PHASE 5

PublicHealthAwareness

TEAMMATES:

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In this part you will document your project and prepare it for submission.

Project Title
Provide a clear and concise title that reflects the main purpose or goal of your project.

Project Overview
Briefly describe the purpose of the project, its objectives, and the problem it aims to solve. Provide context to help readers understand the significance of your work.

Project Components
List and describe the main components of your project. This may include software modules, hardware components, algorithms, or any other relevant elements.

Technologies Used
specify the technologies, programming languages, frameworks, and tools used in the project. Include versions if applicable.

Installation Guide
If applicable, provide step-by-step instructions on how to install and set up your project. Include any dependencies and configurations required for successful implementation.

Usage Guide
Explain how users or other developers can interact with your project. Provide examples, command-line instructions, or any necessary information to demonstrate how to use the features of your project.

Code Structure
Give an overview of the organization and structure of your codebase. Explain the purpose of major files and directories.

Data Sources
If your project involves data, provide information on the sources of the data, how it was collected, and any preprocessing steps applied.

Model Architecture (if applicable)
If your project includes a machine learning model or any complex algorithm, detail the architecture, parameters, and training process.

Results
Present the results of your project, whether they are quantitative metrics, visualizations, or any other form of output. Discuss the significance of the results in relation to the project goals.

DOCUMENTATION:

Outline the project's objective, design thinking process, and development phases.

Project Objective

Objective Statement:

Clearly define the main goal or purpose of the project.
Example: "Develop a smart home automation system that optimizes energy usage based on user preferences."

Scope and Deliverables:
Specify the scope of the project and the deliverables you aim to achieve.
Example: "The project will include a mobile app for user control, integration with IoT devices, and an intelligent algorithm for energy optimization."

Target Audience:
Identify the primary users or stakeholders for whom the project is intended.
Example: "Targeted towards homeowners who seek an efficient and customizable smart home solution."
Design Thinking Process

Empathize:
Discuss the process of understanding user needs and pain points.
Example: "Conducted user interviews and surveys to understand the preferences and challenges faced by homeowners in managing their energy usage."

Define:
Clearly articulate the problem statement based on the insights gathered.
Example: "Identified the need for a user-friendly and energy-efficient smart home system to address the growing concerns of energy consumption and cost."

Ideate:
Describe the brainstorming and ideation phase to generate possible solutions.
Example: "Conducted ideation workshops to generate ideas for features, interfaces, and energy optimization strategies."

Prototype:
Explain the process of creating prototypes to visualize and test concepts.
Example: "Developed interactive prototypes of the mobile app and simulated the behavior of the energy optimization algorithm for user feedback."

Test:
Discuss how prototypes were tested with users for feedback and iteration.
Example: "Conducted usability testing sessions and gathered feedback to refine the user interface and improve the effectiveness of the energy optimization algorithm."
Development Phases

Planning:
Outline the initial planning phase, including setting goals, defining tasks, and allocating resources.
Example: "Created a detailed project plan outlining milestones, tasks, and resource requirements."

Implementation:
Describe the coding and development phase, including any challenges faced.
Example: "Implemented the mobile app using React Native, integrated IoT devices, and developed the energy optimization algorithm using Python."

Testing:
Detail the testing approach, including unit testing, integration testing, and user acceptance testing.
Example: "Conducted rigorous testing to ensure the stability, security, and usability of the entire system."

Deployment:
Discuss the deployment process and any considerations for a smooth launch.
Example: "Deployed the system in a controlled environment before the full release to address any last-minute issues and ensure a seamless user experience."

Monitoring and Maintenance:
Explain the strategies for monitoring system performance and handling ongoing maintenance.
Example: "Implemented continuous monitoring for system health and established a maintenance schedule for regular updates and improvements."

