balance.

The image features a dark blue background. In the top-left corner, there is a cluster of four triangles: one orange, one purple, and two yellow. In the bottom-right corner, there is a large, light blue circular shape. The text "Data Collection" is centered in the middle of the image in a light blue, sans-serif font.

Data Collection



Data collection

Data from Kaggle

Data Source:

The dataset was simulated to reflect various work environments (remote, onsite, hybrid) and employee mental health conditions (anxiety, burnout, depression).

Relevant Fields:

Demographics: Age, Gender, Job Role.
Work Environment: Work Location (Hybrid, Remote, Onsite).
Mental Health Indicators: Anxiety, Burnout, Depression, Work-Life Balance.

Business Relevance

This data provides valuable insights into how different work environments impact employee mental health, helping businesses tailor their mental health support strategies.

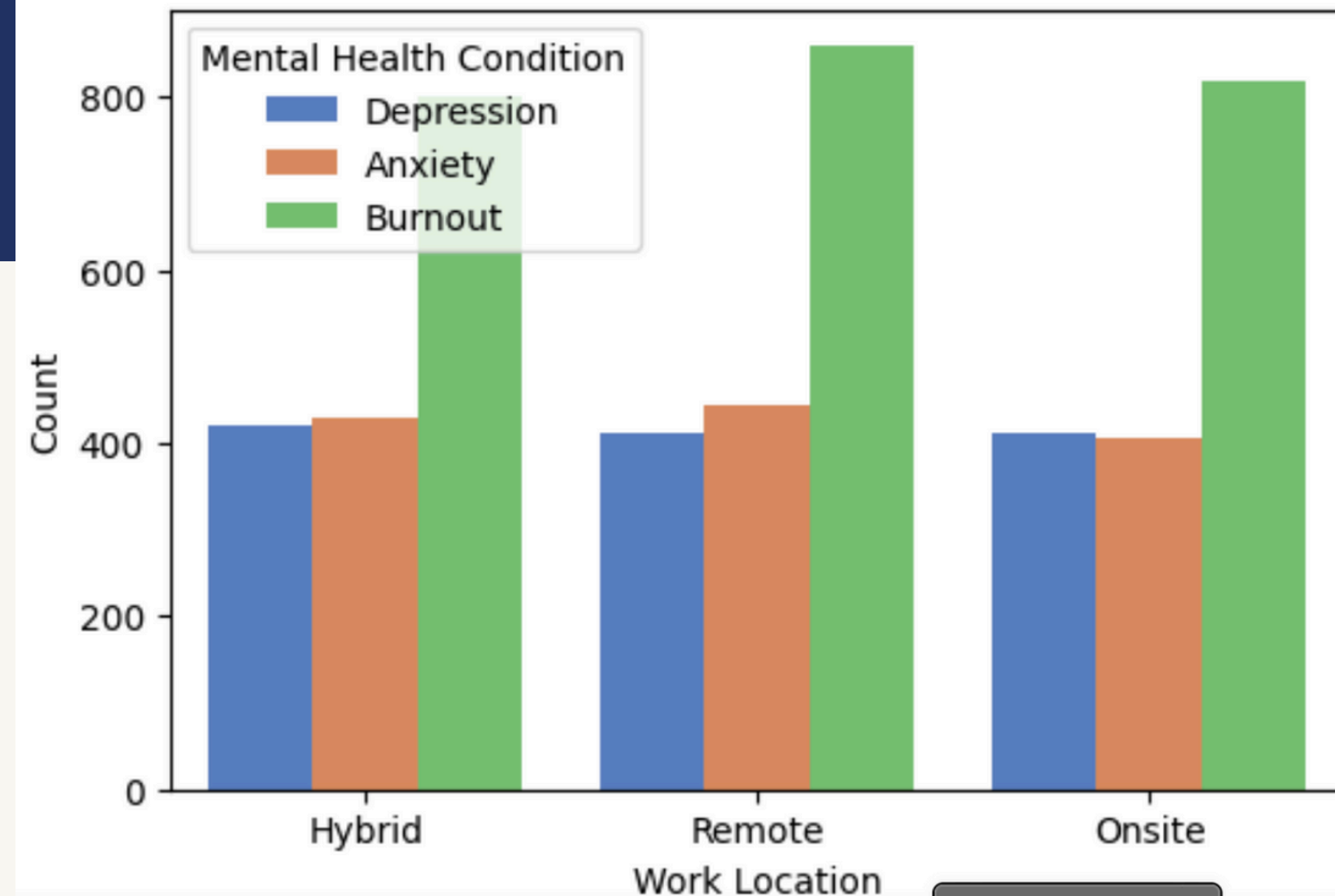
The image features a dark blue background. In the top-left corner, there is a cluster of four triangles: one orange, one purple, one yellow, and one dark blue. In the bottom-right corner, there is a large, light blue circular shape.

