



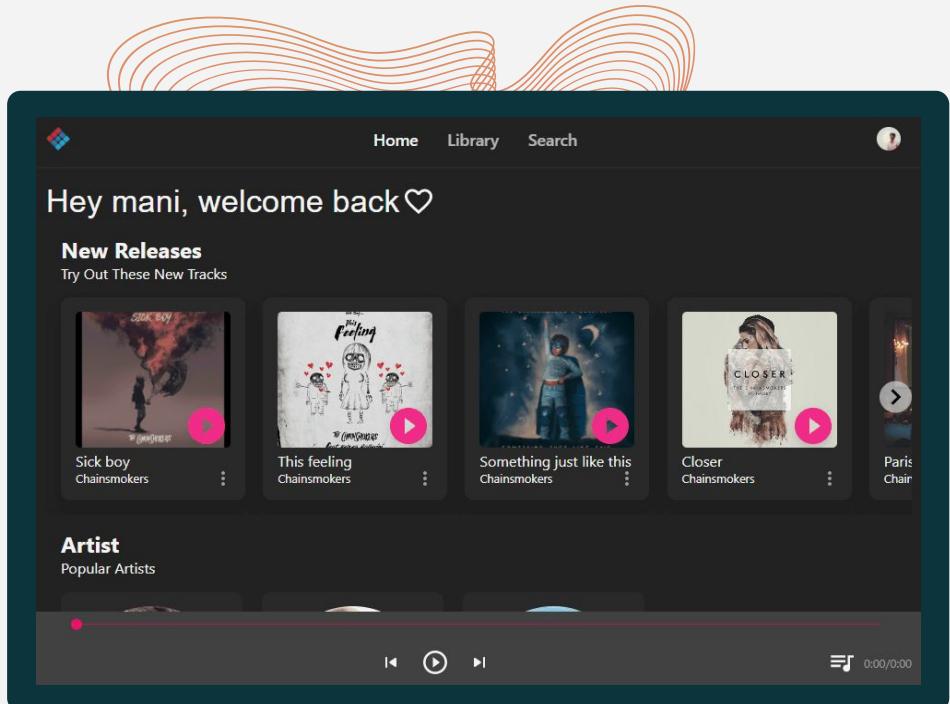
# Testing Octave

Darin Khan, Sky Ng-Thow-Hing, and Liwen Tran

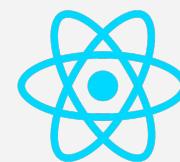
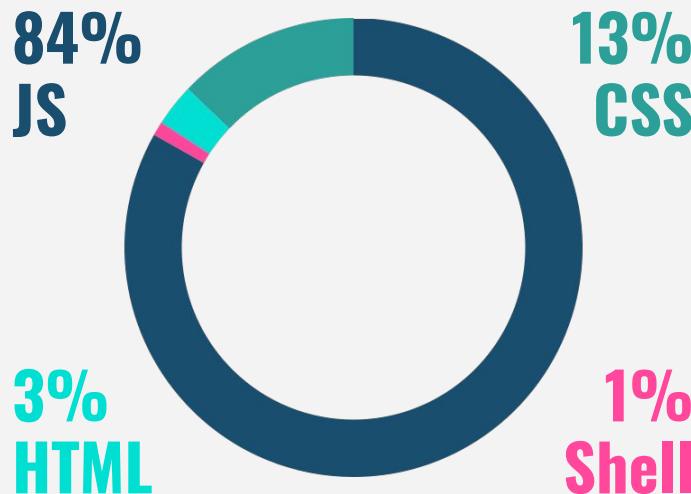
# About

A Music Streaming Web App

- 3641 lines of code
- 31 stars



# Developed With



React

+



Firebase



# Users

# Table of Contents



## Front-End

GUI



## Back-End

Unit Testing



## Non-Functional

Usability



# Testing Front-End

Live Demo



# Input Space Partitioning

	Username	Password
Test 1	Empty	Empty
Test 2	Valid Non-Empty	Valid Non-Empty
Test 3	Invalid Non-Empty	Invalid Non-Empty

# Output Space Partitioning

## Results

---

**Test 1**

Null

---

**Test 2**

No Results

---

**Test 3**

Only Artist

---

**Test 4**

Only Song

---

**Test 5**

Artist & Song

# Actions Criterion

## Playing songs

from all the  
respective pages



## Navigating

to playlists, artist,  
different pages



## Logging in

With valid and  
invalid credentials



## Deleting Songs

from all the  
respective pages

## Creating

Artists, playlists,  
songs

## Signing up

With valid and  
invalid credentials

# Property-Based Testing

01

Removing a song from a playlist with more than one song should decrease the number of songs by one

