VAST

Velocity of Air and Surface Temperature

The Cyber Crusaders

TABLE OF CONTENTS

THE CYBER CRUSADERS

Jordan Oberstein

Back-End Developer

Yousif Moftah

Back-End Developer

Eric Carson

Back-End Developer

Daniel Dorticos-Rossi

Full-Stack Developer

Dani DiTomasso

Front-End Developer

01

PROJECT OVERVIEW

Our website progress since the midterm presentations

TIMELINE

Created the collection and filled it with data

MAR 31

APR 11

API will be created and connected

Full integration of front-end to back-end

APR 19

THE LANDING PAGE

Our landing page is the hub of our website:

- Simplistic design allows for better usability.
- Brief descriptions of each page with picture.
- Footer with working links to social media platforms.

Users are not required to create an account, login, or answer any questions. Our information is free for everyone to use, view, and access.

NASA DATA

NASA has accumulated about 40 petabytes of Earth science data, which is about twice as much as all of the information stored by the Library of Congress.

WIND VELOCITY PAGE

We used created visualizations in order for the user to easily understand the data. States could be selected and a chart of the average wind velocity is shown for every month.

This data was gathered using NASA's Giovanni application.

SURFACE TEMPERATURE PAGE

We used created visualizations in order for the user to easily understand the data. States could be selected and a chart of the average surface temperature is shown for every month.

This data was gathered using NASA's Giovanni application.

OUR MISSION PAGE

Expanded to now be a educational experience

We describe the **goals** we want our website to convey to the users, and what our purpose is.

Created notecards that describe the dangers of global warming to the planet, the environment, and also to lifeforms and humans.

Use NASA's own glossary to define key words in relation to global warming, and to provide statistics.

ABOUT US PAGE

Let’s our viewers get to know us!

- We describe who we are, what university we attend, and why we are passionate about this project.
- Recoded our page to be built in bootstrap and CSS, and to be served with React.
- Is now viewable on both mobile and desktop.

02

AUTOMATED DATA

How we expanded our data collection and conversion process.

DATA COLLECTION

Three Data Sets Collected

- Wind Velocity Map Data
  - Coordinate representation of mainland USA
- Daytime Surface Temperature Monthly Averaged Data by State
  - Represented as bar graph
- Wind Velocity Monthly Averaged Data by State
  - Represented as bar graph

DATA COLLECTION

- Data downloaded from Giovanni
- Python scripts for data transformation

Y Axis: latitude (degrees_north)	X Axis: longitude (degrees_east)								
	-160.0	-159.375	-158.75	-158.125	-157.5	-156.875	-156.25	-155.625	-155.0
15.0	7.1	7.2	7.2	7.3	7.3	7.2	7.2	7.2	7.2
15.5	6.9	7.0	7.1	7.2	7.2	7.2	7.2	7.2	7.2
16.0	6.7	6.8	6.9	7.1	7.2	7.2	7.2	7.2	7.1
16.5	6.5	6.6	6.8	6.9	7.0	7.2	7.2	7.2	7.1
17.0	6.2	6.3	6.5	6.7	6.9	7.0	7.1	7.1	7.1
17.5	5.9	6.0	6.1	6.3	6.5	6.7	6.9	7.1	7.0
18.0	5.6	5.5	5.6	5.7	5.9	6.2	6.7	6.9	6.8
18.5	5.1	5.1	5.0	4.9	5.0	5.4	6.1	6.6	6.5
19.0	4.8	4.6	4.4	4.2	4.0	4.0	4.6	5.2	5.9
19.5	4.4	4.2	4.0	3.8	3.6	3.6	4.0	3.8	4.9
20.0	4.2	4.0	3.8	3.8	3.9	4.2	4.7	4.5	5.4
20.5	4.0	3.9	3.8	3.9	3.9	3.9	4.4	5.7	5.9
21.0	3.9	3.9	3.9	4.0	4.1	4.0	4.5	5.5	5.6
21.5	3.9	3.9	3.8	3.9	4.2	4.4	5.0	5.3	5.5
22.0	4.2	3.9	3.8	3.8	4.1	4.6	5.1	5.3	5.5
22.5	4.5	4.0	3.9	3.9	4.2	4.7	5.1	5.4	5.6
23.0	4.8	4.4	4.2	4.1	4.5	4.9	5.3	5.6	5.7
23.5	5.2	4.9	4.6	4.6	4.9	5.2	5.5	5.7	5.9
24.0	5.5	5.3	5.1	5.0	5.2	5.5	5.7	5.9	6.0
24.5	5.9	5.8	5.6	5.5	5.6	5.7	5.9	6.0	6.1
25.0	6.4	6.2	6.1	6.0	6.0	6.1	6.1	6.2	6.3

