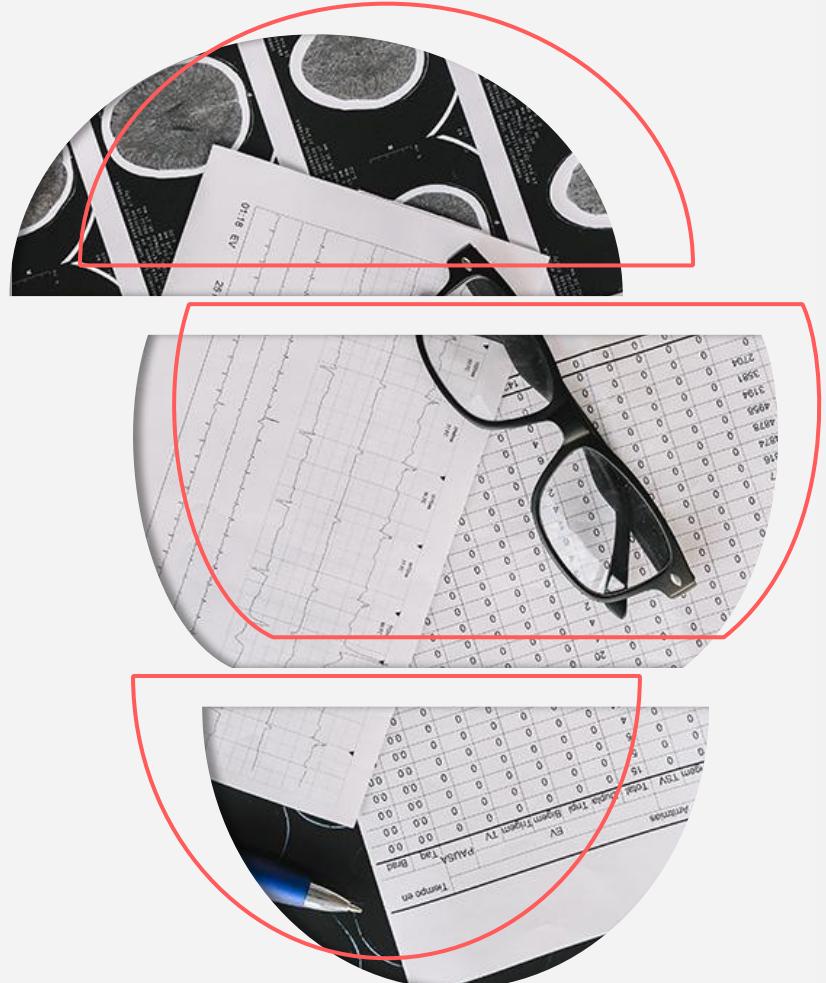




SAML

Medical Research

STROKE RESEARCH





SAML TEAM



**ANGELA
PACATTE**

Data Analyst,
Communications
Director



**KELSEY
CORCORAN**

Data Analyst,
Machine Learning
Engineer



**KATIE
HOPKINS**

Data Analyst,
Chief Marketing
Officer



**JACK
BAUER**

Data Analyst,
Chief Information
Officer



**BOWEN
WILDER**

Data Analyst,
Project Manager

TABLE OF CONTENTS

01

INTRODUCTION

- What is a Stroke?
- Symptoms of a Stroke

02

PURPOSE

- Why Choose This Topic?
- Questions We Want to Answer...

03

STROKE DATASET

- The Dataset
- Personal Indicators
- Medical Indicators
- EDA Findings

04

ML MODEL

- Analysis

05

TOOLS

- Project Framework
- Tableau Dashboard

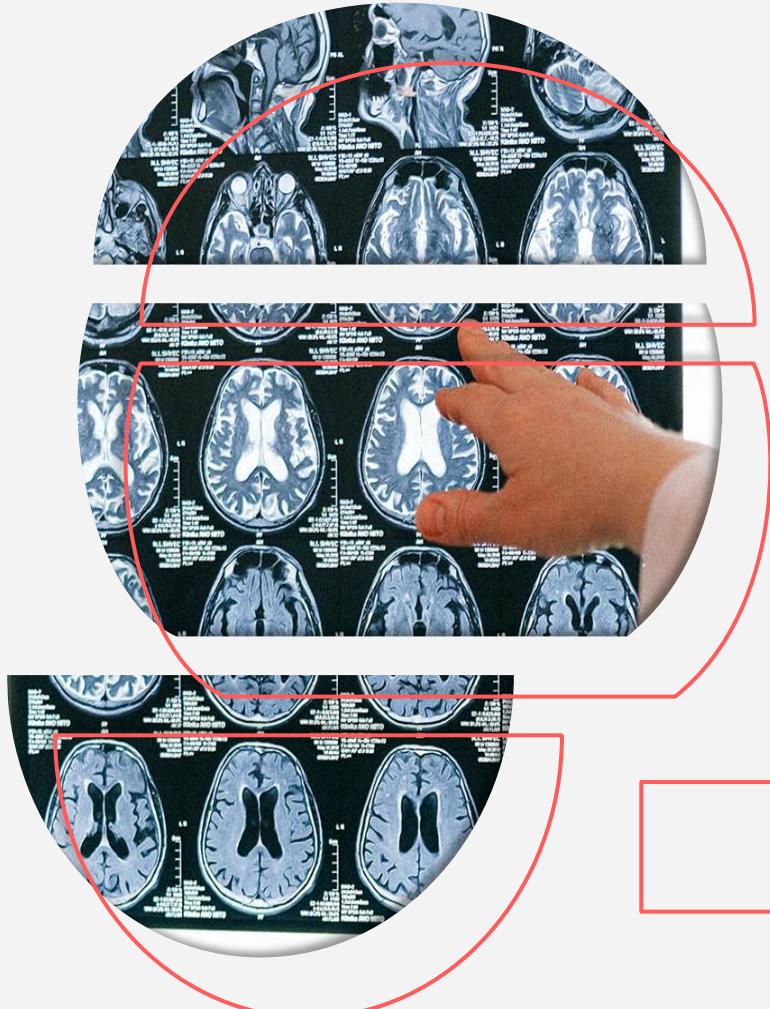
06

CONCLUSIONS

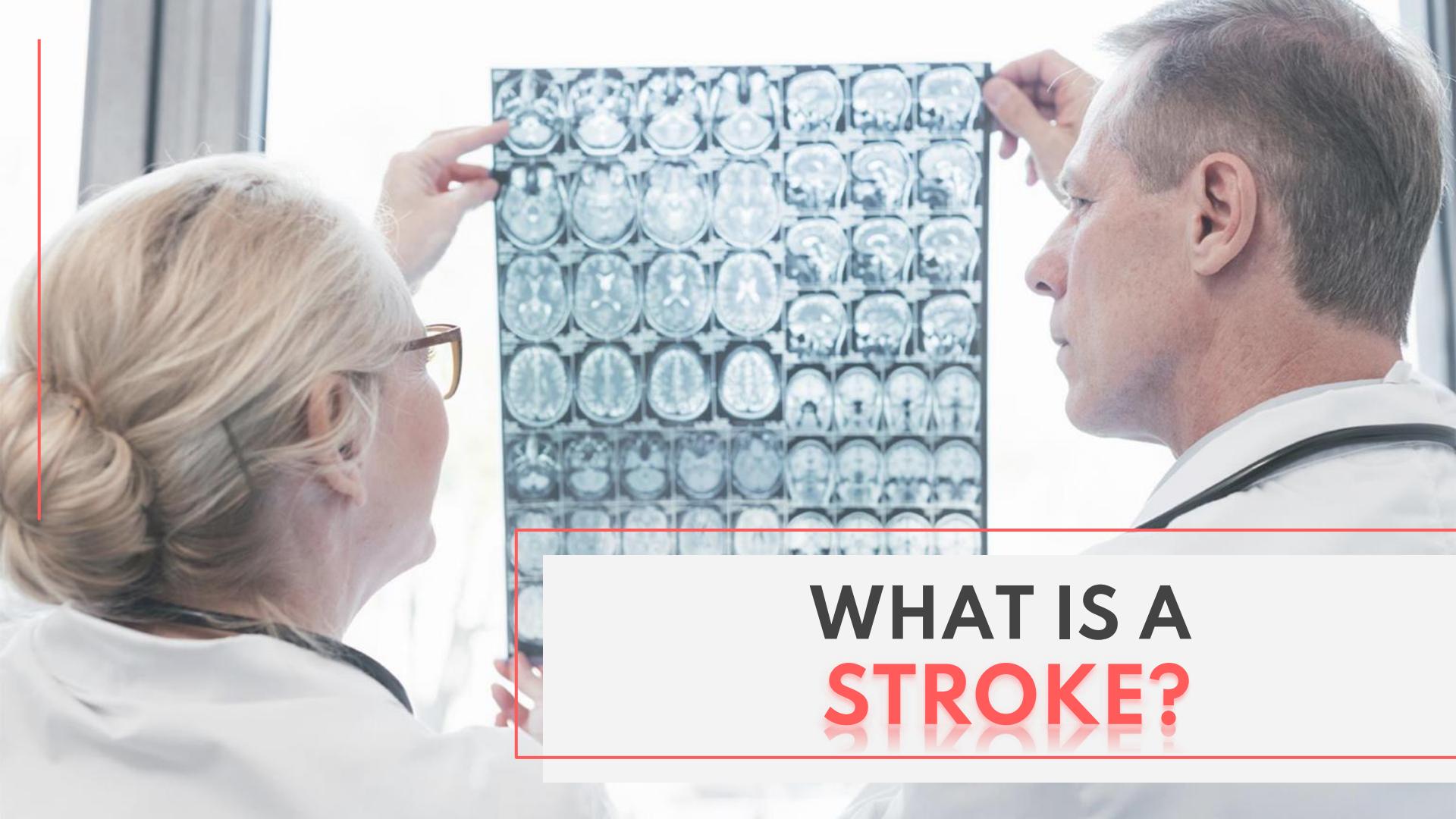
- Results
- Recomendations

01

INTRODUCTION



What is a stroke?
How do you detect a stroke?