02

Creating a new playlist should increase the *My Playlists* list by one

03

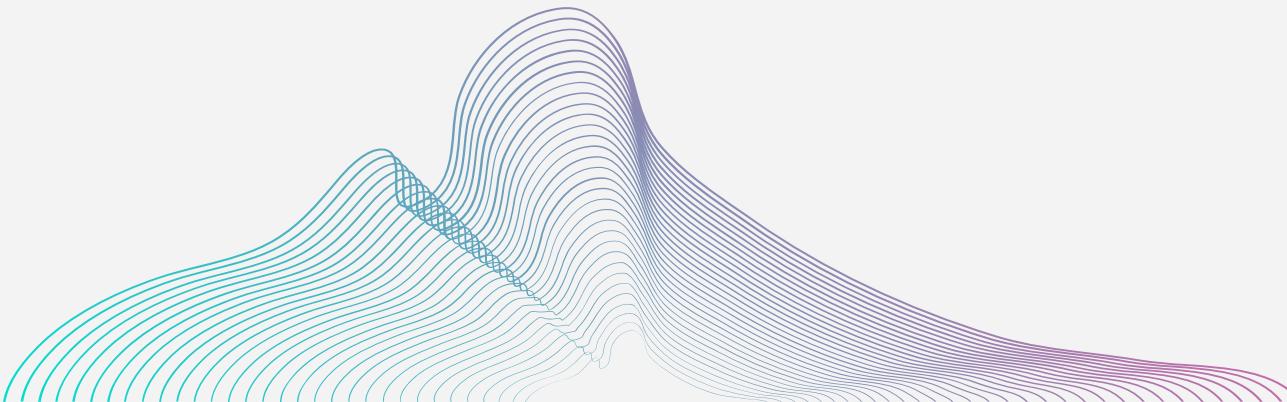
Creating a new artists should increase the *artists* list by one





# Testing Back-End

Live Demo



# White-Box Testing

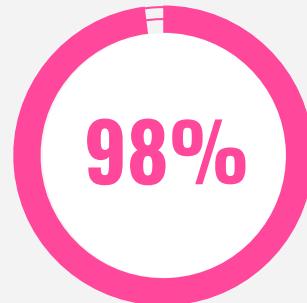
File	% Stmt	% Branch	% Funcs	% Lines	Uncovered Line #s
All files	97.63	96.42	96.22	97.53	
src	100	100	100	100	
firebase.js	100	100	100	100	
src/api	95.29	100	93.75	95.29	
artist.js	100	100	100	100	
auth.js	100	100	100	100	
playlist.js	100	100	100	100	
song.js	80.95	100	71.42	80.95	15-17,21
src/utils	100	94.44	100	100	
common.js	100	100	100	100	
player-utils.js	100	100	100	100	
song-utils.js	100	92.85	100	100	32

Test Suites: 2 failed, 1 passed, 3 total

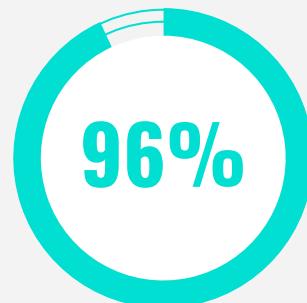
Tests: 9 failed, 53 passed, 62 total

Snapshots: 0 total

Time: 4.634 s, estimated 6 s



Statement Coverage



Branch Coverage

```
// mock all the functions that should be used from firebase/auth module
jest.mock('firebase/auth', () => {
  return {
    signOut: jest.fn(),
    signInWithPopup: jest.fn()
      .mockImplementationOnce(
        () => Promise.resolve({ user: { displayName: mockUsername } })
      ).mockImplementationOnce(
        () => Promise.reject(new Error("reject 1"))
      ),
    signInWithEmailAndPassword: jest.fn(),
    createUserWithEmailAndPassword: jest.fn(),
    sendPasswordResetEmail: jest.fn(),
    updateProfile: jest.fn(),
    onAuthStateChanged: jest.fn(),
    getAuth: jest.fn(),
    GoogleAuthProvider: jest.fn().mockImplementation(() => { return {} })
  };
});
```