DATABASE ORGANIZATION

- Each data set stored as its own item in the database
- Easy access and simple to make API endpoints from
- Endpoints:
  - /api/windVel -> returns all the state monthly wind average data
  - /api/windVel/:stateID -> returns wind velocity data for one state
  - /api/surfaceTemp/:stateID -> returns temp data for one state

03

LIVE DEMO

04

PLANS FOR THE FUTURE

Both now, and if we have more time in the future.

PLANS FOR CHANGE

Fix Minor Bugs

On the Front-End

We have a few minor bugs that do not impact usability but will be fixed before the semester ends.

Clean Up Files

For Easy Site Navigation

Put all unnecessarily / template files into a folder for a better website navigation for developers.

PLANS FOR THE FUTURE

For the future of VAST, we would like to update our website every year to have the newest data available for all of our users. This allows for a new learning experience which each academic year, for educators who would like to use our site on a regular basis. This also allows gives users a reason to return to our site more than just once, which increases site traffic, and therefore also allows awareness on global warming to rise.

CONCLUSION & CHALLENGES

- Built an interactive website for K-12 educators
- Informative wind velocity and surface temperature data visualization
- Full stack application with MongoDB database, containing extracted data
- Consistent frontend design and theme to ensure better UX

- Extracting data from NASA's Giovanni module
- Navigating bugs when parsing and displaying data, creating API
- Ensuring data is relevant for target users
- Keeping up with pre-set project plan and deadlines

THANK YOU!

Do you have any questions?

EDUCATIONAL RESOURCES PAGE

MARS

Mars is actually a very cold place

VENUS

Venus has extremely high temperatures

NEPTUNE

Neptune is the farthest planet from the Sun

MERCURY

Mercury is the closest planet to the Sun

SATURN

Saturn is a gas giant with several rings

JUPITER

Jupiter is the biggest planet of them all

02

AUTOMATED DATA

How we expanded our data collection and conversion process.

TITLE

Mercury is the closest planet to the Sun and the smallest one in the entire Solar System. This planet's name has nothing to do with the liquid metal, since Mercury was named after the Roman messenger god. Despite being closer to the Sun than Venus, its temperatures aren't as terribly hot as that planet's. Its surface is quite similar to that of Earth's Moon, which means there are a lot of craters and plains

Speaking of craters, many of them were named after artists or authors who made significant contributions to their respective fields. Mercury takes a little more than 58 days to complete its rotation, so imagine how long days must be there! Since the temperatures are so extreme, albeit not as extreme as on Venus, and the solar radiation is so high, Mercury has been deemed to be non-habitable for humans

TITLE

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03

LIVE DEMONSTRATION

See our site in action!

EXPANDED CONCEPTS

25%
MERCURY

Mercury is the closest planet to the Sun and the smallest of them all

75%
MARS

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

WHOA!

This can be the part of the presentation where you introduce yourself, write your email...

DO YOU NEED LONGER TEXT?

Mercury is the closest planet to the Sun and the smallest one in the entire Solar System. This planet's name has nothing to do with the liquid metal, since Mercury was named after the Roman messenger god. Despite being closer to the Sun than Venus, its temperatures aren't as terribly hot as that planet's. Its surface is quite similar to that of Earth's Moon, which means there are a lot of craters and plains

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THE SLIDE TITLE GOES HERE!

Do you know what helps you make your point crystal 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

DIVIDE THE CONTENT

MERCURY

Mercury is the closest planet to the Sun and the smallest one in the Solar System—it's a bit larger than the Moon

VENUS

Venus has a beautiful name and is the second planet from the Sun. It's hot and has a poisonous atmosphere

DIVIDE IN FOUR IDEAS

MARS

Mars is actually a very cold place

VENUS

Venus has extremely high temperatures

JUPITER

Jupiter is the biggest planet of them all

SATURN

Saturn is a gas giant and has several rings

CONCEPTS IS A GOOD IDEA

MARS

Mars is actually a very cold place

VENUS

Venus has extremely high temperatures

NEPTUNE

Neptune is the farthest planet from the Sun

MERCURY

Mercury is the closest planet to the Sun

SATURN

Saturn is a gas giant with several rings

JUPITER

Jupiter is the biggest planet of them all

AWESOME WORDS

“This is a quote, words full of wisdom that someone important said and that can inspire anyone who reads them.”