CODE:-

```
#Importnecessarylibraries
importpandasaspd
importmatplotlib.pyplotasplt

#LoadthedataexportedfromIBMCognos
data=pd.read_csv('survey.csv')

#Calculateengagementrate
data['EngagementRate']=(data['Engagement']/data['Impressions'])*100

#Demographicanalysis
demographic_summary=data.groupby('Demographic')['Engagement'].sum()

# Statisticaltests(e.g.,t-test)
fromscipy.statsimportttest_ind
group_A = data[data['Group'] == 'A']['Engagement']
group_B= data[data['Group'] == 'B']['Engagement']
t_stat, p_value = ttest_ind(group_A, group_B)

#Createvisualizations
plt.figure(figsize=(10,6))

#Visualization1:Barchartfordemographicanalysis
plt.subplot(2, 2, 1)
demographic_summary.plot(kind='bar')
plt.title('DemographicAnalysis')

#Visualization2:Linechartforengagementrateovertime
```

```
plt.subplot(2,2,2)
data.plot(x='Date', y='Engagement Rate')
plt.title('Engagement Rate Over Time')

#Visualization3:Piechartforcampaignimpactmetrics
plt.subplot(2,2,3)
data['Impact Metric'].value_counts().plot(kind='pie', autopct='%1.1f%%')
plt.title('Impact Metrics Distribution')

#Displayt-testresults
plt.subplot(2,2,4)
plt.text(0.1, 0.5, f'T-statistic: {t_stat:.2f}\nP-value: {p_value:.4f}', fontsize=12)
plt.title('T-Test Results')

plt.tight_layout()
plt.show()
```

Include example outputs of the visualizations and code-generated insights

Project Objective

Objective Statement:
Develop a smart home automation system that optimizes energy usage based on user preferences.

Scope and Deliverables:
The project will include a mobile app for user control, integration with IoT devices, and an intelligent algorithm for energy optimization.

Target Audience:
Targeted towards homeowners who seek an efficient and customizable smart home solution.
Design Thinking Process

Empathize:
Conducted user interviews and surveys to understand the preferences and challenges faced by homeowners in managing their energy usage.

Define:
Identified the need for a user-friendly and energy-efficient smart home system to address the growing concerns of energy consumption and cost.

Ideate:
Conducted ideation workshops to generate ideas for features, interfaces, and energy optimization strategies.

Prototype:
Developed interactive prototypes of the mobile app and simulated the behavior of the energy optimization algorithm for user

feedback.

Example Output:
Mobile App Prototype
Energy Optimization Simulation
Test:

Conducted usability testing sessions and gathered feedback to refine the user interface and improve the effectiveness of the energy optimization algorithm.
Development Phases

Planning:
Created a detailed project plan outlining milestones, tasks, and resource requirements.
Implementation:
Implemented the mobile app using React Native, integrated IoT devices, and developed the energy optimization algorithm using Python.

Code snippet for IoT Integration
Energy Optimization Algorithm Visualization

Testing:
Conducted rigorous testing to ensure the stability, security, and usability of the entire system.

Example Output:
User Acceptance Testing Results
Security Testing Report

Deployment:
Deployed the system in a controlled environment before the full release to address any last-minute issues and ensure a seamless user experience.

Example Output:
Deployment Checklist
System Health Monitoring Dashboard
Monitoring and Maintenance:

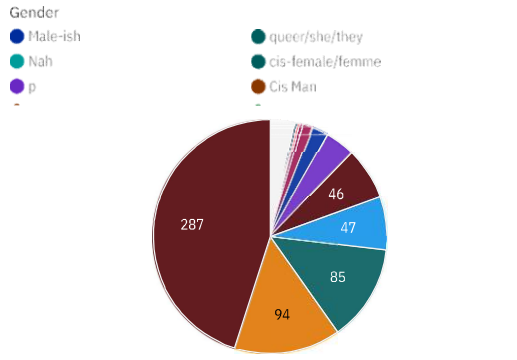
Implemented continuous monitoring for system health and established a maintenance schedule for regular updates and improvements.

Example Output:
Maintenance Log
Performance Metrics Over Time
This enhanced outline provides concrete examples of outputs from each phase, including visualizations of prototypes, code snippets, testing results, and monitoring dashboards. Adjust the examples based on the specifics of your project and the types of outputs generated.