# Mock Testing

firebase/auth module

# Non-Functional

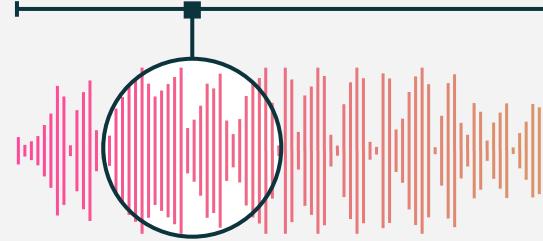
Testing





# Usability

Bad user experience



# Documentation

Created ambiguity

# Future Work

(( 01 ))

**Security**

(( 02 ))

**Full Coverage**

(( 03 ))

**Share**

# Takeaways

- Learned new software
- Meaningful curriculum
- Testing other dev's code



Thank you to Professor Darvish and TAs!  
Any Questions?

# Table of Contents

1. Intro of Octave
  - a. What is the SUT app you have chosen and what is it used for?
  - b. What kind of an app is it? (e.g., web-app, mobile app, desktop app etc.) and on what platform(s) is it run? I
  - c. Who are the potential/active users of the app
  - d. What technologies and programming language(s) the app is implemented/developed with?
2. Table of contents
  - a. GUI
    - i. SignIn - each choice coverage input space partitioning
    - ii. SignUp - each choice coverage input space partitioning
    - iii. Home - Actions criterion
    - iv. Library - Actions criterion
    - v. Playlist - Property based for removing songs
    - vi. Admin - each choice coverage input space partitioning
    - vii. Search - Output space partition
    - viii. Artist - Actions criterion
  - b. Unit testing
    - i. Whitebox
    - ii. Blackbox
  - c. Non functional
    - i. Usability Testing

# Table of contents

(( 01 ))

## Introduction

Describe the section briefly

(( 02 ))

## Presentation

Describe the section briefly

(( 03 ))

## Analysis

Describe the section briefly

(( 04 ))

## Conclusion

Describe the section briefly

# Maybe you need to divide the content

01

## Mars

Despite being red,  
Mars is a cold place

02

## Saturn

Saturn is the ringed  
one and a gas giant

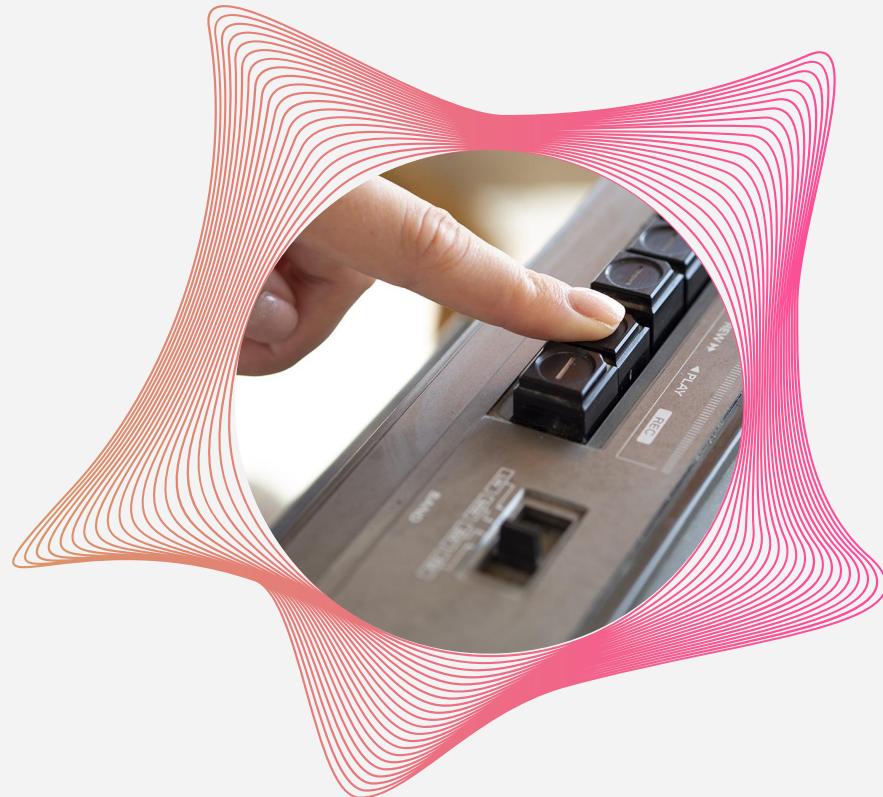


# Introduction

Do you know what helps to make your point clear? Lists like this one:

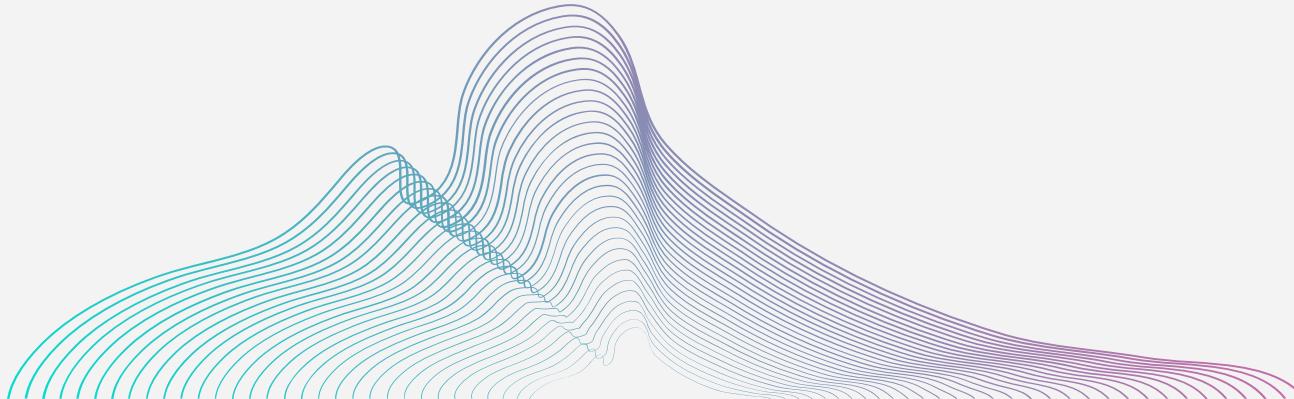
- They're simple
- You can organize your ideas
- You'll never forget to buy milk!

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



# Awesome words

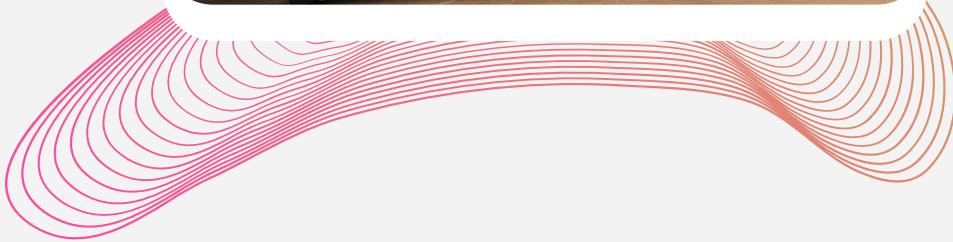
Because key words are great for catching your audience's attention