—SOMEONE FAMOUS


A PICTURE IS WORTH A
THOUSAND WORDS

A PICTURE ALWAYS REINFORCES THE CONCEPT

Images reveal large amounts of data, so remember: use an image instead of a long text. Your audience will appreciate it


4,498,300
Big numbers catch your audience’s attention

9h 55m 23s

Jupiter's rotation period

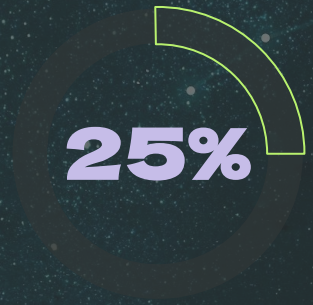
333,000

The Sun's mass compared to Earth's

386,000 km

Distance between Earth and the Moon

LET'S USE SOME PERCENTAGES



VENUS

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

MERCURY

Mercury is the closest planet to the Sun and the smallest of them all

MARS

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

COMPUTER MOCKUP

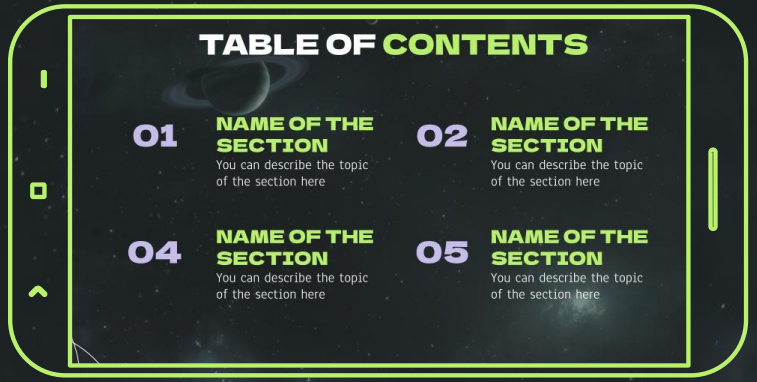
You can replace the image on the screen with your own work. Just right-click on it and select “Replace image”

TABLET MOCKUP

You can replace the image on the screen with your own work. Just right-click on it and select "Replace image"

PHONE MOCKUP

You can replace the image on the screen with your own work. Just right-click on it and select “Replace image”



THIS IS A MAP

VENUS

Venus is the second planet from the Sun

MERCURY

Mercury is the closest planet to the Sun

MARS

Despite being red, Mars is a very cold place

TIMELINE

The schema of our collection was built

MAR 31

APR 11

API will be created and connected

Full integration of front-end to back-end

APR 19

INFOGRAPHICS

MARS

Mars is actually a very cold place

MERCURY

Mercury is the closest planet to the Sun

VENUS

Venus has extremely high temperatures

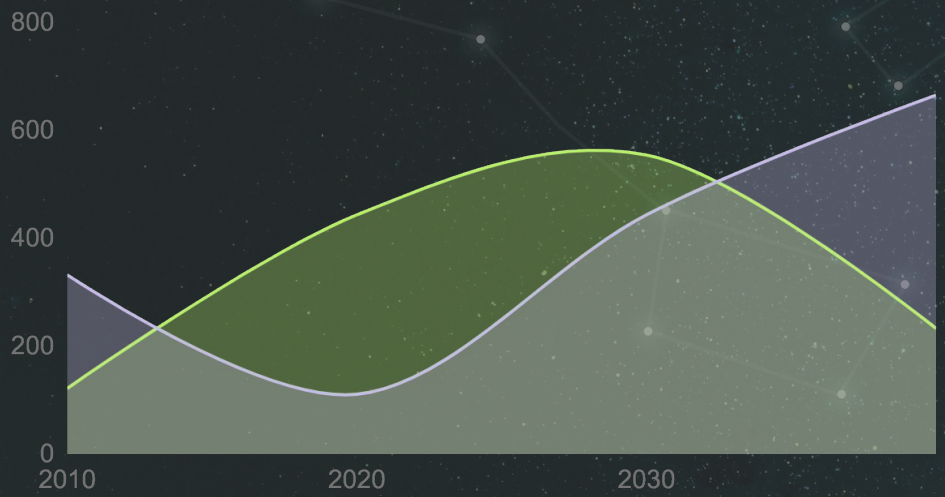
SATURN

Saturn is a gas giant and has several rings

TABLES REPRESENT YOUR DATA

	MASS (earths)	DIAMETER (earths)	GRAVITY (earths)
MERCURY	0.06	0.38	0.38
MARS	0.11	0.53	0.38
SATURN	95.2	9.4	1.16