WHAT IS A **STROKE?**

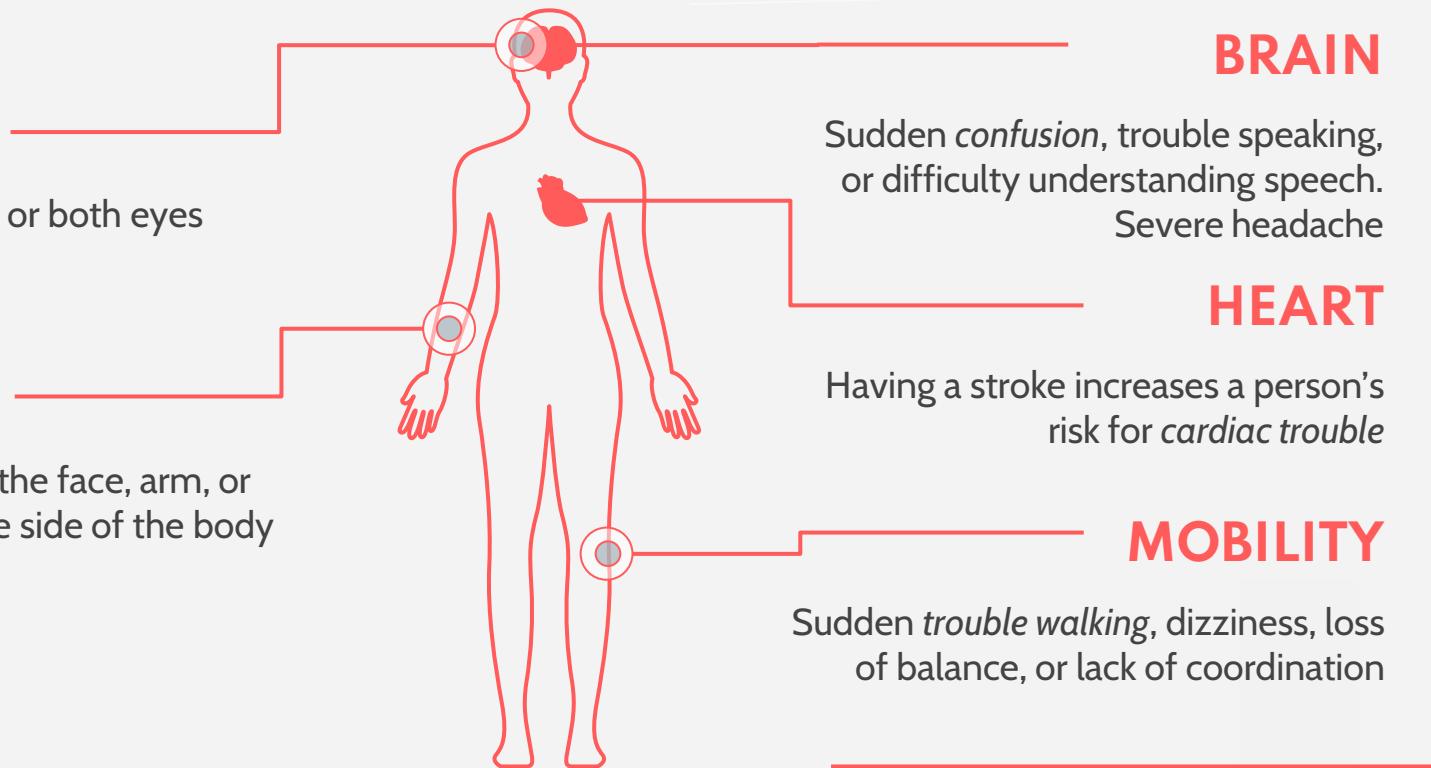
SYMPTOMS OF A STROKE

EYES

Trouble seeing in one or both eyes

NUMBNESS

Sudden weakness in the face, arm, or leg, especially on one side of the body



BRAIN

Sudden confusion, trouble speaking, or difficulty understanding speech.
Severe headache

HEART

Having a stroke increases a person's risk for cardiac trouble

MOBILITY

Sudden trouble walking, dizziness, loss of balance, or lack of coordination

02

PURPOSE



Why is predicting strokes important?
What do we hope to conclude?

WHY CHOOSE THIS TOPIC?



QUESTIONS TO ANSWER...



SUCCESS

Can our Machine Learning model be used to predict stroke risk?



ACCURACY

Which aspect is more accurate to predict risk:
Medical or Personal data?

03

STROKE DATA

What does the dataset include?
What were our initial findings?



STROKE DATASET

ID#	Gender	Age	Hypertension	Heart_Dise...	Avg_Glucose_Lvl	BMI	Ever_Married	Work_Type	Residence_Type	Smoker	Stroke
	str	int	int	int	float	float	str	str	str	str	int
1	Male	67	0	1	228.69	36.6	Yes	Private	Urban	Former	1
3	Male	80	0	1	105.92	32.5	Yes	Private	Rural	Never	1
4	Female	49	0	0	171.23	34.4	Yes	Private	Urban	Current	1
5	Female	79	1	0	174.12	24.0	Yes	Self-employed	Rural	Never	1
6	Male	81	0	0	186.21	29.0	Yes	Private	Urban	Former	1
7	Male	74	1	1	70.09	27.4	Yes	Private	Rural	Never	1
8	Female	69	0	0	94.39	22.8	No	Private	Urban	Never	1
10	Female	78	0	0	58.57	24.2	Yes	Private	Urban	Unknown	1
11	Female	81	1	0	80.43	29.7	Yes	Private	Rural	Never	1
12	Female	61	0	1	120.46	36.8	Yes	Govt_job	Rural	Current	1

Shape
(5,109, 12)

Features
Categorical: 8
Numerical: 3

Missing Values
201 NaNs in "BMI" column

All Criteria
Medical Criteria
Personal Criteria

PERSONAL CRITERIA



AGE

From birth to 82 years of age



GENDER

Male or Female



EVER MARRIED

Yes or No



WORK TYPE

Government, Private, Self-Employed,
& Raise Children



RESIDENCE TYPE

Rural or Urban



SMOKING STATUS

Current, Former, Never,
& Unknown

MEDICAL CRITERIA



AGE

From birth to 82 years of age



GENDER

Male or Female



HYPERTENSION

Yes or No



HEART DISEASE

Yes or No



AVG GLUCOSE LVL

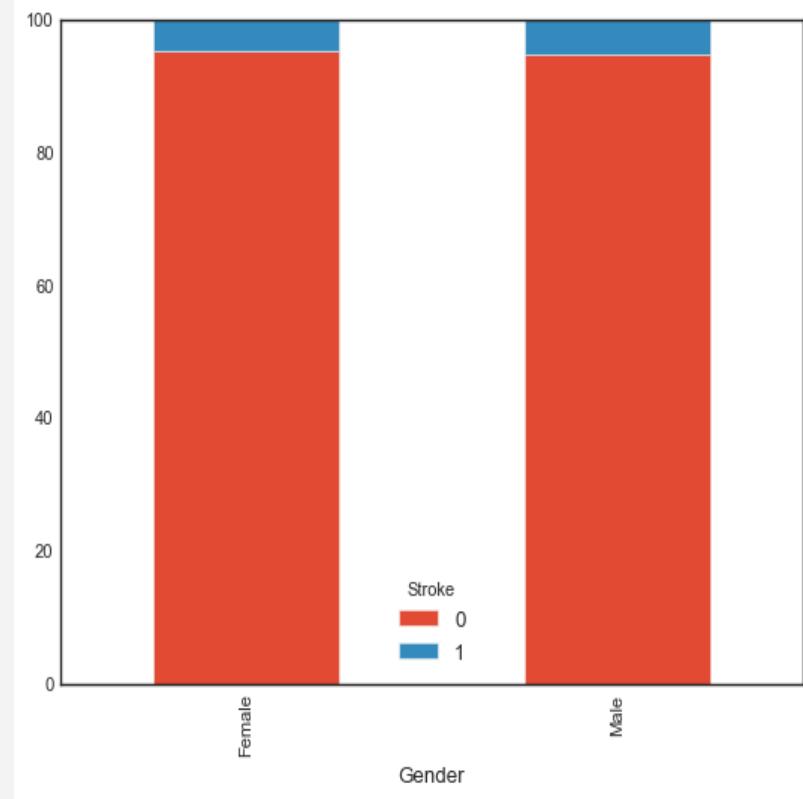
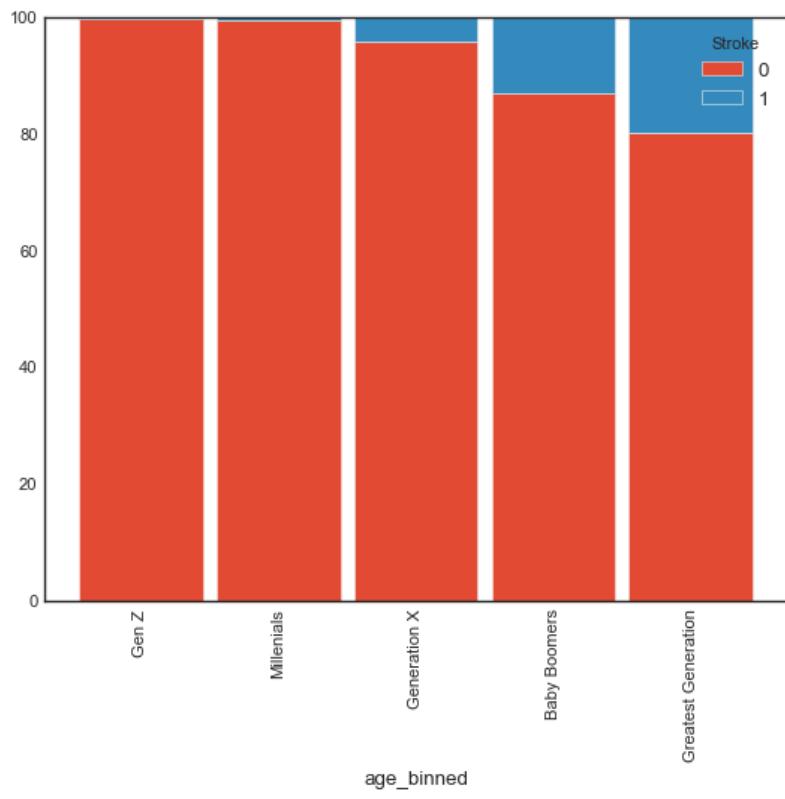
From 55 to 268