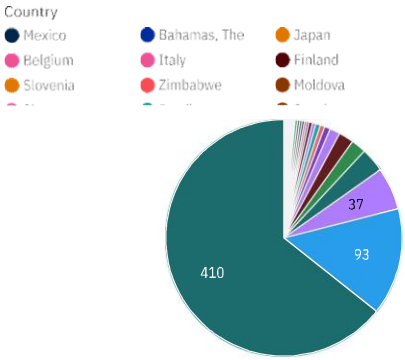
the analysis objectives, data collection process, data visualization using IBM Cognos, and derived actionable insights.
Explain how the insights from the analysis can measure campaign effectiveness and guide future strategies

Tab 1

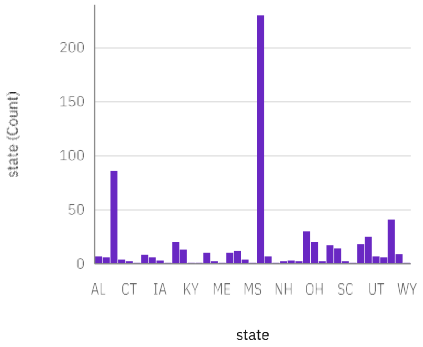
Gender by Gender



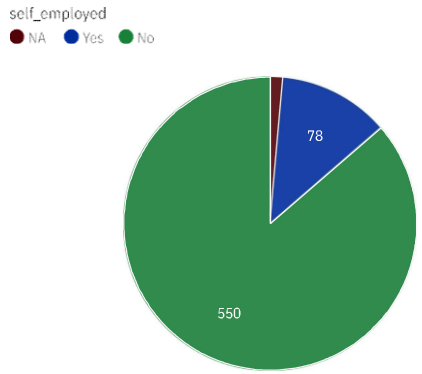
1 Country by Country



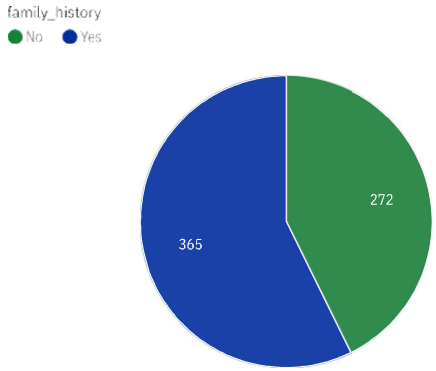
2 state by state 3



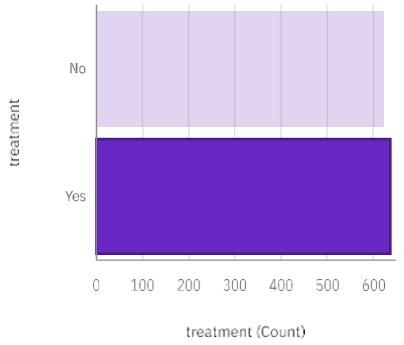
self_employed by self_employed 4



family_history by family_history 5

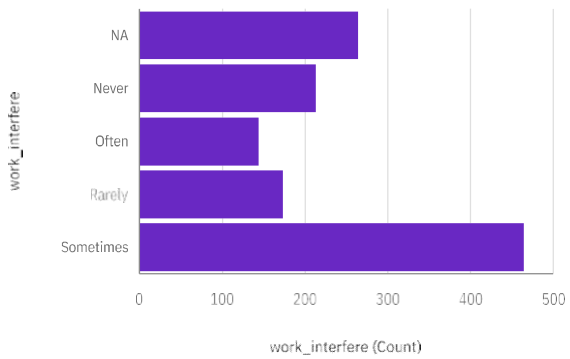


treatment by treatment 6