YOU CAN USE THIS GRAPH



MERCURY

Mercury is the smallest planet

JUPITER

Jupiter is the biggest planet

Follow the link in the graph to modify its data and then paste the new one here. **For more info, click here**

OUR TEAM

ALAN HILL

You can speak a bit about this person here

ANNE HARRIS

You can speak a bit about this person here

THIS IS ANOTHER TABLE

ITEM 1	ITEM 2	ITEM 3	ITEM 4
• Small • Red • Cold • Rocky	• Small • Red • Cold • Rocky	• Small • Red • Cold • Rocky	• Small • Red • Cold • Rocky
Despite being red, Mars is actually a cold place	Venus has a beautiful name and a toxic atmosphere	Neptune is the farthest planet from the Sun	Saturn is a gas giant and has several rings

MAIN TOPICS AND DETAILS

SATURN

SATURN

Saturn is a gas giant and has several rings

MARS

Mars is actually a very cold place

VENUS

Venus has extremely high temperatures

ANOTHER THREE IDEAS

20XX

MERCURY

Mercury is the closest planet to the Sun and the smallest one of them all

20XX

VENUS

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

20XX

MARS

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

THIS IS MORE DATA

A	Mercury is the closest planet to the Sun
B	Earth is the third planet from the Sun
C	Jupiter is the biggest planet of them all
D	Venus has extremely high temperatures
E	Despite being red, Mars is a cold place
F	Saturn is a gas giant and has several rings

UPCOMING EVENTS

VENUS

Venus has a **beautiful name**

MARS

Jupiter is the **biggest planet**

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

COMPARISONS ARE GOOD

CONCEPT 1

- You can define one of the concepts here
- You can define one of the concepts here
- You can define one of the concepts here

CONCEPT 2

- You can define one of the concepts here
- You can define one of the concepts here
- You can define one of the concepts here

THANKS!

Do you have any questions?

youremail@freepik.com
+34 654 321 432
yourwebsite.com

ICON PACK

ALTERNATIVE RESOURCES

Here's an assortment of alternative resources whose style fits that of this template:

PHOTOS

- Male astronaut protecting his eyes from the sun during a space mission on another planet
- Beautiful planets in space
- Beautiful planets in space
- Beautiful planets in space
- Ursa major and ursa minor constellations
- Galaxy night view
- Galaxy night landscape
- Astronaut on mars collage

RESOURCES

Did you like the resources on this template? Get them for free at our other websites:

PHOTOS

- Galaxy night view
- Galaxy night view II
- Galaxy night landscape
- Beautiful constellations on sky full of stars
- Metallic texture close up detail
- Astronaut on mars collage
- Background of an astronaut on the mars looking at the planet
- Journey to planet mars concept
- Astronaut on mars collage

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Anaheim
(https://fonts.google.com/specimen/Anaheim)

Storyset

Create your Story with our illustrated concepts. Choose the style you like the most, edit its colors, pick the background and layers you want to show and bring them to life with the animator panel! It will boost your presentation. Check out **how it works**.