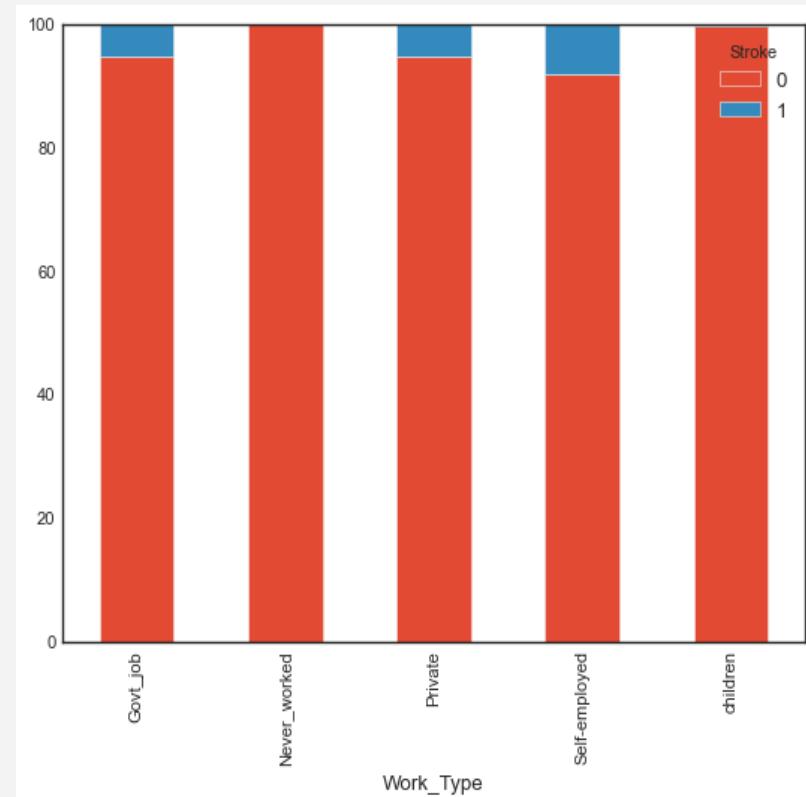
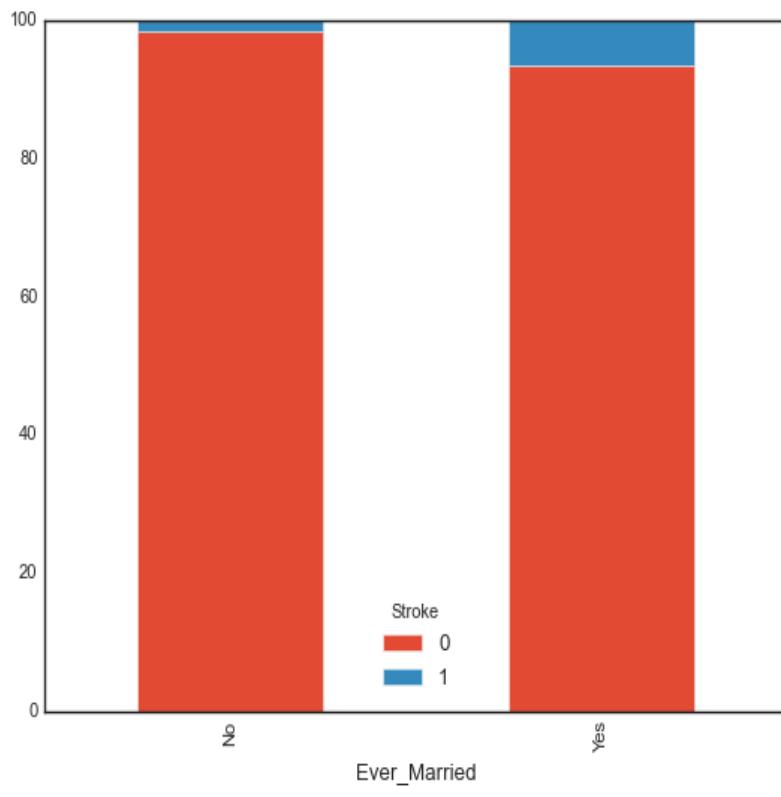
BMI

From 10 to 98

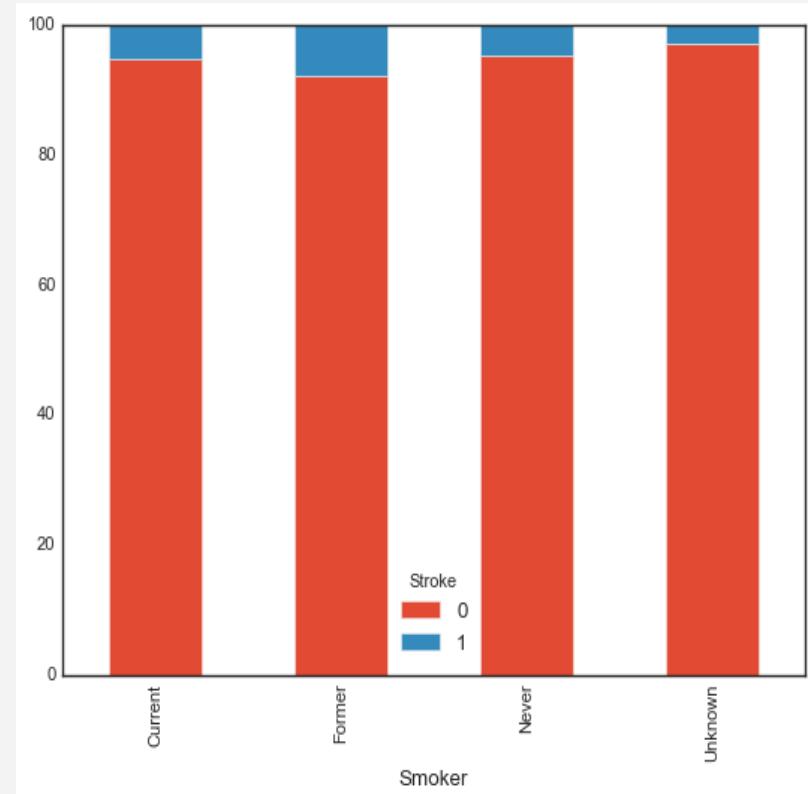
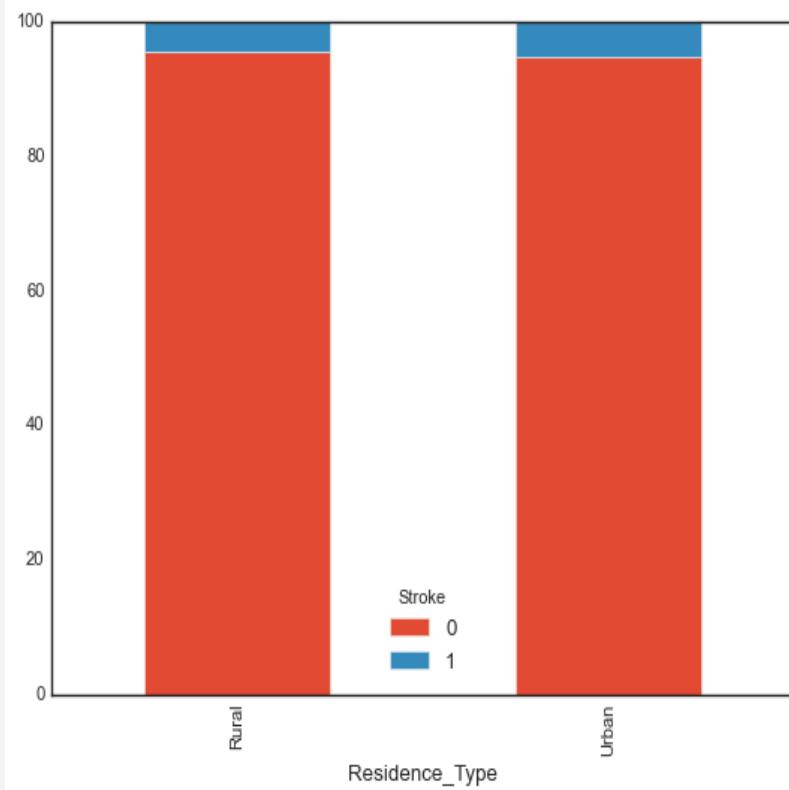
DEMOGRAPHIC ANALYSIS