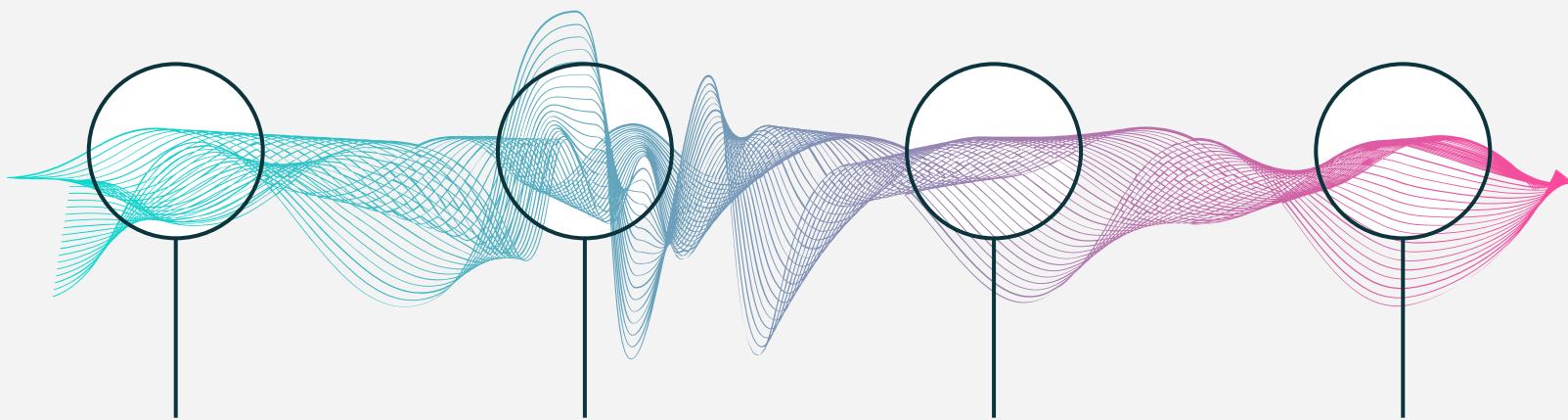


# Whoa!

This could be the part of  
the presentation where  
you introduce yourself



# A timeline always work well



## 01 Venus

Venus has a nice name

## 02 Mars

Mars is a very cold place

## 03 Saturn

Saturn is the ringed one

## 04 Jupiter

Jupiter is the biggest planet



**A picture is  
worth a  
thousand  
words**

# This is a map



## Mars

Mars is a very cold place



## Venus

Venus has a pretty name



## Saturn

Saturn is the ringed one



## Jupiter

Jupiter is the biggest planet

# These are four columns



## Venus

Venus has a nice name



## Mars

Mars is a very cold place



## Saturn

Saturn is the ringed one



## Jupiter

Jupiter is the biggest planet

# Review your concepts



## Mars

Mars is a very cold place



## Venus

Venus has a beautiful name



## Saturn

Saturn is the ringed one



## Mercury

It was named after a god



## Neptune

Neptune is the farthest planet



## Jupiter

Jupiter is a gas giant too

# This is a graph



## Saturn

Saturn is the ringed one



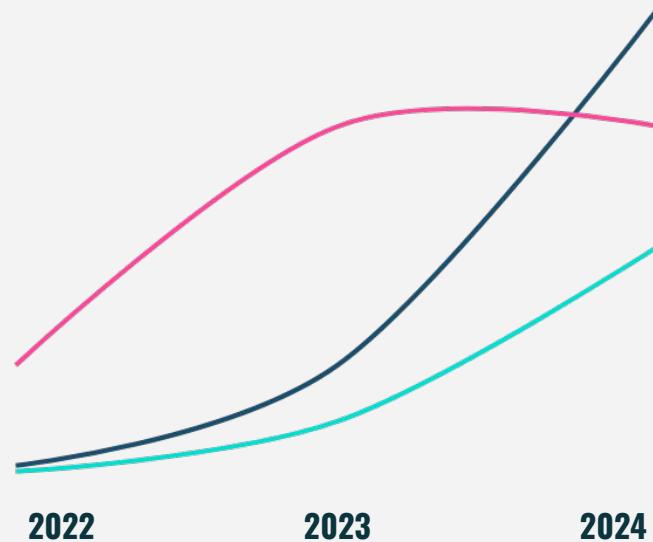
## Mars

Mars is a very cold place



## Venus

Venus has a pretty name



To modify this graph, click on it, follow the link, change the data and paste the new graph here again



# 03

# Analysis

You can enter a subtitle  
to describe the section

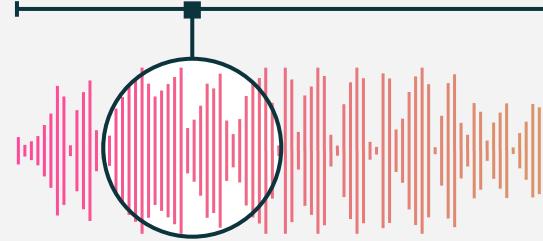
# This is a table

	<b>Mass (earths)</b>	<b>Diameter (earths)</b>	<b>Surface gravity (earths)</b>
<b>Venus</b>	0.06	0.38	0.38
<b>Mars</b>	0.11	0.53	0.38
<b>Saturn</b>	1.16	9.4	1.16