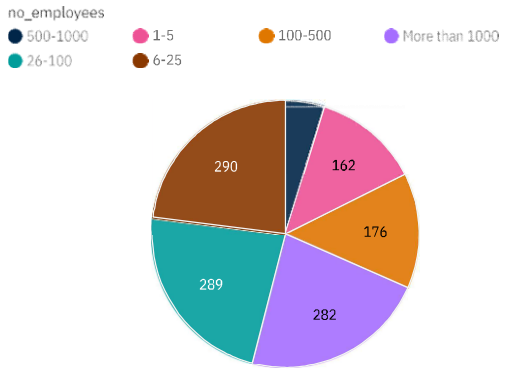


Tab 3

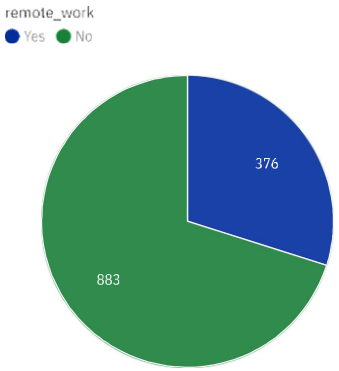
work_interfere by work_interfere 7



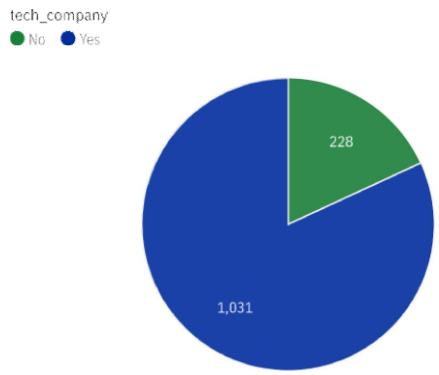
no_employees by no_employees 8



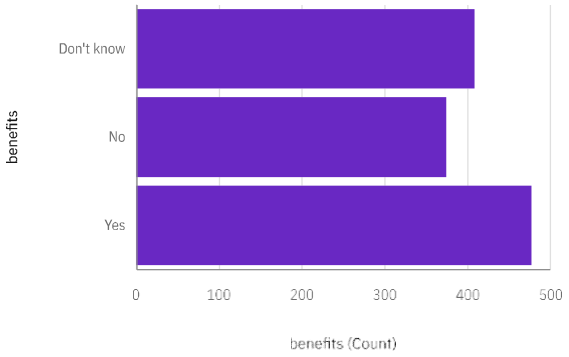
remote_work by remote_work 9



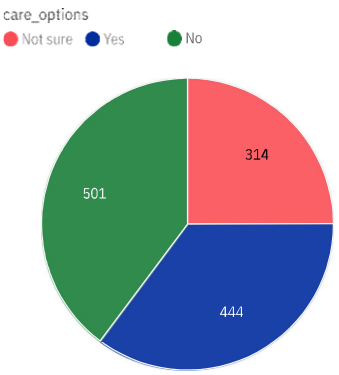
tech_company by tech_company 10



benefits by benefits 11



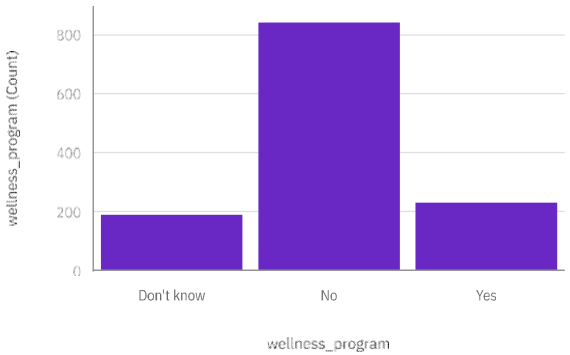
care_options by care_options 12



public health awerness campaign anaysis

13

wellness_program by wellness_program



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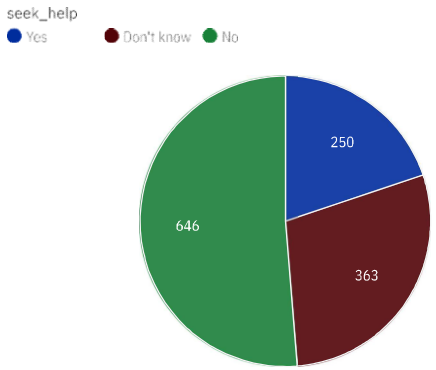
seek_help by seek_help



