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## ADV EXPERIMENT 3

### DATASET :

Stroke dataset - <https://www.kaggle.com/datasets/fedesoriano/stroke-prediction-dataset>

### DATASET DESCRIPTION :

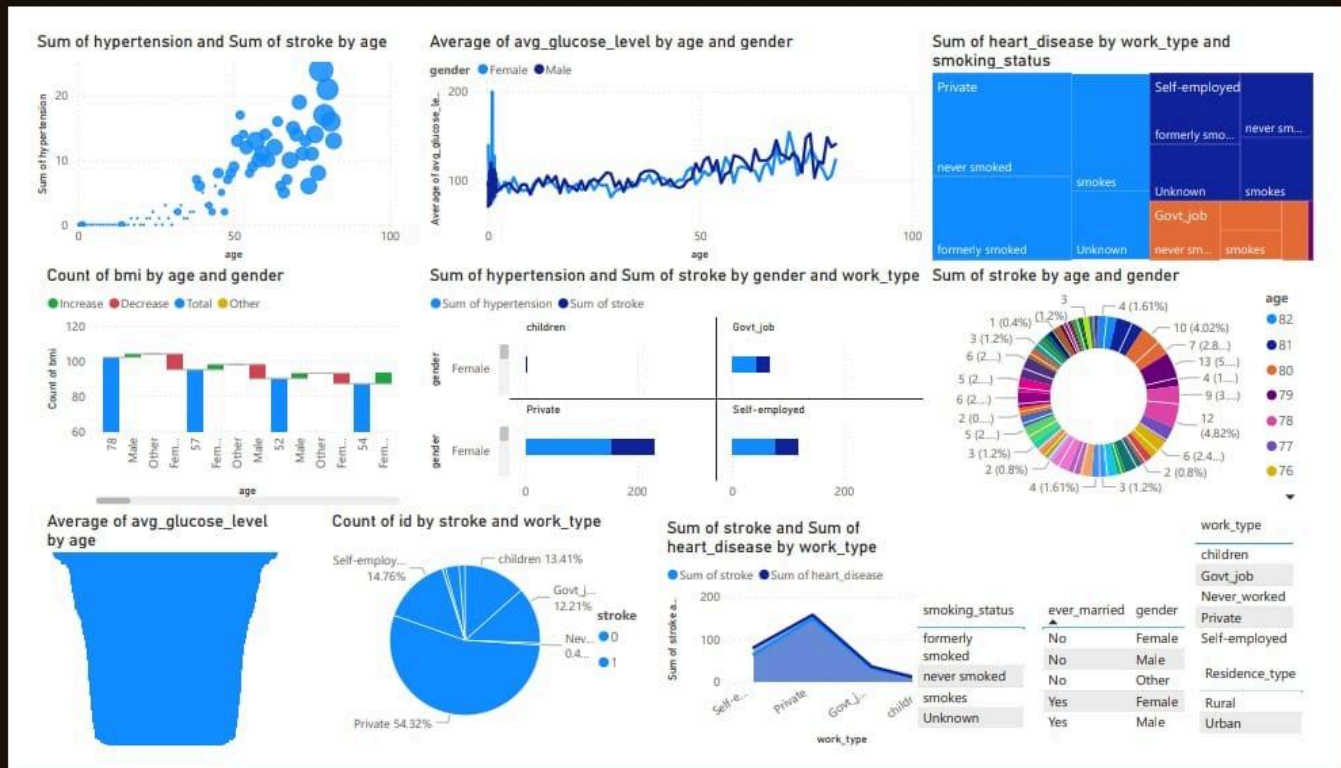
According to the World Health Organization (WHO) stroke is the 2nd leading cause of death globally, responsible for approximately 11% of total deaths.

This dataset is used to predict whether a patient is likely to get a stroke based on the input parameters like gender, age, various diseases, and smoking status. Each row in the data provides relevant information about the patient.

#### Attribute Information-

- 1) id: unique identifier
- 2) gender: "Male", "Female" or "Other"
- 3) age: age of the patient
- 4) hypertension: 0 if the patient doesn't have hypertension, 1 if the patient has hypertension
- 5) heart\_disease: 0 if the patient doesn't have any heart diseases, 1 if the patient has a heart disease
- 6) ever\_married: "No" or "Yes"
- 7) work\_type: "children", "Govt\_jov", "Never\_worked", "Private" or "Self-employed"
- 8) Residence\_type: "Rural" or "Urban"
- 9) avg\_glucose\_level: average glucose level in blood
- 10) bmi: body mass index
- 11) smoking\_status: "formerly smoked", "never smoked", "smokes" or "Unknown"
- 12) stroke: 1 if the patient had a stroke or 0 if not

## REPORT :



**Q.** What does the chart of average glucose level by age and gender reveal?

**Ans.** The chart shows the relationship between age and the average glucose level for both males and females. As age increases, the average glucose level appears to rise gradually for both genders, though the differences between males and females are not extremely pronounced.

**Q.** What inference can be drawn from the sum of stroke and heart disease by work type?

**Ans.** The chart suggests that people in private jobs have a higher incidence of both strokes and heart disease compared to those in other work types, such as government jobs, self-employment, or children. The trend implies a potential correlation between job type and cardiovascular health risks.

**Q.** How does smoking status affect heart disease by work type?

**Ans.** The chart analyzing heart disease by work type and smoking status shows that individuals in private and self-employed jobs who smoke or have formerly smoked have a higher prevalence of heart disease compared to those who have never smoked. This indicates that both smoking status and job type contribute to cardiovascular risk.

**Q.** What does the BMI by age and gender tell us?

**Ans.** The BMI distribution across different age groups and genders reveals that BMI counts increase with age, particularly among males. It suggests that older males tend to have higher BMIs, though the variation among genders is apparent across different age brackets.

**Q.** What insight can be drawn from the sum of strokes by age and gender?

**Ans.** The visualization of strokes by age and gender shows that strokes are more common in older individuals, particularly among men. The percentage of strokes increases with age, with men aged 78 and older showing a higher stroke rate than their female counterparts.

**Q.** What does the sum of hypertension and stroke by gender and work type indicate?

**Ans.** The chart indicates that the sum of hypertension and strokes is higher in females working in private or self-employed jobs compared to those in government jobs or among children. This suggests a potential link between occupation type and the prevalence of hypertension and strokes, particularly among women.

**Q.** What can be inferred from the count of strokes by work type?

**Ans.** The chart reveals that the majority of strokes occur among individuals working in private jobs (54.32%), followed by self-employed individuals and those in government jobs. This suggests a greater stroke risk associated with private employment.

## **CONCLUSION :**

- By using charts and graphs in PowerBi, I was able to make many interpretations based on visualization of data in many aspects.
- We can say that older males are more prone to higher BMI, strokes, and hypertension, while females in private jobs also face significant health risks.
- Individuals in private and self-employed jobs show a higher incidence of strokes and heart disease, especially among smokers.
- Smoking and aging are key contributors to increased cardiovascular issues, as seen in the data.