# Problem

Saturn is the ringed one.  
It is composed of  
hydrogen and helium



# Solution

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

# Here is a diagram

## Mars

Despite being red, Mars is cold



## Neptune

Neptune is the farthest planet



## Mercury

It was named after a god



## Venus

Venus has a beautiful name

## Saturn

Saturn is the ringed one

## Jupiter

Jupiter is a gas giant too

# Check out these percentages



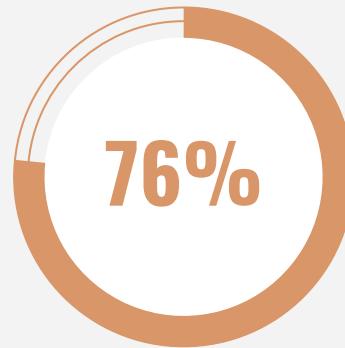
## Venus

Venus has a nice name



## Mercury

Mercury is the smallest one



## Mars

Mars is a very cold place

# Engage your audience

1. Jupiter is the biggest one
2. Mars is a very cold place
3. Neptune is far away from Earth
4. Mercury is the smallest one
5. Uranus is the coldest planet
6. Venus has a beautiful name



# This is another graph

**34%**

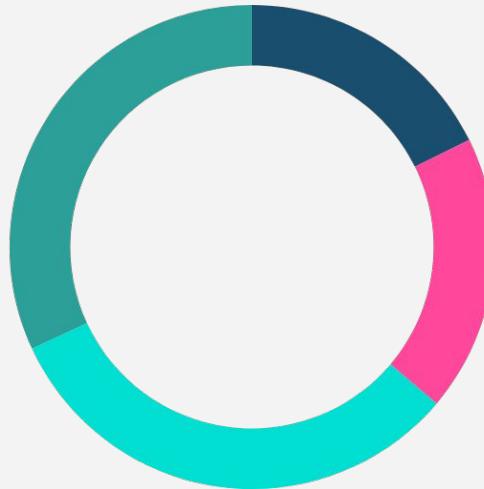
**Mars**

Mars is a very cold place

**40%**

**Venus**

Venus has a pretty name



**10%**

**Saturn**

Saturn is the ringed one

**16%**

**Jupiter**

Jupiter is the biggest planet

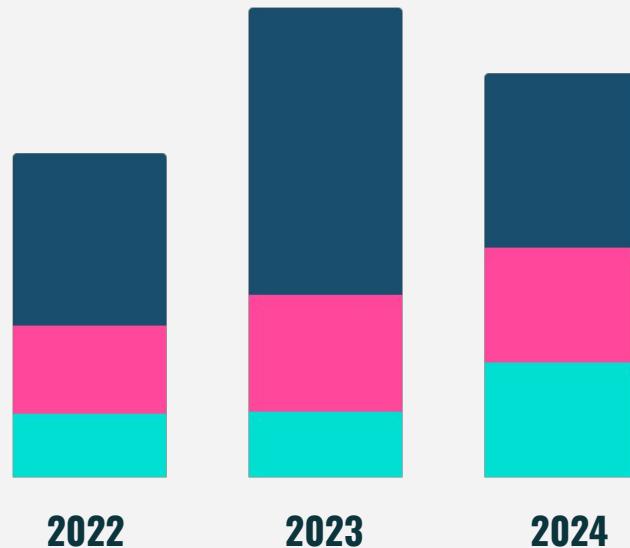
To modify this graph, click on it, follow the link, change the data and paste the new graph here again

«This is a quote, words full of wisdom that someone important said and can make the reader get inspired»

—**SOMEONE FAMOUS**



# Maybe you prefer a bar chart



To modify this graph, click on it, follow  
the link, change the data and paste  
the new graph here