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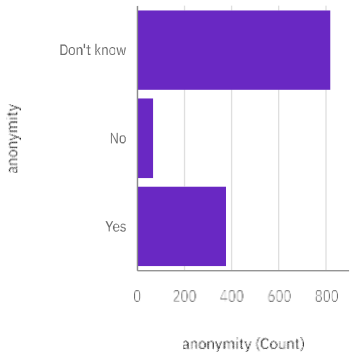
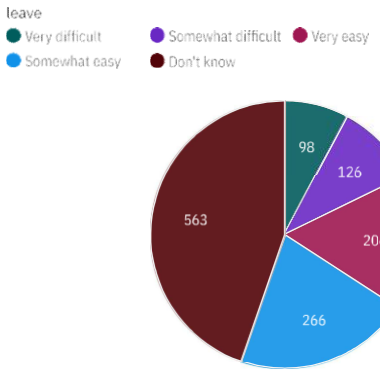
anonymity by anonymity



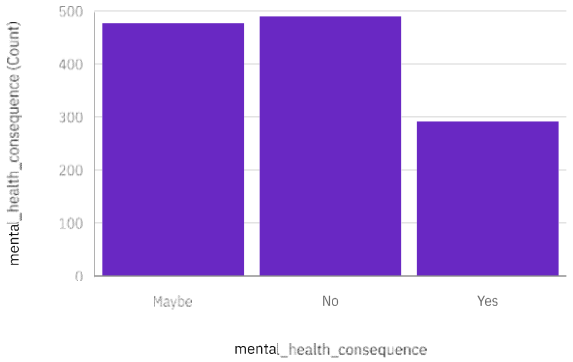
16

leave by leave



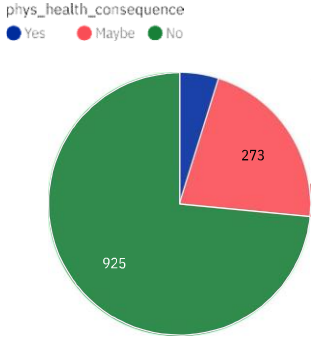
17

mental_health_consequence by mental_health_consequence



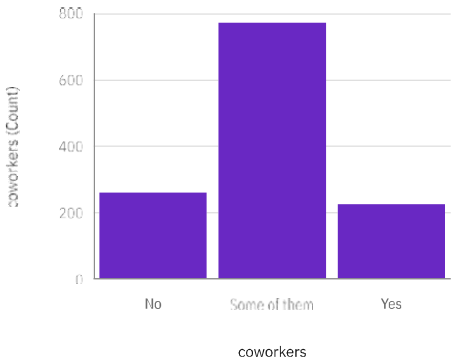
18

phys_health_consequence by phys_health_consequence

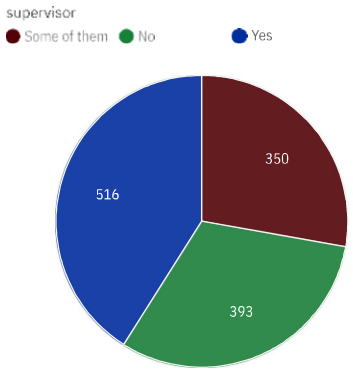


public health awerness campaign anaysis

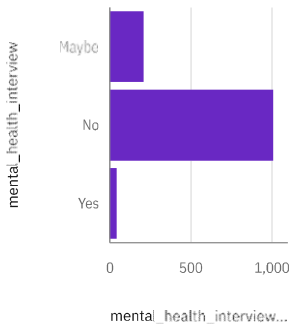
coworkers by coworkers 19



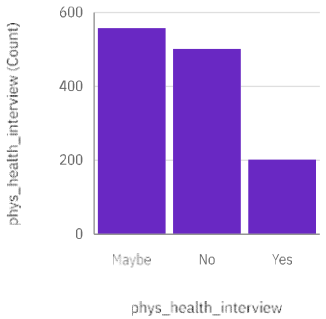
supervisor by supervisor 20



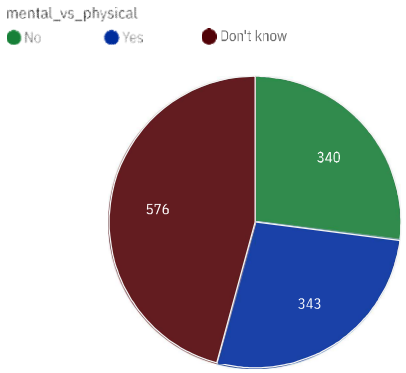
mental_health_interview by mental_health_interview 21