Exploratory Data Analysis

EDA

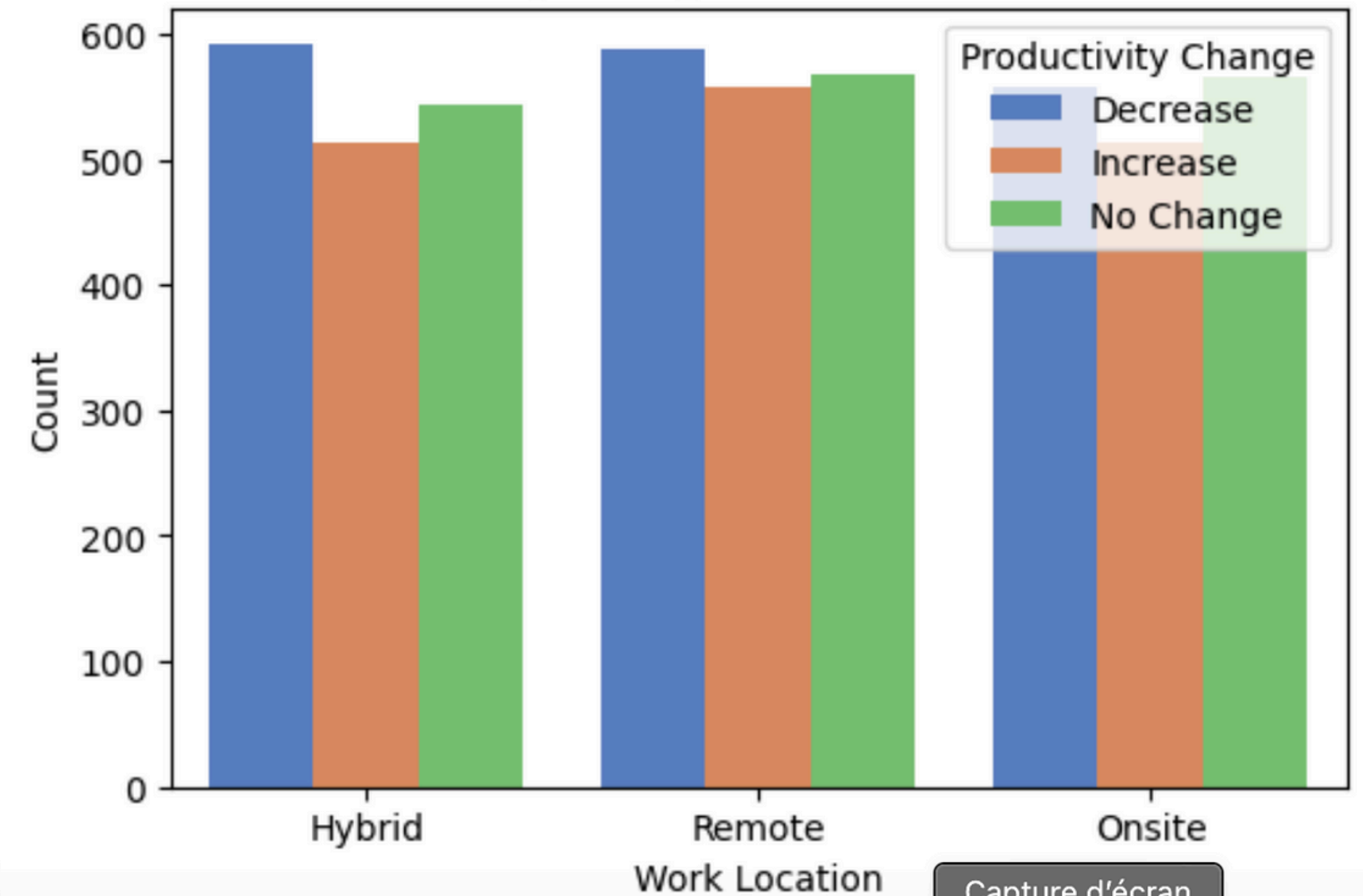
MENTAL HEALTH VS WORK LOCATION VS PRODUCTIVITY CHANGE

Mental Health Conditions across Work Locations



Capture d'écran

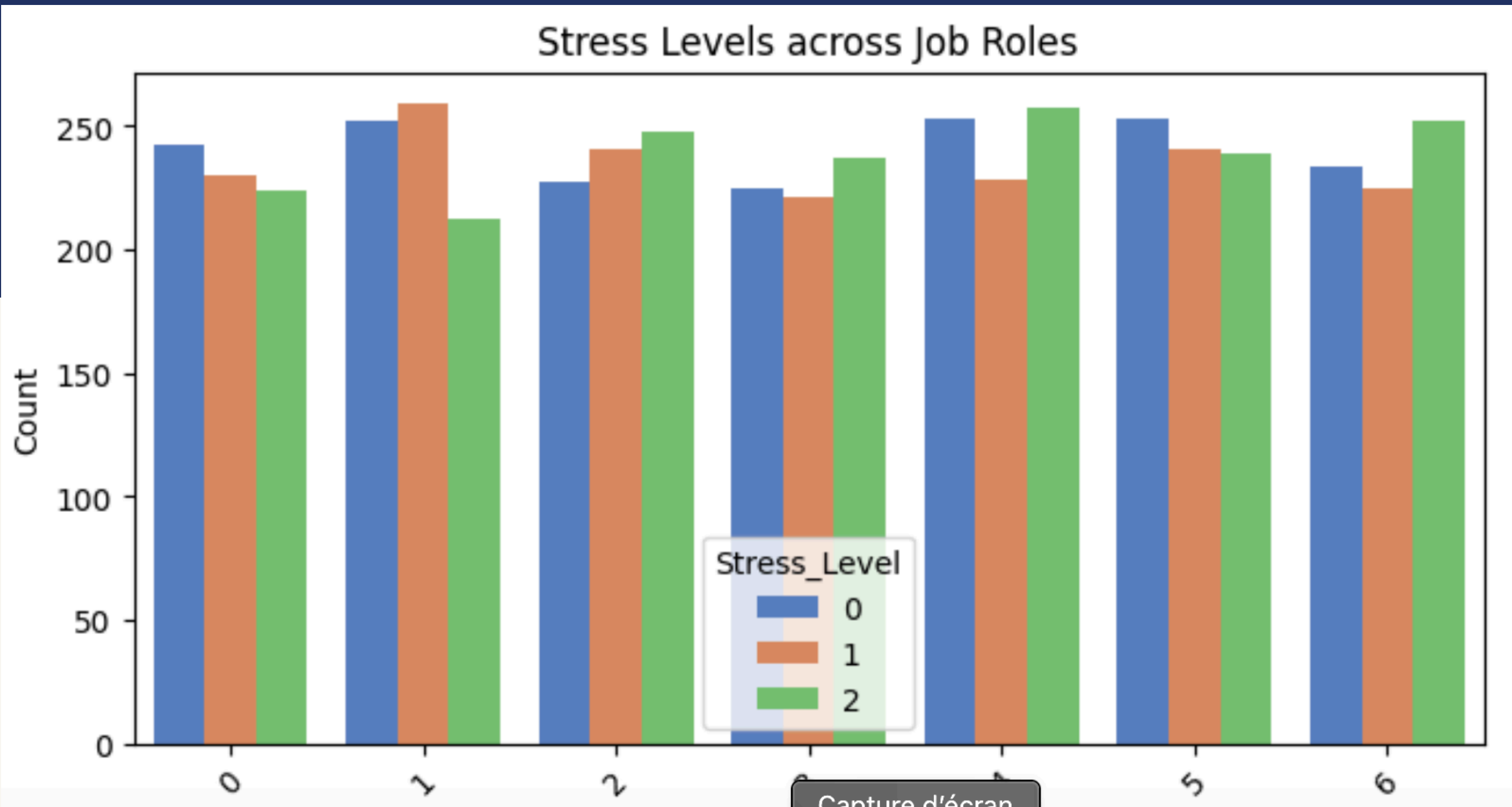
Productivity Change across Work Locations



Capture d'écran

EDA

STRESS VS JOB ROLES



The background is a solid dark blue. In the top-left corner, there is a geometric pattern of triangles in orange, purple, and yellow. In the bottom-right corner, there is a large, light blue circular shape.

Hypothesis Results

Hypothesis Results

General hypothesis

Chi-Square Statistic: 1.725516230047377
P-value: 0.7860775179211476
Fail to reject the null hypothesis: There is no significant association between Work Location and Mental Health Conditions.

Sub- Hypothesis

Chi-Square Statistic: 1.725516230047377
P-value: 0.7860775179211476
Fail to reject the null hypothesis: There is no significant relationship between Work Location and Mental Health Conditions.

Chi-Square Statistic: 8.35298303598177
P-value: 0.3997709095022564
Fail to reject the null hypothesis: There is no significant relationship between Stress Level and Work-Life Balance.

Chi-Square Statistic: 3.5894546446202544
P-value: 0.892137278325681
Fail to reject the null hypothesis: There is no significant relationship between Productivity Change and Work-Life Balance.

Hypothesis Results

General Hypothesis:

Rejected based on the Chi-Square test results (no significant relationship found).

Sub-hypothesis:

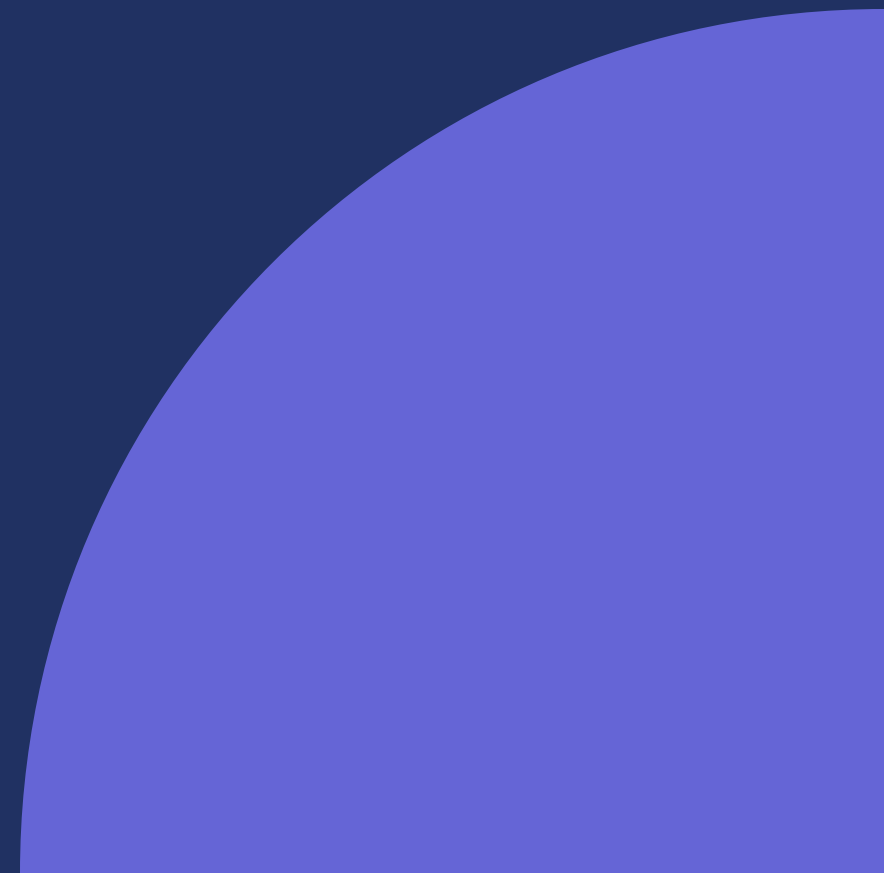
Sub-Hypothesis 1: Stress levels are not significantly associated with work location.

Sub-Hypothesis 2: There is no significant relationship between work location and work-life balance.

Sub-Hypothesis 3: Changes in productivity do not significantly affect work-life balance.



Statistical and Machine Learning Analysis



Statistical and Machine Learning Analysis

X_train_encoded_np shape: (4000, 13)
X_test_encoded_np shape: (1000, 13)
Tuned Random Forest Train Accuracy: 0.99
Tuned Random Forest Test Accuracy: 0.65
Classification Report for Training Set (Random Forest):

	precision	recall	f1-score	support
--	-----------	--------	----------	---------

False	0.99	0.99	0.99	2991
True	0.98	0.96	0.97	1009
accuracy			0.99	4000
macro avg	0.99	0.98	0.98	4000
weighted avg	0.99	0.99	0.99	4000

Classification Report for Test Set (Random Forest):

	precision	recall	f1-score	support
False	0.73	0.83	0.78	731
True	0.27	0.17	0.21	269
accuracy			0.65	1000
macro avg	0.50	0.50	0.49	1000
weighted avg	0.61	0.65	0.62	1000

Gradient Boosting Train Accuracy: 0.75
Gradient Boosting Test Accuracy: 0.73
Classification Report for Training Set (Gradient Boosting):

	precision	recall	f1-score	support
False	0.75	1.00	0.86	2991
True	1.00	0.00	0.01	1009
accuracy			0.75	4000
macro avg	0.87	0.50	0.43	4000
weighted avg	0.81	0.75	0.64	4000

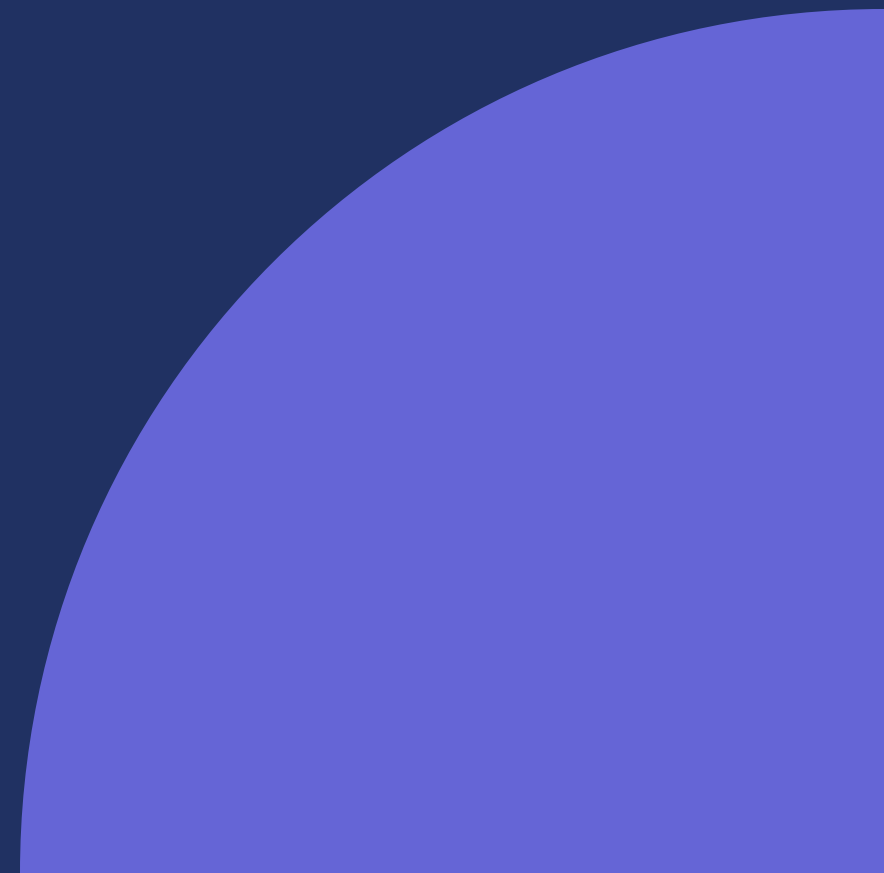
Classification Report for Test Set (Gradient Boosting):