Pana

Amico

Bro

Rafiki

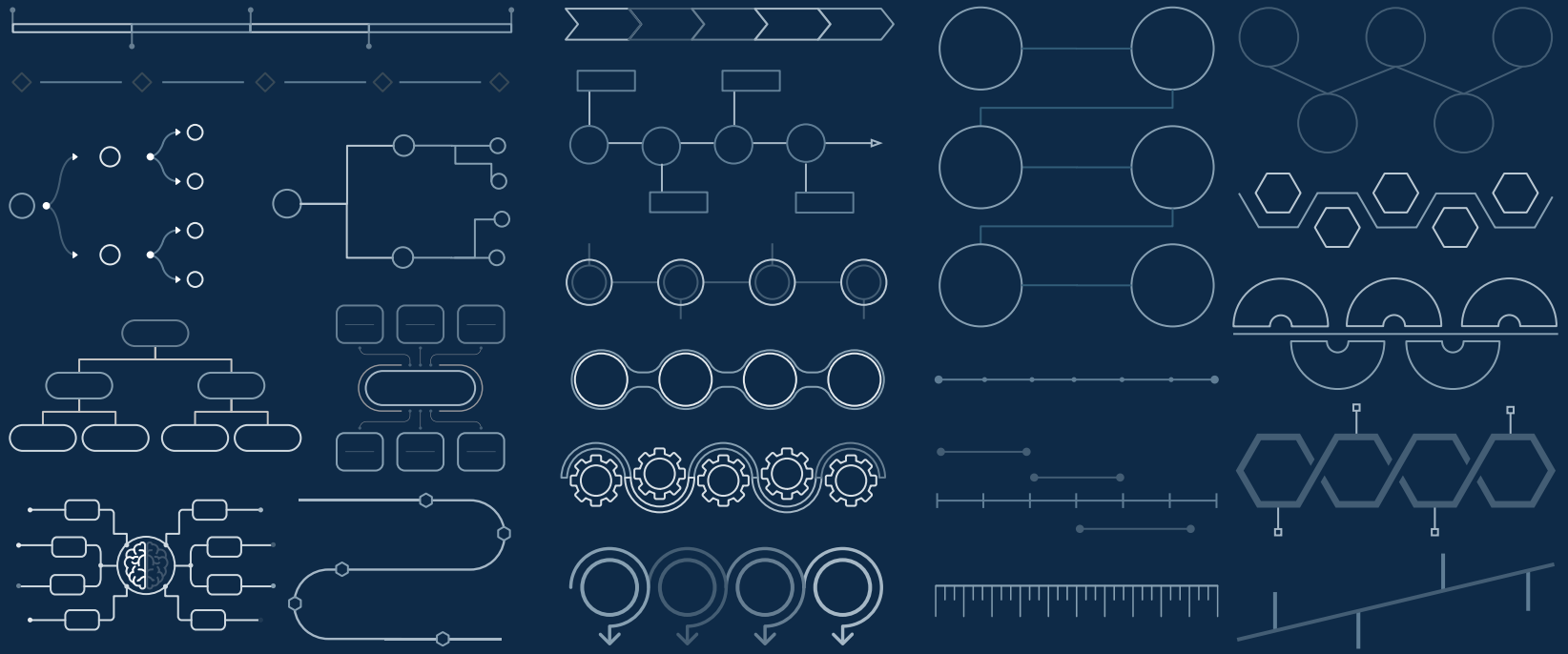
Cuate

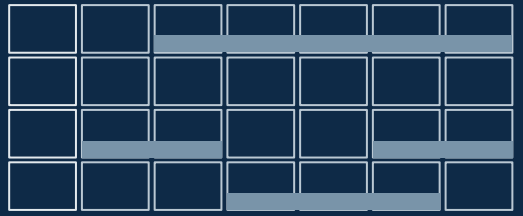
Use our editable graphic resources...

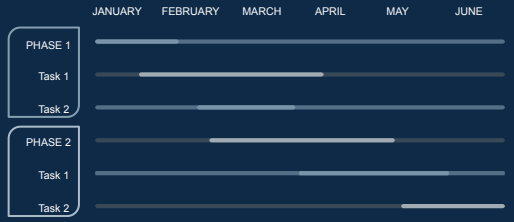
You can easily **resize** these resources without losing quality. To **change the color**, just ungroup the resource and click on the object you want to change. Then, click on the paint bucket and select the color you want. Group the resource again when you're done. You can also look for more **infographics**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