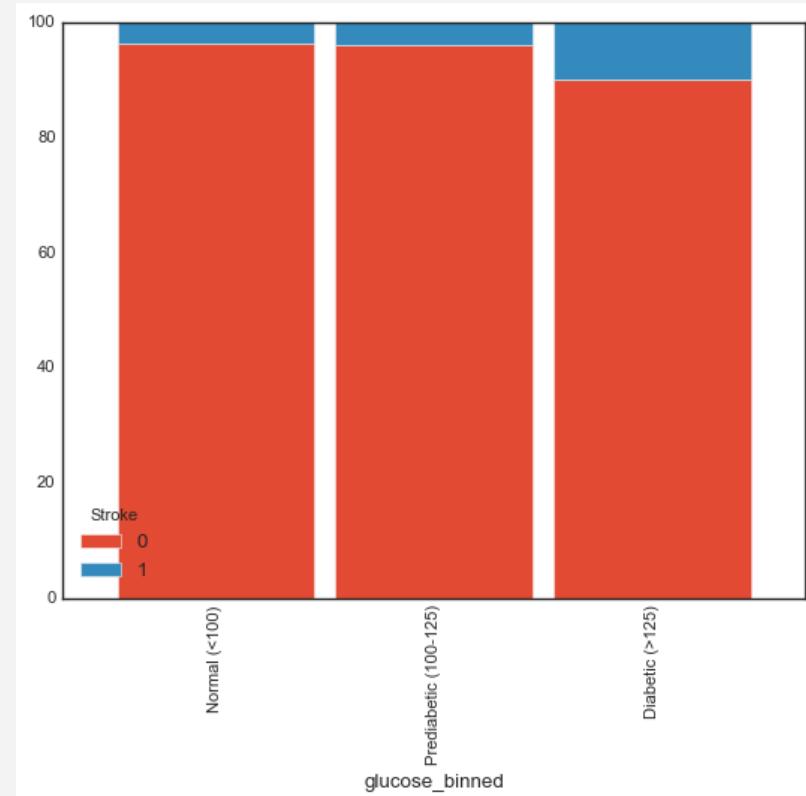
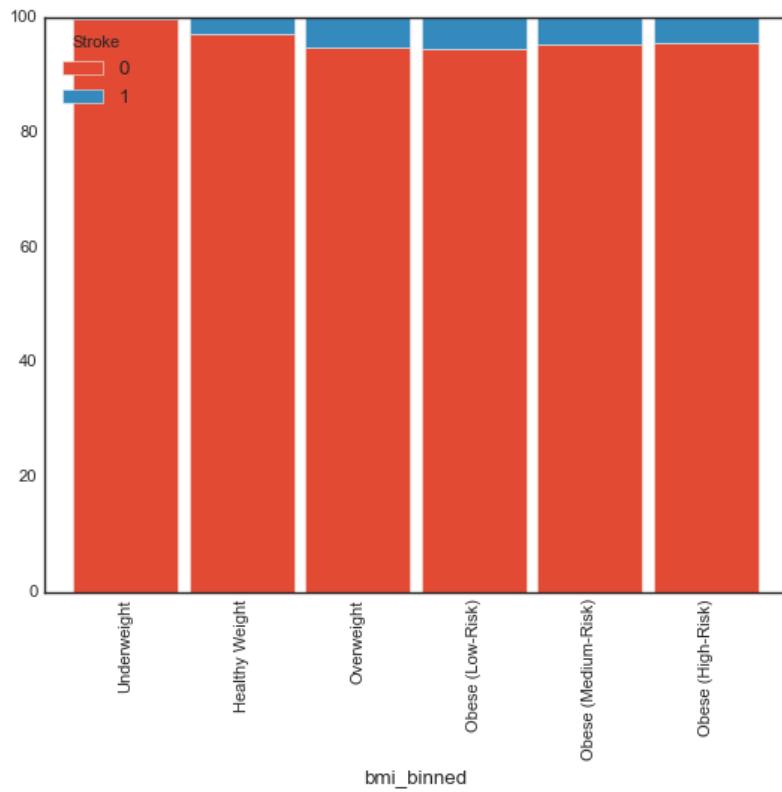
PERSONAL ANALYSIS



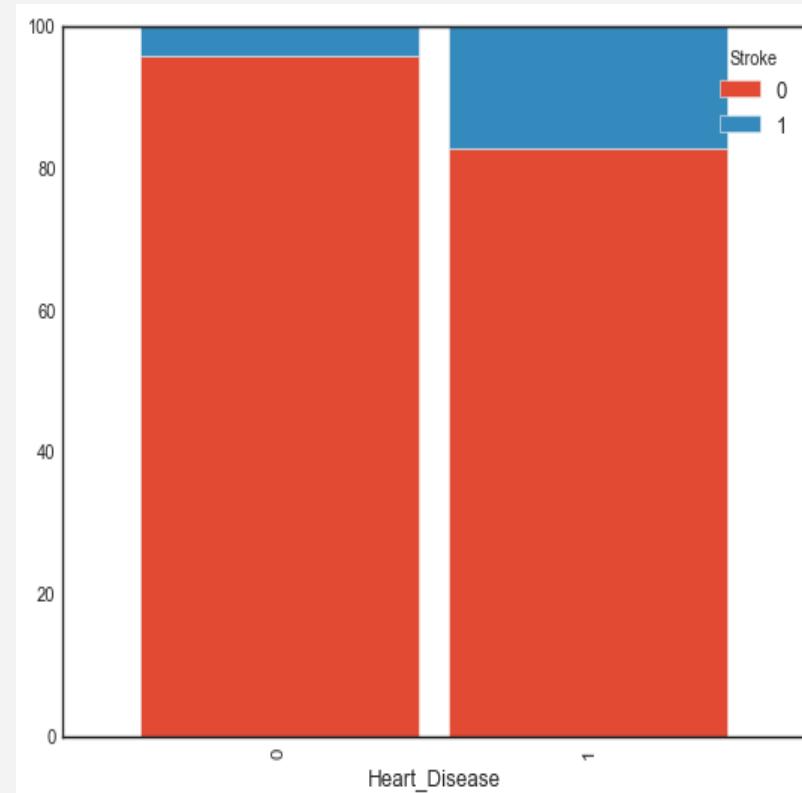
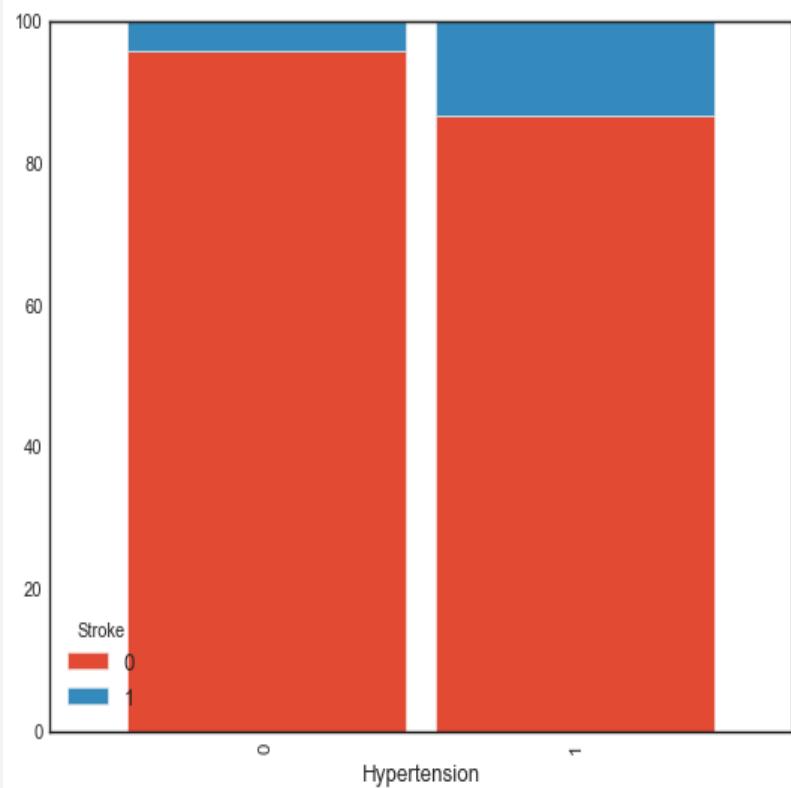
PERSONAL ANALYSIS



MEDICAL ANALYSIS



MEDICAL ANALYSIS



EDA SUMMARY

Demographics

Stroke risk increases among patients that:

- are greater in “Age”
- * Stroke risk between “Genders” is undetermined from the dataset

Personal

Stroke risk increases among patients that:

- Were married at one point in time
- “Self-Employed”, “Private” and “Government” employed workers
- Were “Current” or “Former” smokers

Medical

Stroke risk increases among patients that:

- Are “Overweight” or “Obese”
- Have “Diabetes”
- Have “Hypertension”
- Have “Heart Disease”