	precision	recall	f1-score	support
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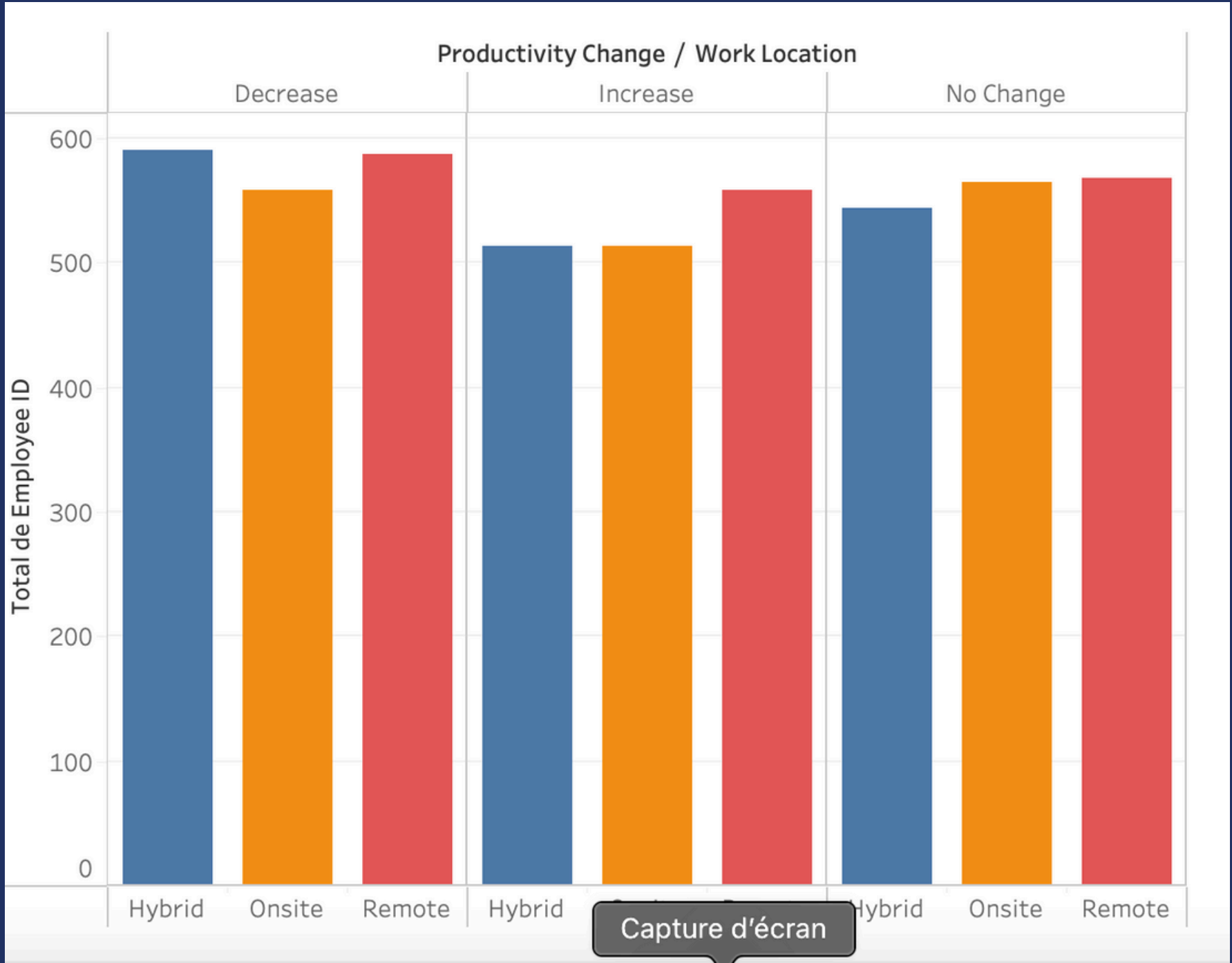
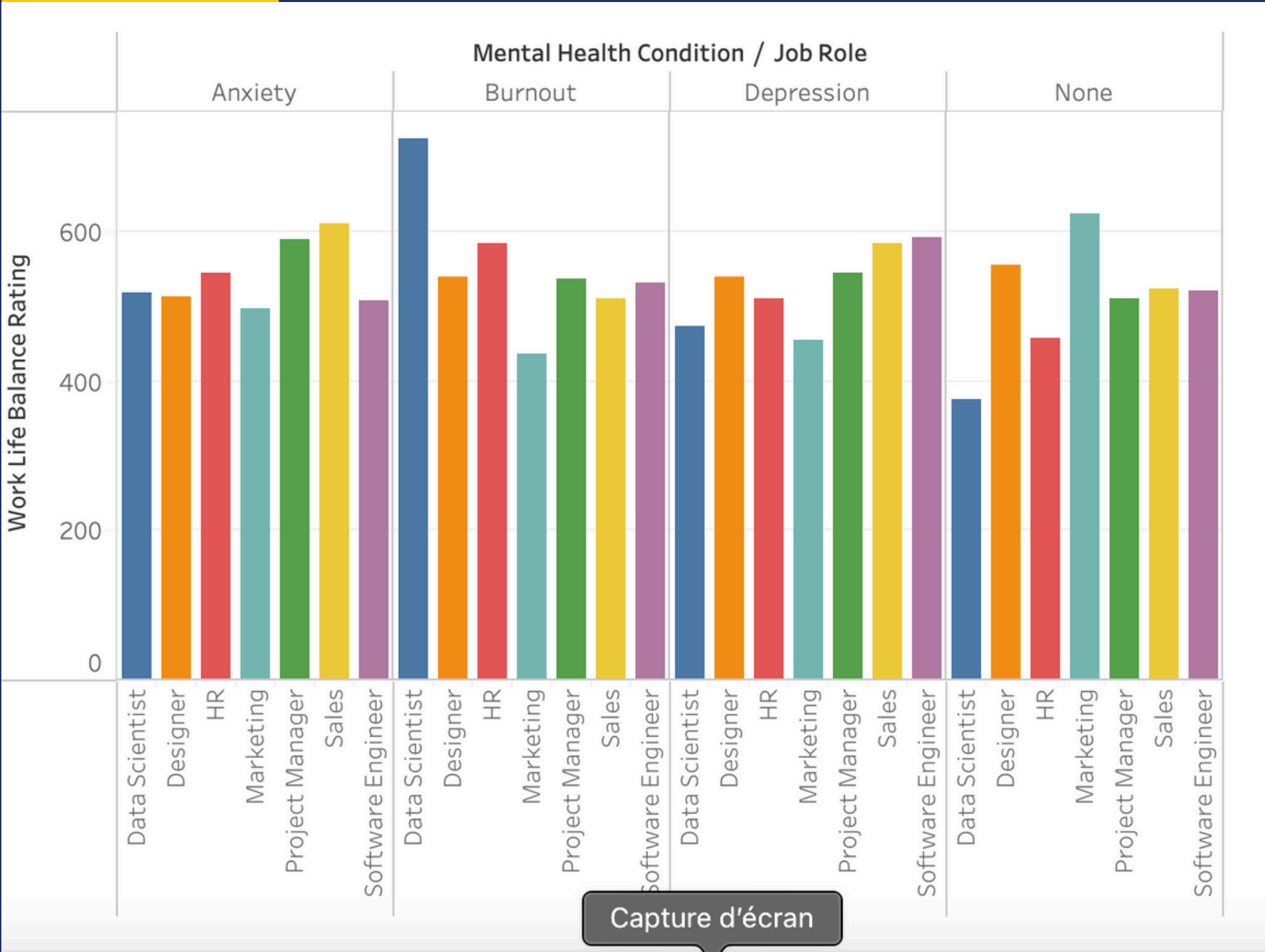
False	0.73	1.00	0.84	731
True	1.00	0.00	0.00	269
accuracy			0.73	1000
macro avg	0.87	0.50	0.42	1000
weighted avg	0.80	0.73	0.62	1000