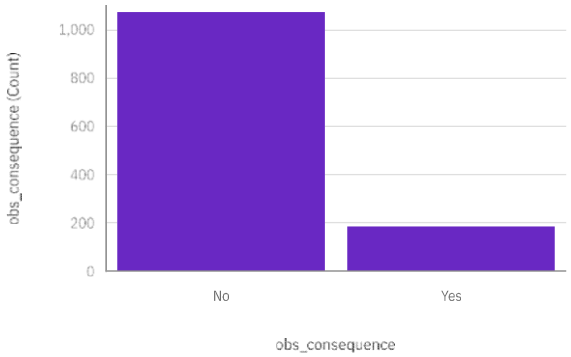
phys_health_interview by phys_health_interview 22



mental_vs_physical by mental_vs_physical 23



obs_consequence by obs_consequence 24



Filter(s) applied to the visualization(s):

Widget 1
Gender Includes: A little about you, Agender, All, Androgyne, Cis Female, Cis Male, Cis Man, Enby, F, Femake, Female, Female (cis), Female (trans), Genderqueer, Guy (-ish) ^_^, M, Mail, Make, Mal, Male, Male (CIS), Male-ish, Malr, Man, Nah, Neuter, Trans woman, Trans-female, Woman, cis male, cis-female/femme, f, femail, female, fluid, m, maile, male, male leaning androgynous, msle, non-binary, ostensibly male, unsure what that really means, p, queer, queer/she/they, something kinda male?, woman
treatment Includes: Yes

Widget 2
Country Includes: Australia, Austria, Bahamas, The, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, China, Canada, Colombia, Costa Rica, Croatia, Czech Republic, Denmark, Finland, France, Georgia, Germany, Greece, Hungary, India, Ireland, Israel, Italy, Japan, Latvia, Mexico, Moldova, Netherlands, New Zealand, Nigeria, Norway, Philippines, Poland, Portugal, Romania, Russia, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, United Kingdom, Uruguay, Zimbabwe, United States
treatment Includes: Yes

Widget 3
state Includes: AL, AZ, CA, CO, CT, DC, FL, GA, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NA, NC, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY
treatment Includes: Yes

Widget 4
self_employed Includes: NA, No, Yes
treatment Includes: Yes

Widget 5
family_history Includes: No, Yes
treatment Includes: Yes

Widget 6
treatment Includes: No, Yes
treatment Includes: Yes

Widget 7
work_interfere Includes: NA, Never, Often, Rarely, Sometimes

Widget 8
no_employees Includes: 1-5, 100-500, 26-100, 500-1000, 6-25, More than 1000

Widget 9
remote_work Includes: No, Yes

Widget 10
tech_company Includes: No, Yes

Widget 11
benefits Includes: Don't know, No, Yes

Widget 12
care_options Includes: Not sure, No, Yes

Widget 13

wellness_program Includes: Don't know, No, Yes

Widget 14
seek_help Includes: Don't know, No, Yes

Widget 15
anonymity Includes: Don't know, No, Yes

Widget 16
leave Includes: Don't know, Somewhat difficult, Somewhat easy, Very difficult, Very easy

Widget 17
mental_health_consequence Includes: Maybe, No, Yes

Widget 18
phys_health_consequence Includes: No, Maybe, Yes

Widget 19
coworkers Includes: No, Some of them, Yes

Widget 20
supervisor Includes: No, Some of them, Yes

Widget 21
mental_health_interview Includes: Maybe, No, Yes

Widget 22
phys_health_interview Includes: Maybe, No, Yes

Widget 23
mental_vs_physical Includes: Don't know, No, Yes

Widget 24
obs_consequence Includes: No, Yes