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Title: Design Interactive Dashboard and storytelling using Power BI /Python.

Aim: Create interactive dashboard - Write observations from each chart given below (Advanced - Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, Jitter, Line, Area, Waterfall, Donut, Treemap, Funnel . Basic - Bar chart, Pie chart, Histogram, Timeline chart, Scatter plot, Bubble plot)

## Dataset:

# Heart Disease prediction

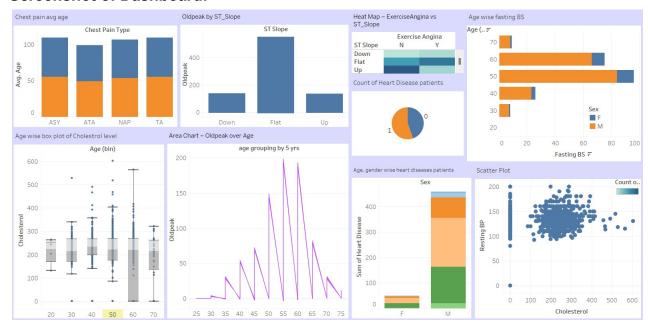
#### Columns:

	Age	Sex	ChestPainType		RestingBP	Cholesterol	FastingBS	RestingECG	MaxHR	1
0	40	М	ATA		140	289	0	Normal	172	
1	49	F		NAP	160	180	0	Normal	156	
2	37	М		ATA	130	283	0	ST	98	
3	48	F		ASY	138	214	0	Normal	108	
4	54	М		NAP	150	195	0	Normal	122	
	Exer	xerciseAngina		01dpeak	ST_Slope	HeartDisease				
0			N	0.0	Up	0				
1			N	1.0	Flat	1				
2			N	0.0	Up	0				
3			Y	1.5	Flat	1				
4			N	0.0	Up	0				

- Age: age of the patient [years]
- Sex: sex of the patient [M: Male, F: Female]
- ChestPainType: chest pain type [0: Typical Angina, 1: Atypical Angina, 2: Non-Anginal Pain, 3: Asymptomatic]
- RestingBP: resting blood pressure [mm Hg]
- Cholesterol: serum cholesterol [mm/dl]
- FastingBS: fasting blood sugar [1: if FastingBS > 120 mg/dl, 0: otherwise]
- RestingECG: resting electrocardiogram results [0: Normal, 1: having ST-T wave abnormality (T wave inversions and/or ST elevation or depression of > 0.05 mV),
  2: showing probable or definite left ventricular hypertrophy by Estes' criteria]
- MaxHR: maximum heart rate achieved [Numeric value between 60 and 202]
- ExerciseAngina: exercise-induced angina [1: Yes, 0: No]
- Oldpeak: oldpeak = ST [Numeric value measured in depression]

- ST\_Slope: the slope of the peak exercise ST segment [0: upsloping, 1: flat, 2: downsloping]
- HeartDisease: output class [1: heart disease, 0: Normal]

#### Screenshot of Dashboard:



## **Observations:**

- Chest Pain Avg Age:
  - The average age for different chest pain types is roughly similar across categories, with the highest in the ASYtype.
- Oldpeak by ST Slope:
  - Patients with a flat ST Slope tend to have higher Oldpeak values compared to those with up or down slopes.
- Heat Map Exercise Angina vs ST Slope:
  Patients with a Up ST Slope and no exercise angina are more frequent, indicating a potential correlation between these variables.
- Age-Wise Fasting BS:
  - A higher count of people aged between 50–60 years have fasting blood sugar > 100 mg/dL, with more males affected.
- Age-Wise Box Plot of Cholesterol Levels:
  Cholesterol levels are more spread in older age groups (60–70) with more outliers compared to younger groups.
- Area Chart Oldpeak Over Age:
  Oldpeak values peak around ages 55–65, indicating higher ST depression levels during that period.

- Count of Heart Disease Patients:
  The pie chart shows a clear distribution of heart disease patients, with a higher number in one specific group.
- Age, Gender-Wise Heart Disease Patients:
  Males are significantly more affected by heart disease than females, particularly in the older age group.
- Scatter Plot Resting BP vs Cholesterol:
- There's a large cluster of individuals with cholesterol between 100–300 and resting blood pressure around 100–140, indicating common health parameters for the group.

### Conclusion:

In this practical, I learnt how to use healthcare dataset to create visualizations effectively and create stories from it as well create conclusions for future research.

Link: https://public.tableau.com/app/profile/yash.burad/viz/ADV3\_17259992533740/ Dashboar d1?publish=yes