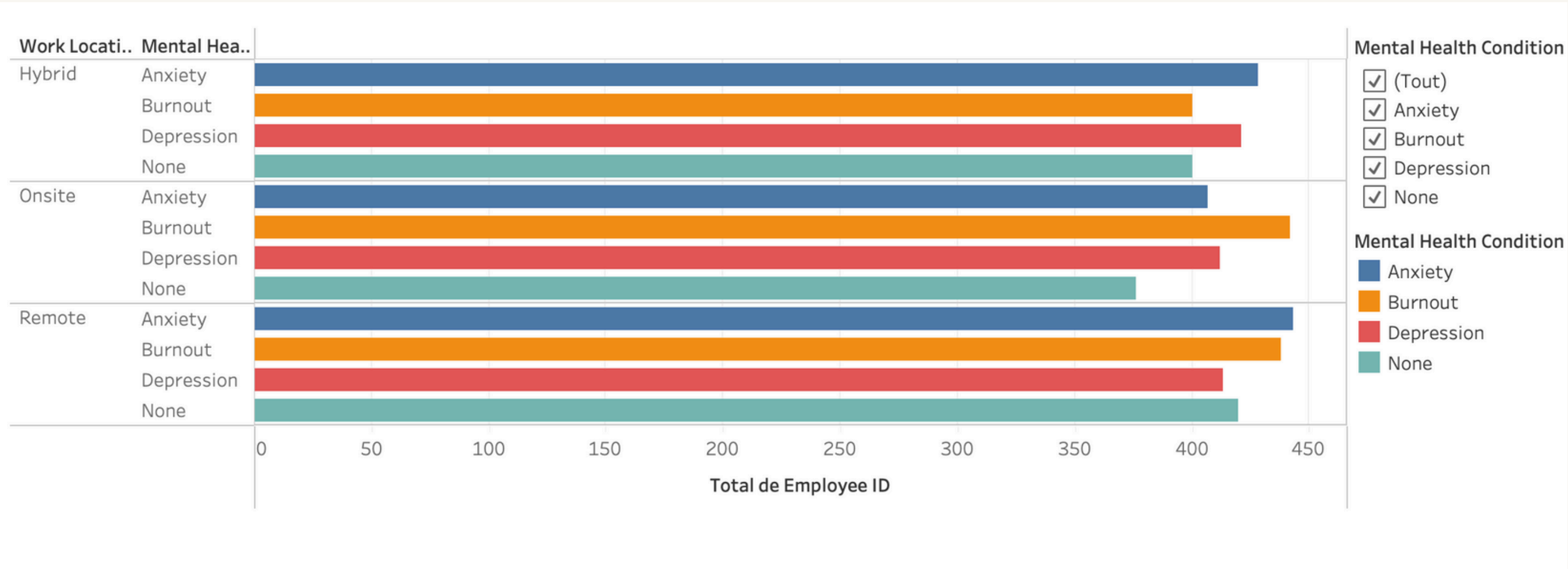
Decision-Making and Dashboards



Decision-Making and Dashboards

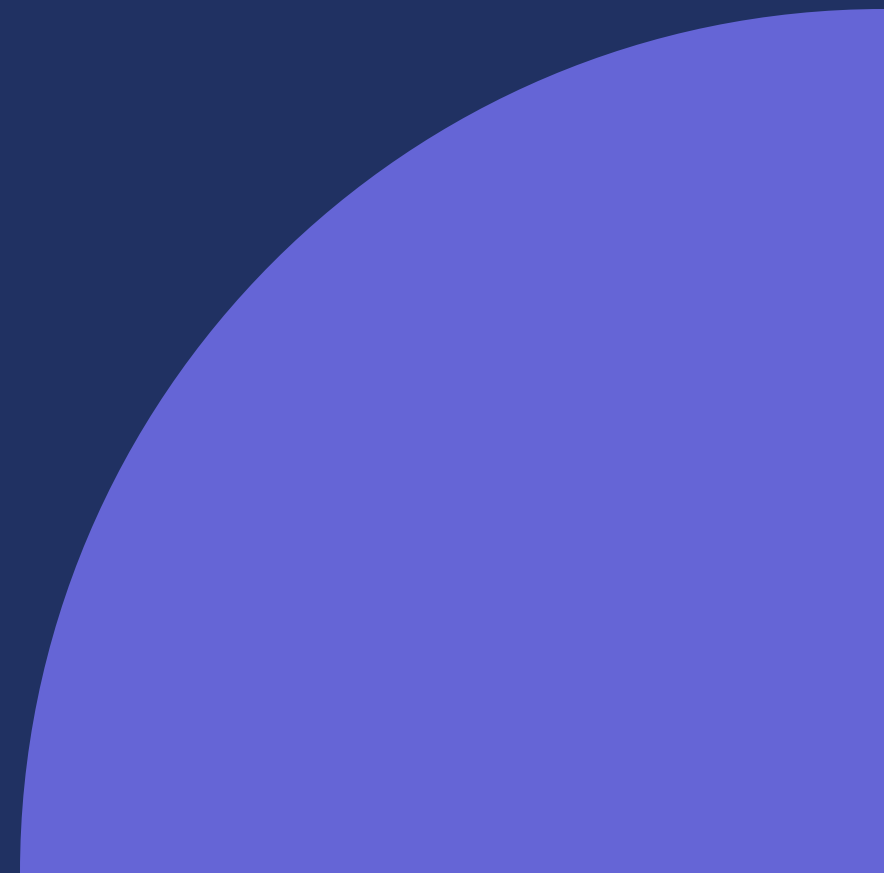


Decision-Making and Dashboards





Recommendations for the Business



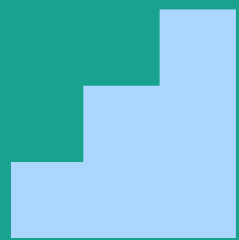


Recommendations for the Business



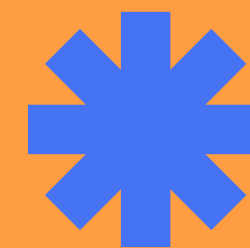
Stress Management Programs:

Introduce targeted programs to reduce work-related stress, especially for remote workers.