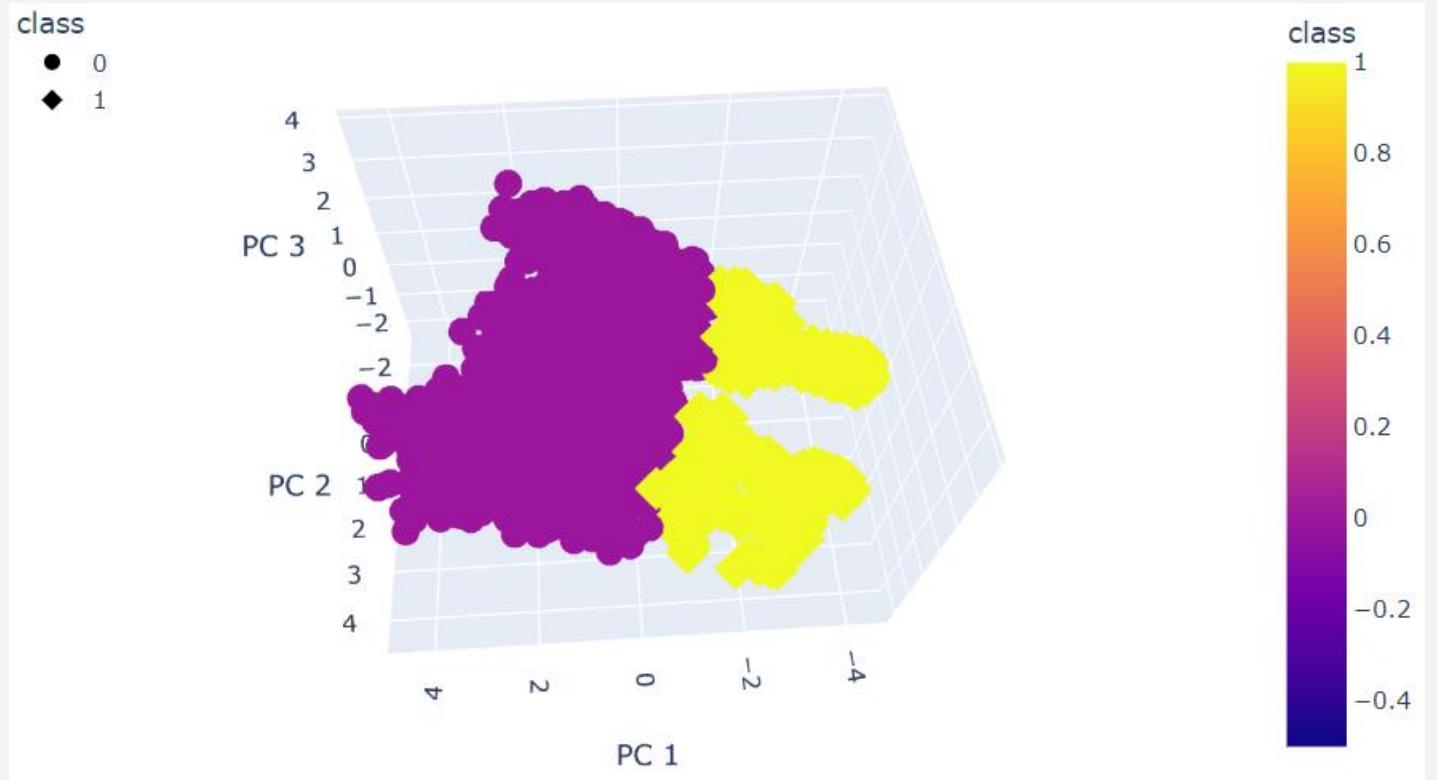
04

ML MODEL





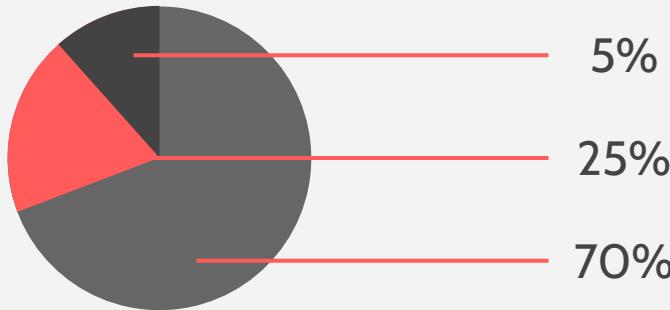
ANALYSIS



ANALYSIS

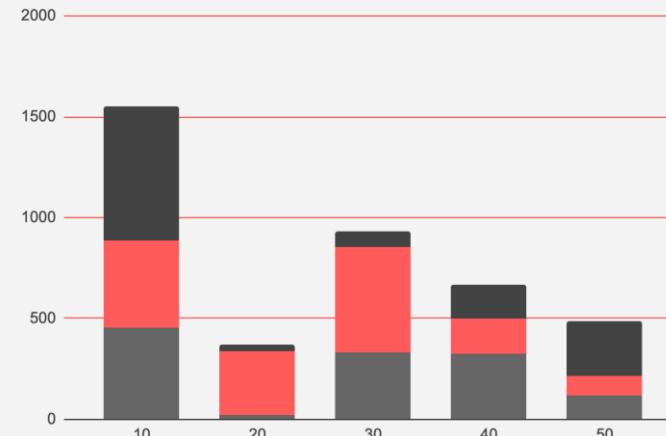
● Pluto ● Sun ● Jupiter

EVOLUTION



120,000,000
Important number

PREVALENCE



Follow the link in the graph to modify its data and then paste the new one here. [For more info, click here](#)