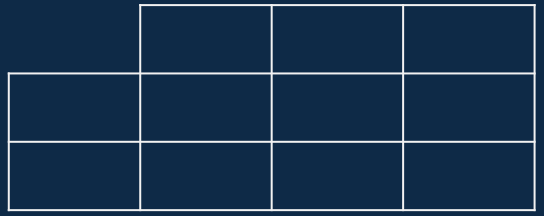


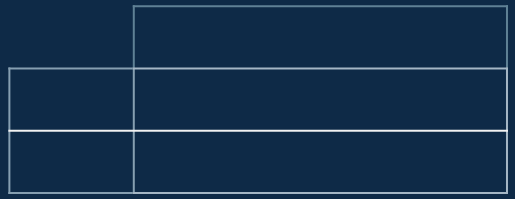


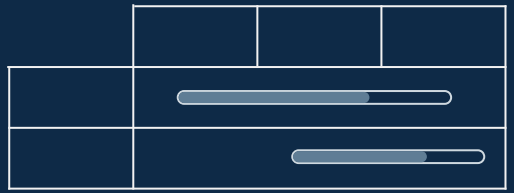



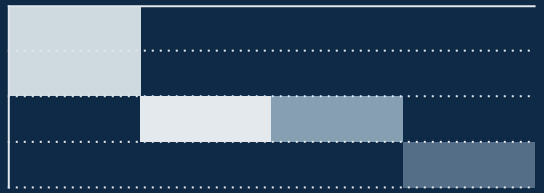


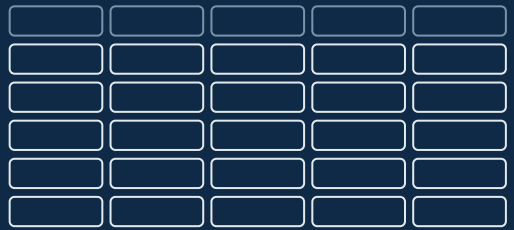

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
PHASE 1
Task 1
Task 2
PHASE 2
Task 1
Task 2