Tailored Mental Health Support

Create mental health support programs tailored to specific job roles and work locations.



Flexible Work Policies:

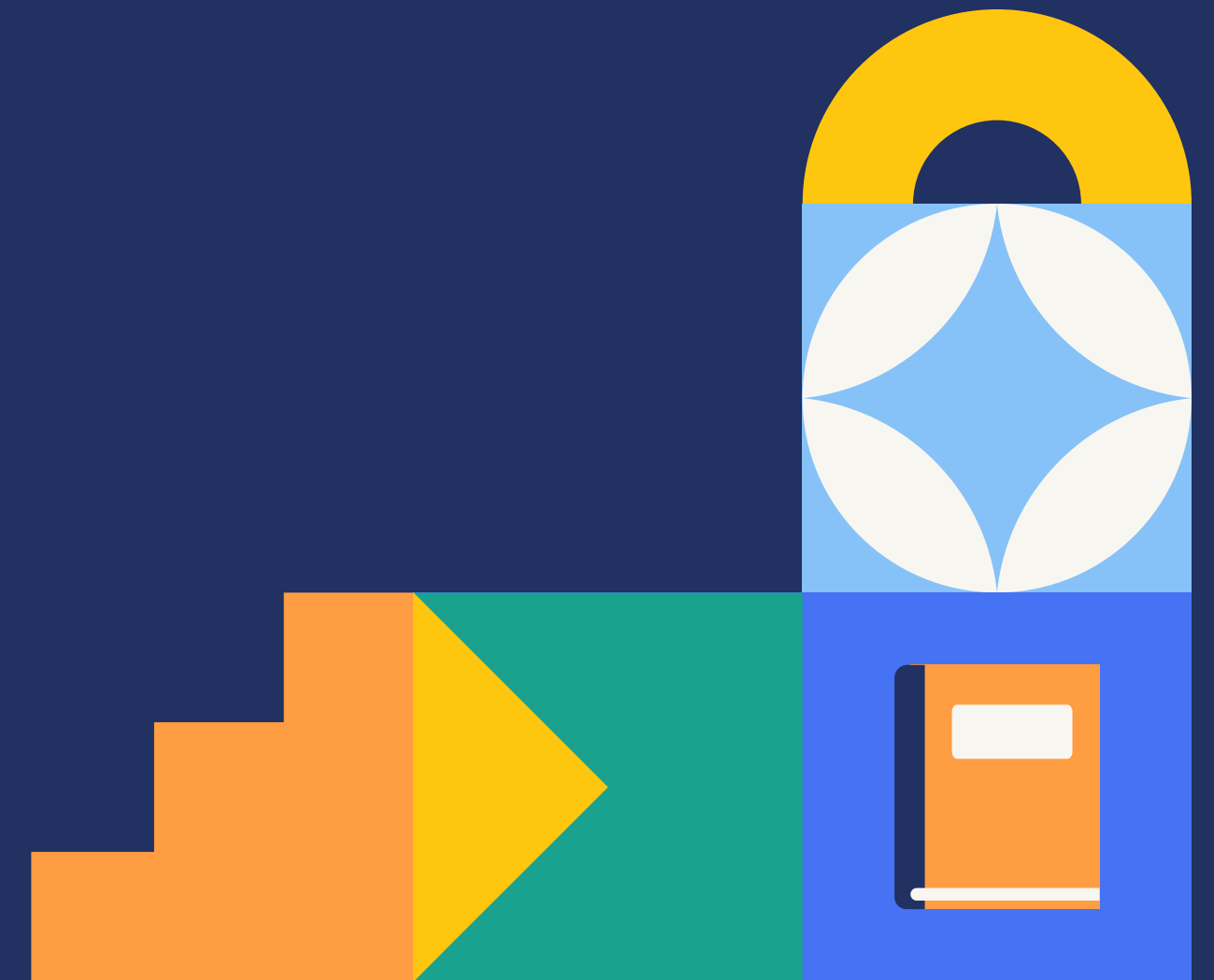
Offer flexible work hours and environments to improve work-life balance, thus reducing burnout.

The background is a solid dark blue. In the top-left corner, there is a cluster of four triangles meeting at a central point, colored orange, purple, purple, and yellow. In the bottom-right corner, there is a large, light blue circular shape partially visible.

Conclusion

Conclusion

- **Key Takeaways:** Work location alone does not directly predict mental health issues, but factors like stress and work-life balance are crucial.
- **Business Focus:** Companies should prioritize stress management and work-life balance, especially for remote and hybrid employees.
- **Next Steps:** Refine remote work policies, invest in mental health resources, and use continuous monitoring to ensure employee well-being.





Thank You & Resources

Thank you for
listening

Dataset: [[Dataset link](#)]

Full Analysis (GitHub): [[GitHub link](#)]

Interactive Dashboards (Tableau): [[Tableau link](#)]