9h 55m 23s

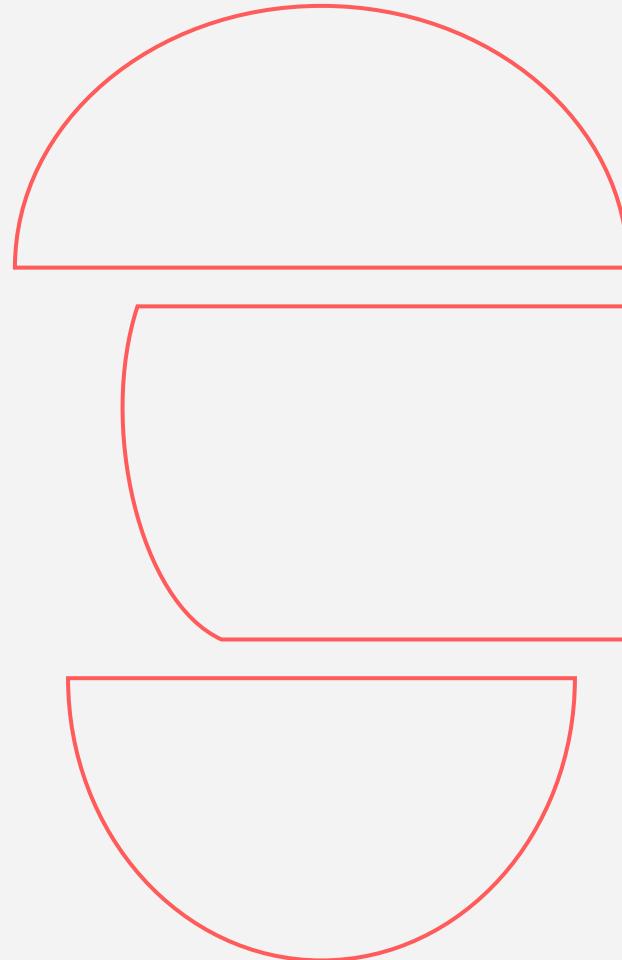
Is Jupiter's rotation period

333,000,000

Earths is the Sun's mass

386,000 km

Is the distance between Earth and the Moon



RECOMMENDATIONS

STEP 1

Venus is the second planet from the Sun



STEP 3

Despite being red, Mars is a cold place



STEP 2

Mercury is the smallest planet

STEP 4

Neptune is very far from the Sun

EDA FINDINGS

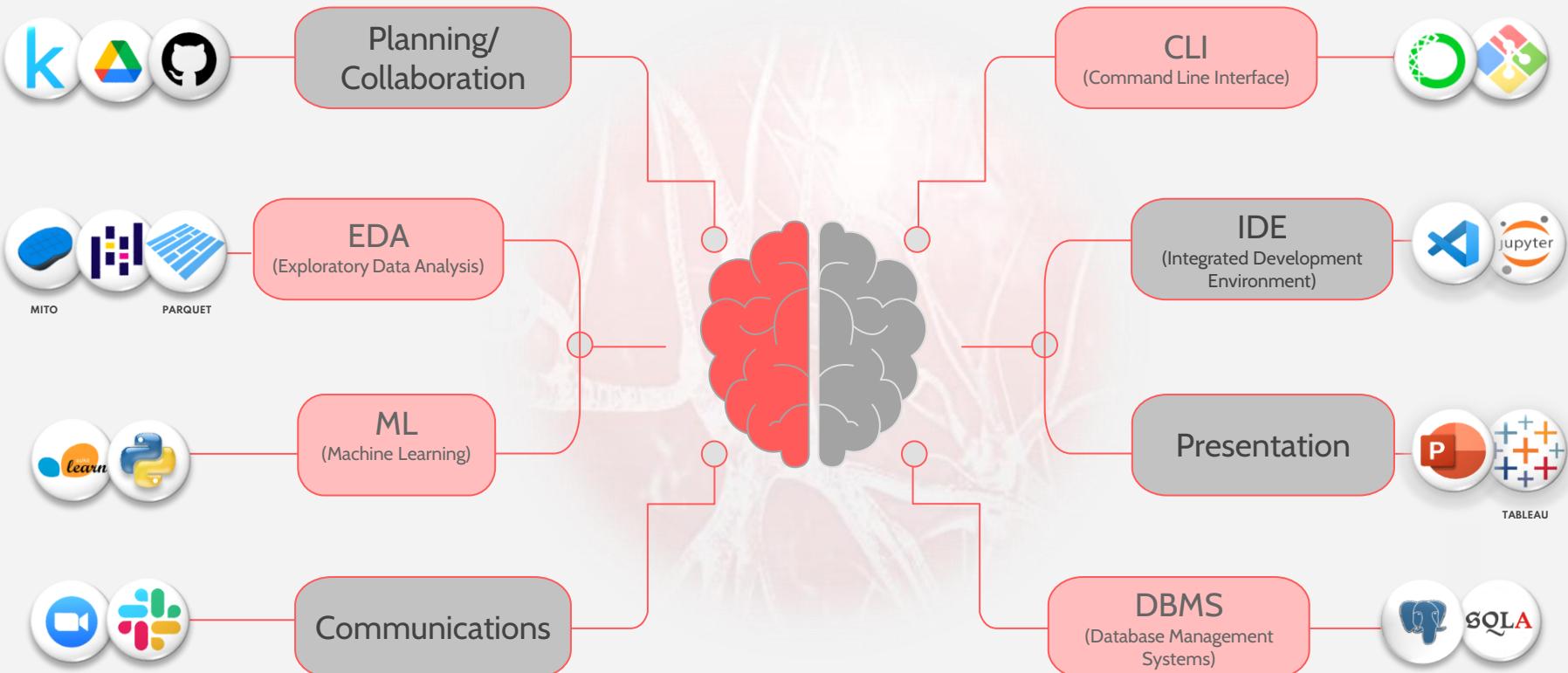
	Pandas	PostgreSQL
Mercury		
Venus		
Mars		
Saturn		

05

TOOLS



PROJECT FRAMEWORK



06

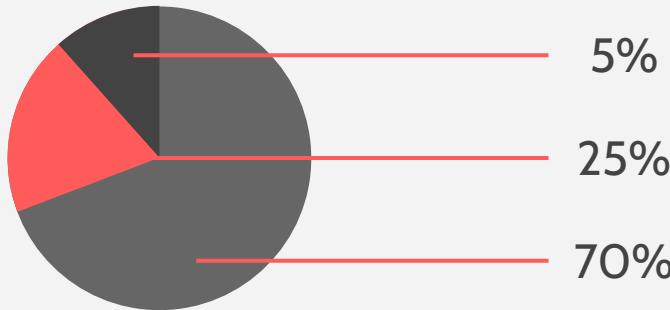
CONCLUSIONS



RESULTS

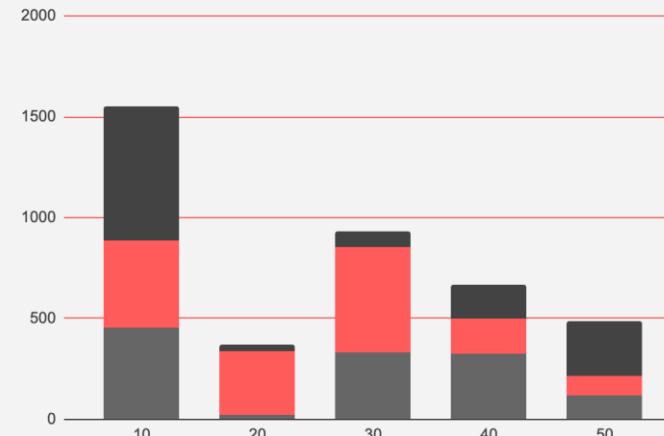
● Pluto ● Sun ● Jupiter

EVOLUTION



120,000,000
Important number

PREVALENCE



Follow the link in the graph to modify its data and then paste the new one here. [For more info, click here](#)

9h 55m 23s

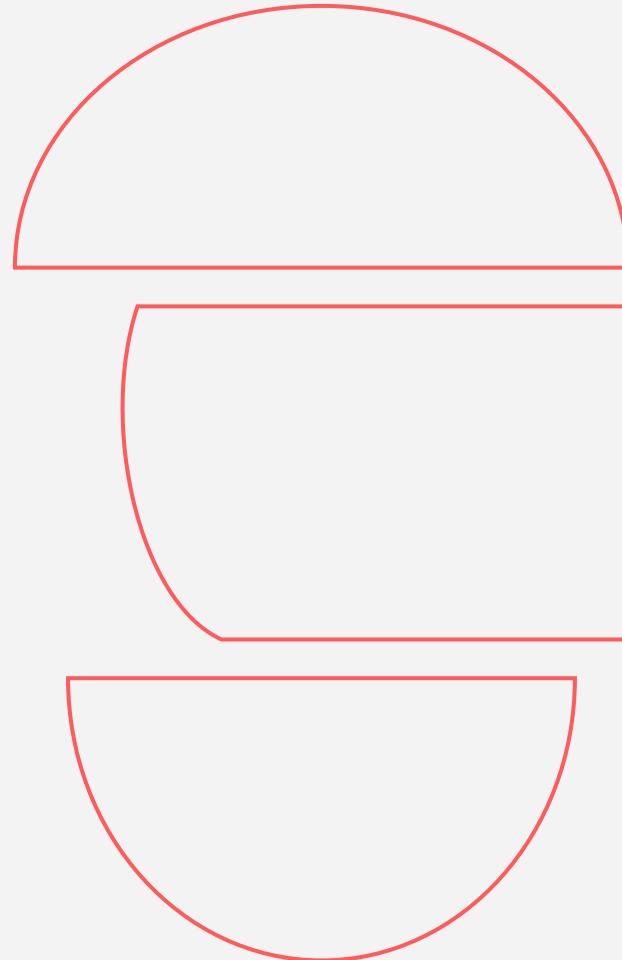
Is Jupiter's rotation period

333,000,000

Earths is the Sun's mass

386,000 km

Is the distance between Earth and the Moon



WHAT WOULD WE HAVE DONE DIFFERENTLY?

1. Find a dataset with more datapoints (specifically one with more positive stroke cases)
2. Exhaust options for ML Models
3. Go deeper into finding correlations between features/combination-of-features with target
4. Attempt a Supervised ML model first and not focus so intently on supervised models
5. Attempt a Deep Learning model as we believe it would be well suited for this dataset
6. Develop a webpage using Javascript that allows users to input their information and assess their personal stroke risk

THANKS!

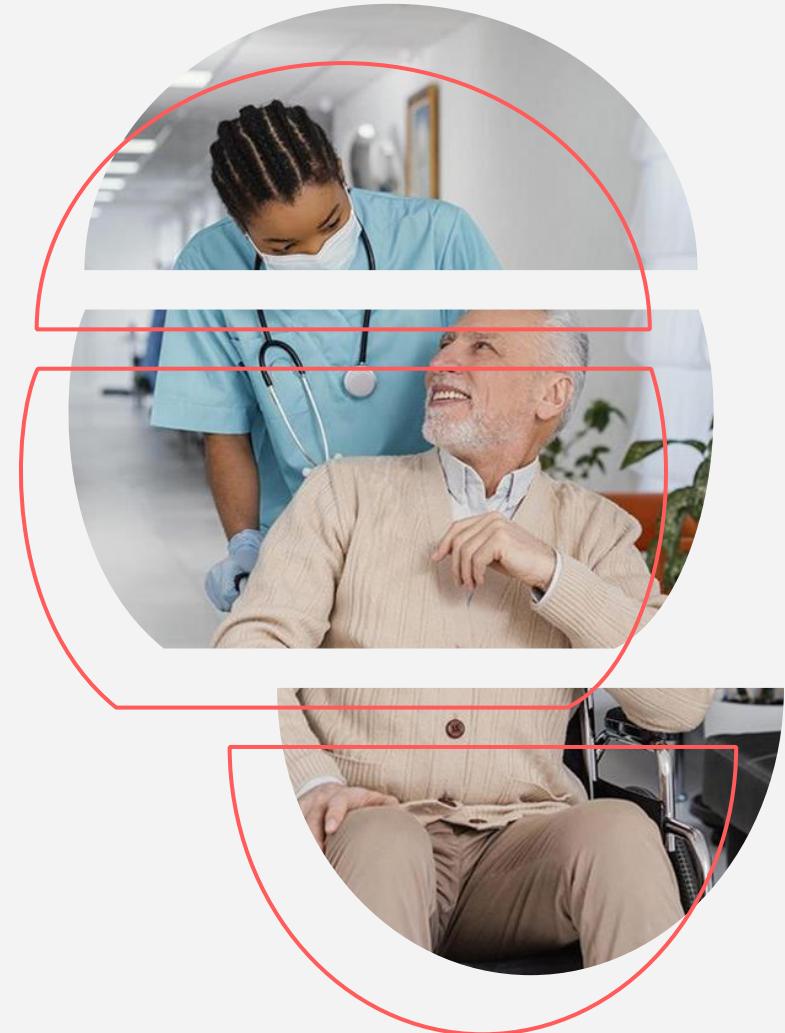


DO YOU HAVE ANY QUESTIONS?