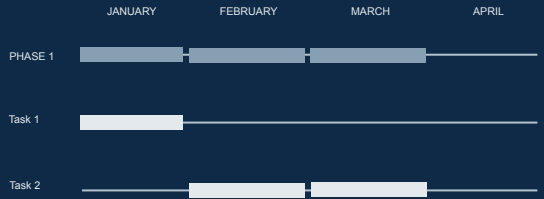


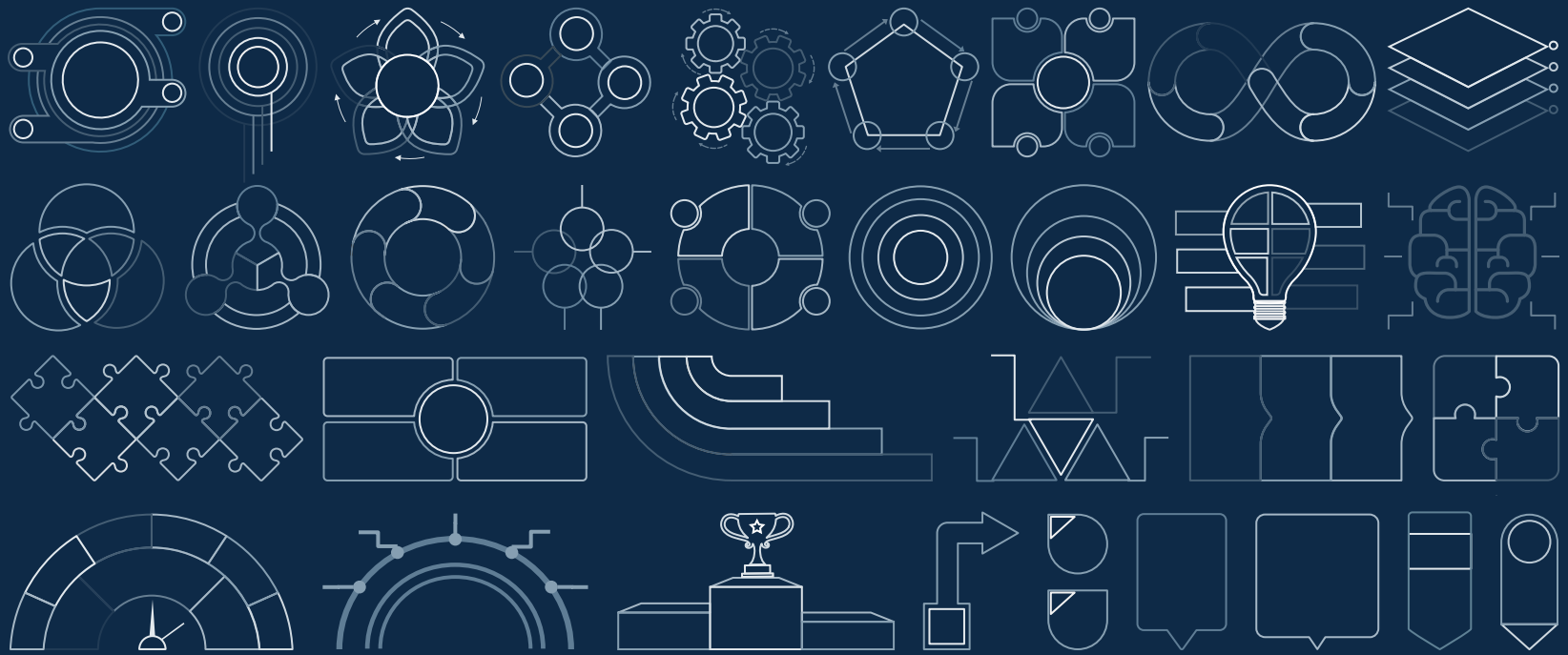


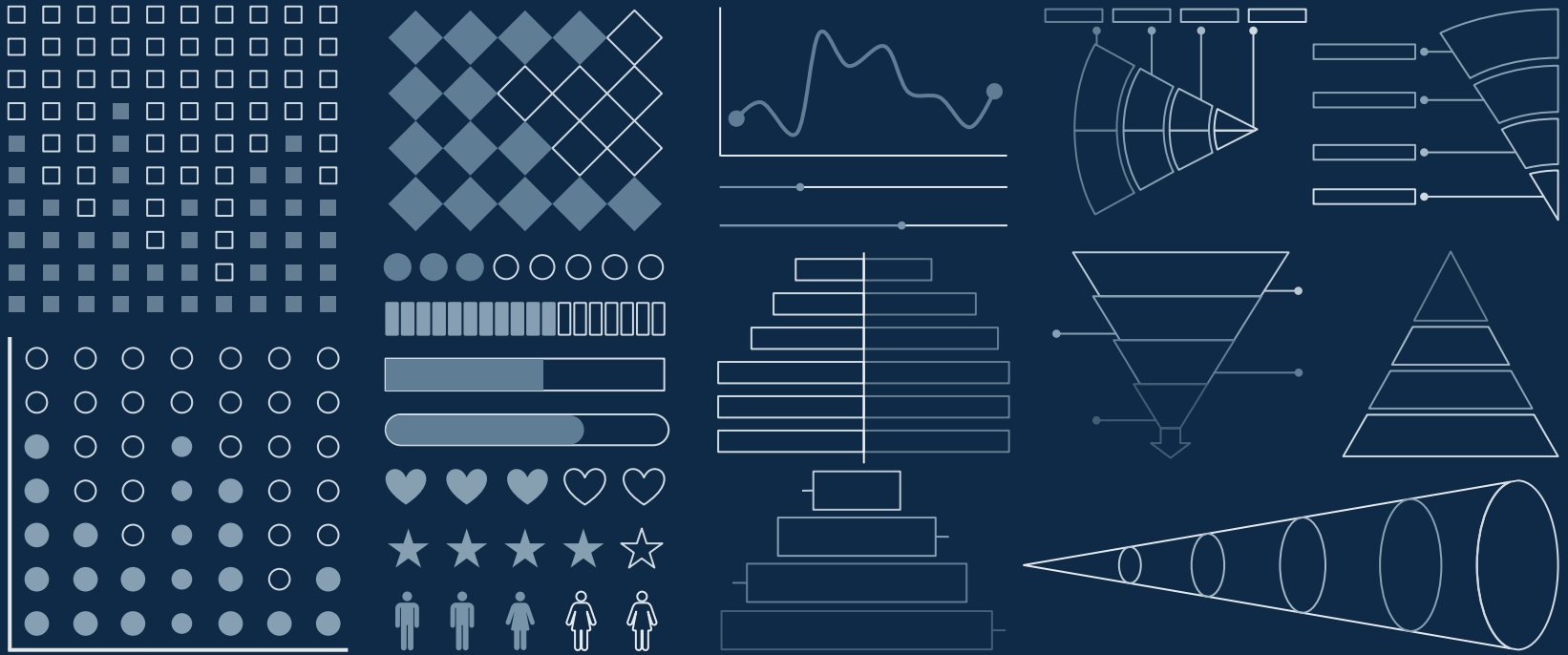







JANUARY
FEBRUARY
MARCH
APRIL
PHASE 1
Task 1
Task 2





...and our sets of editable icons

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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


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