info@SAML.com

+1 512 555 SAML

https://github.com/boborodono/San_Antonio

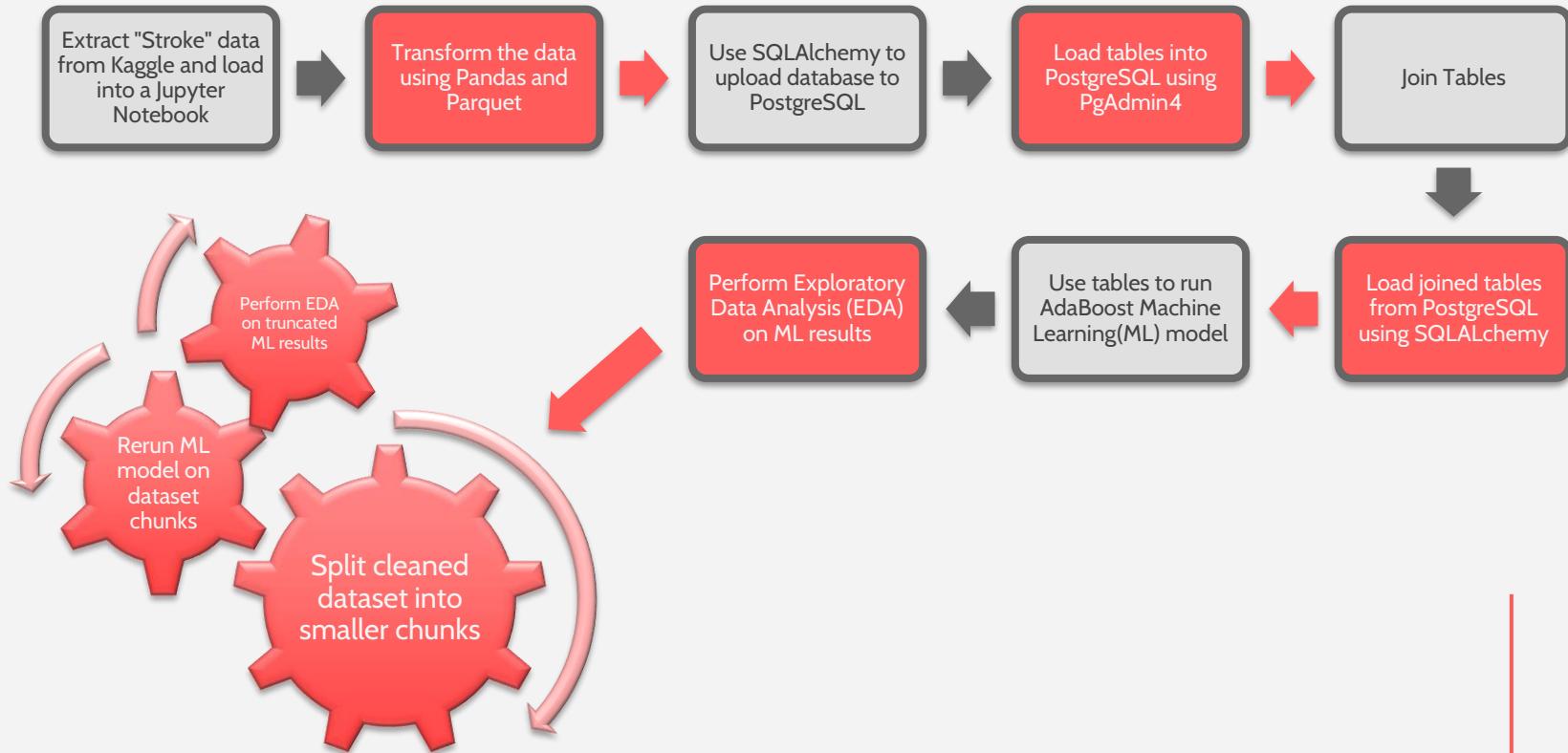




**END OF
SLIDE DECK**

PROJECT OUTLINE

PROJECT OUTLINE



TECHNOLOGIES

Languages	Tools	Collaboration & Storage	Communications	CLIs	IDEs	Presentation/Dashboard
 PYTHON	 PANDAS	 GOOGLE DRIVE	 SLACK	 ANACONDA	 JUPYTER NOTEBOOK	 TABLEAU
 POSTGRESQL	 MITO	 GITHUB	 ZOOM	 GITBASH	 VS CODE	 POWERPOINT
	 PARQUET	 KAGGLE			 PgADMIN	
	 SCIKIT-LEARN	 GIT				
 SQLALCHEMY						



Fonts & colors used

This presentation has been made using the following fonts:

Spartan

(<https://fonts.google.com/specimen/Spartan>)

Cabin

(<https://fonts.google.com/specimen/Cabin>)

#434343

#f3f3f3

#ff5b5b

#666666

**END OF
FONTS &
COLOR**

ABOUT THE DISEASE...



RECOMMENDATIONS

NEPTUNE

Mercury is the closest planet to the Sun and the smallest one



JUPITER

Venus has a beautiful name and is the second planet from the Sun



Despite being red, Mars is actually a cold place. It's full of iron oxide dust



Saturn is a gas giant and has several rings. It's composed of hydrogen



RECOMMENDATIONS

STEP 1

Venus is the second planet from the Sun



STEP 3

Despite being red, Mars is a cold place



STEP 2

Mercury is the smallest planet

STEP 4

Neptune is very far from the Sun

CONCLUSIONS

Do you know what helps you make your point clear?

Lists like this one:

- They're simple
- You can organize your ideas clearly
- You'll never forget to buy milk!

And the most important thing: the audience won't miss the point of your presentation

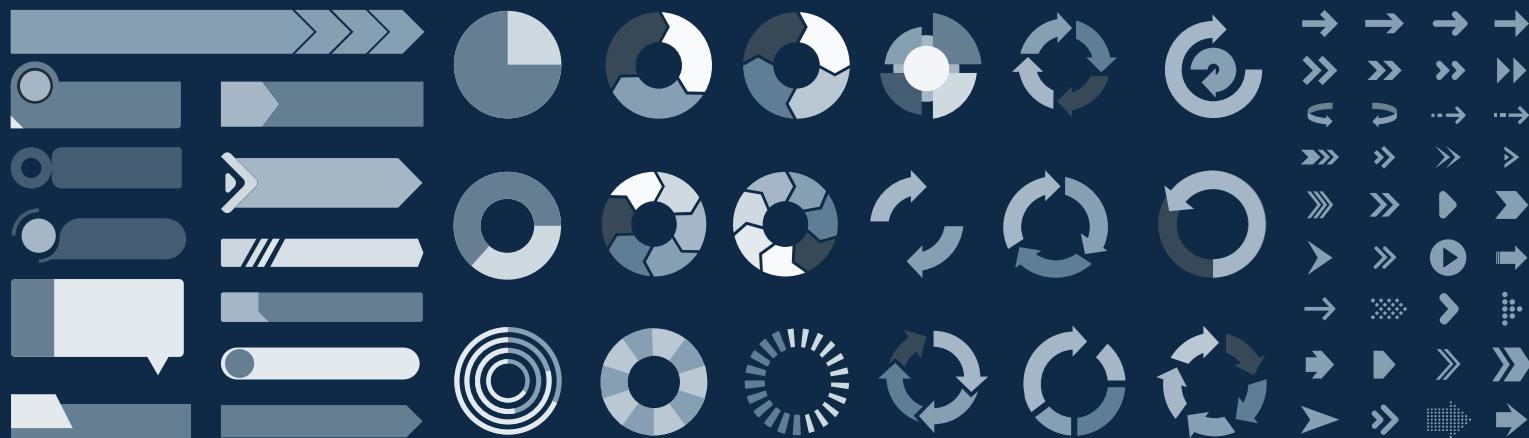


WRLD. CANCER AWRNSS. DAY PACK

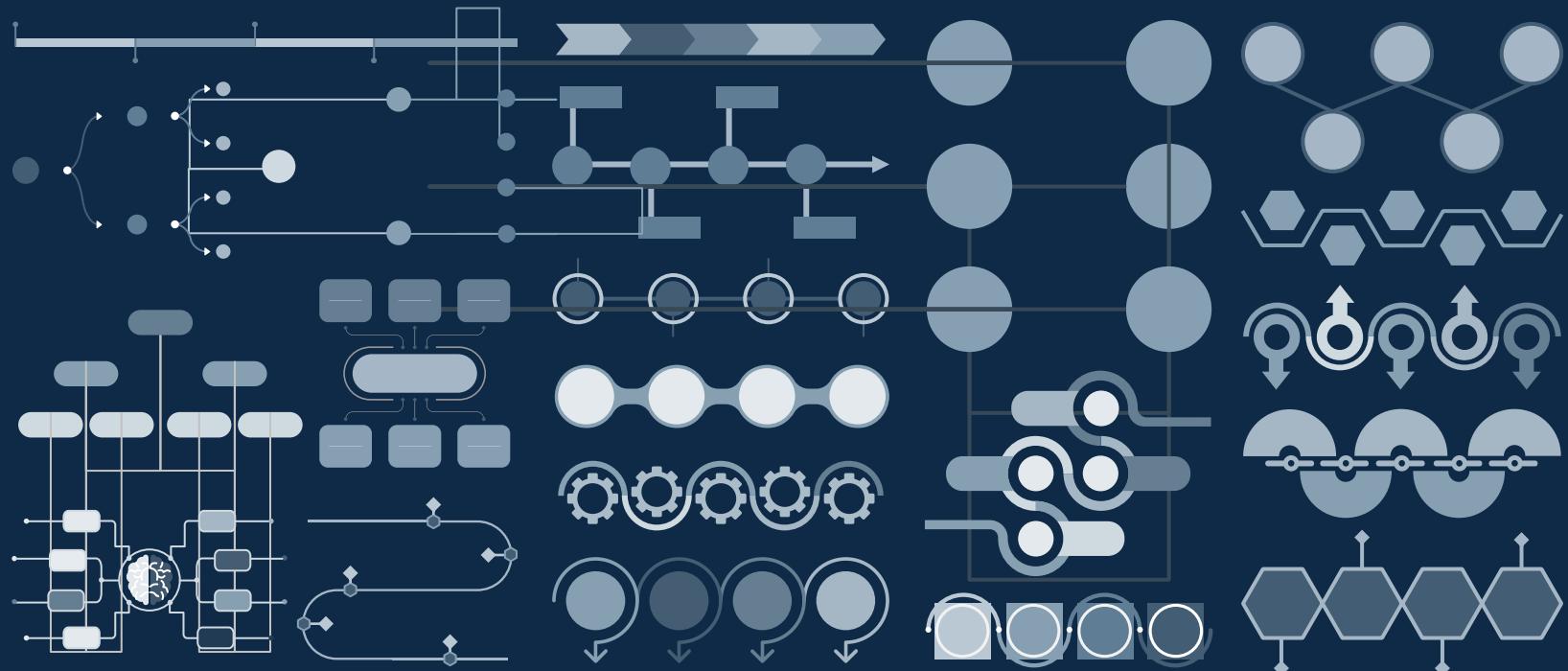


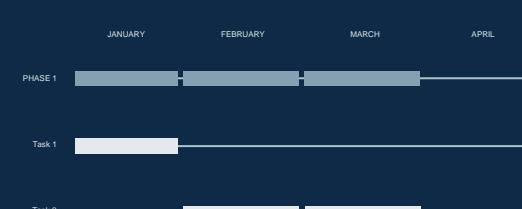
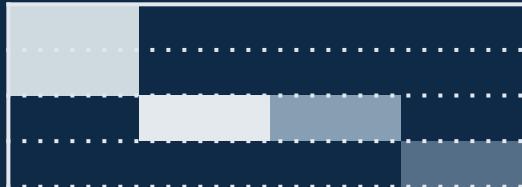
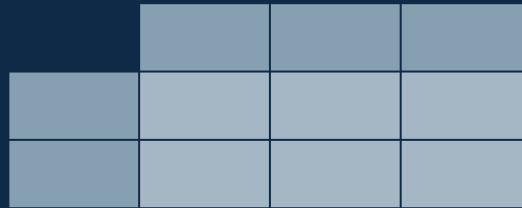
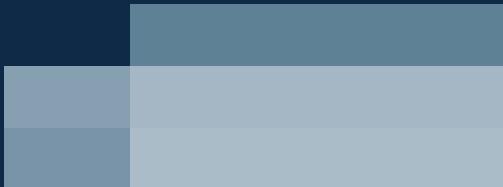
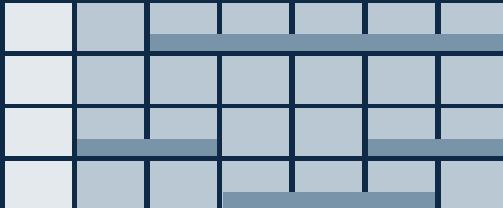
Use our editable graphic resources...

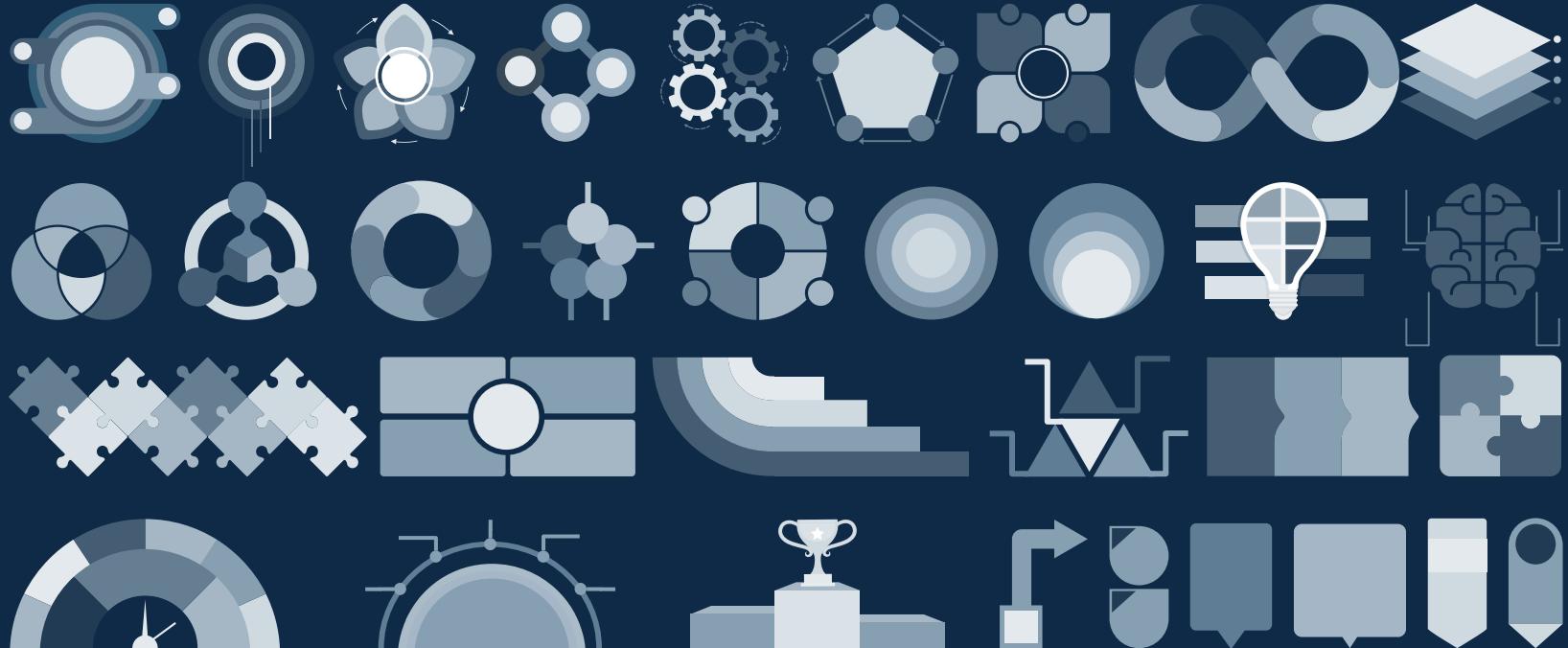
You can easily resize these resources without losing quality. To change the color, just ungroup the resource and click on the object you want to change. Then, click on the paint bucket and select the color you want. Group the resource again when you're done. You can also look for more infographics on Slidesgo.

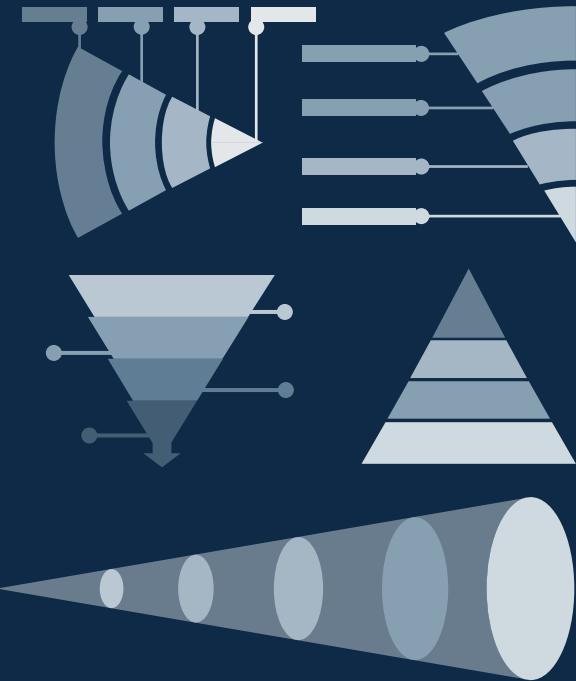
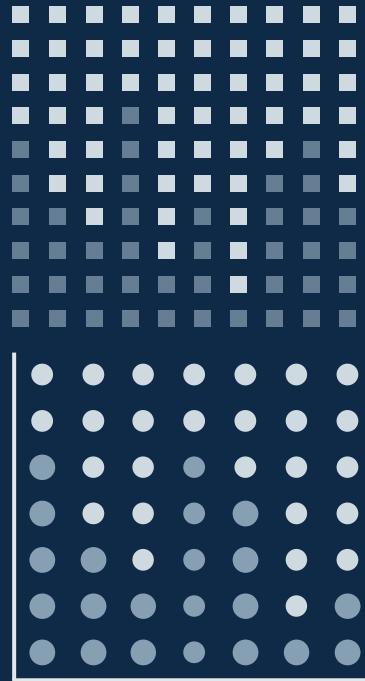












...and our sets of editable icons

You can resize these icons without losing quality.

You can change the stroke and fill color; just select the icon and click on the paint bucket/pen.

In Google Slides, you can also use Flaticon's extension, allowing you to customize and add even more icons.



Educational Icons



Medical Icons



Business Icons



Teamwork Icons



Help & Support Icons



Avatar Icons



Creative Process Icons



Performing Arts Icons



Nature Icons



SEO & Marketing Icons