**Venus**  
Venus has a  
beautiful name

**34.5M**  
▲ 16%

**Saturn**  
Saturn is the  
ringed one

**16.8M**  
▲ 21%

**Jupiter**  
Jupiter is a gas  
giant as well

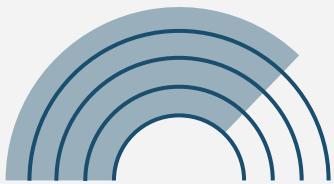
**34.5M**  
▲ 16%

# 4,333,000,000

Big numbers catch your audience's attention



# Infographics are cool



**3.4K**

Venus has a  
pretty name



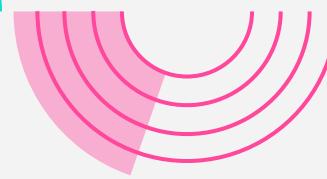
**20.4K**

Mars is a very  
cold place



**54.6K**

Jupiter is the  
biggest planet



**13.1K**

Saturn is the  
ringed one



# A picture always reinforces the concept

Images reveal large amounts of data, so use an image instead of a long text

# Organize your content

01

**Venus**

Venus has a nice name



02

**Mars**

Mars is a very cold place



# You could try three columns



## Saturn

Saturn is the ringed one



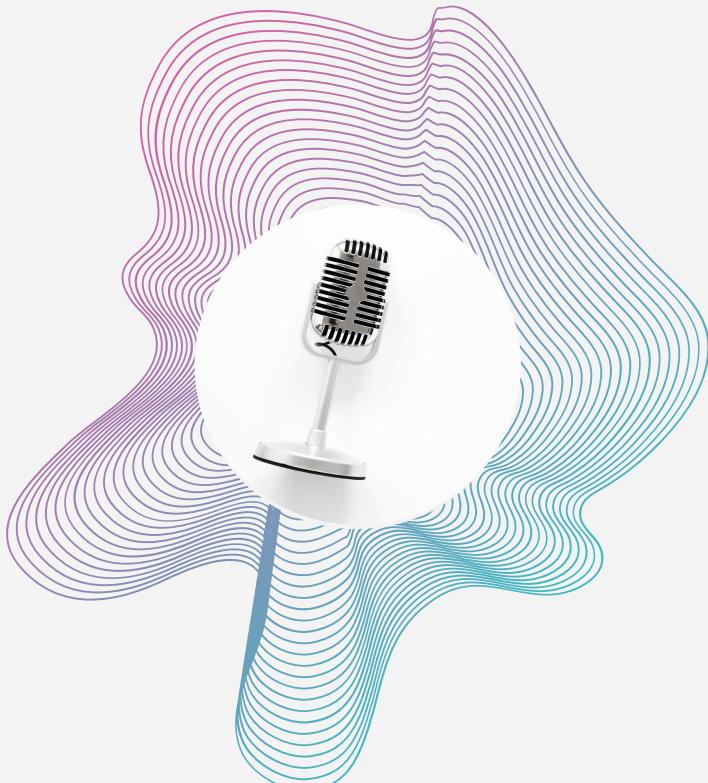
## Mars

Mars is a very cold place



## Jupiter

Jupiter is the biggest planet



# 333,000

earths is the Sun's mass

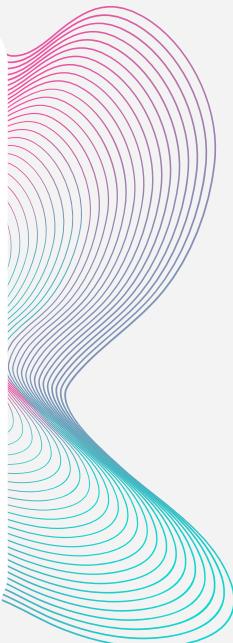
# 24h 37m 23s

is Jupiter's rotation period

# 386,000 km

is the distance between Earth and the Moon

# Tell your story



## Venus

Venus has a nice name



## Jupiter

Jupiter is the biggest planet



## Mars

Mars is a very cold place



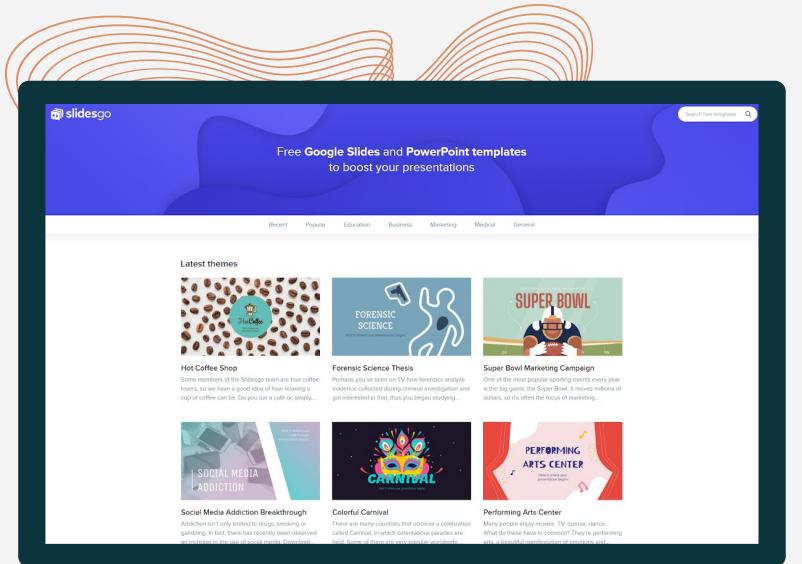
## Saturn

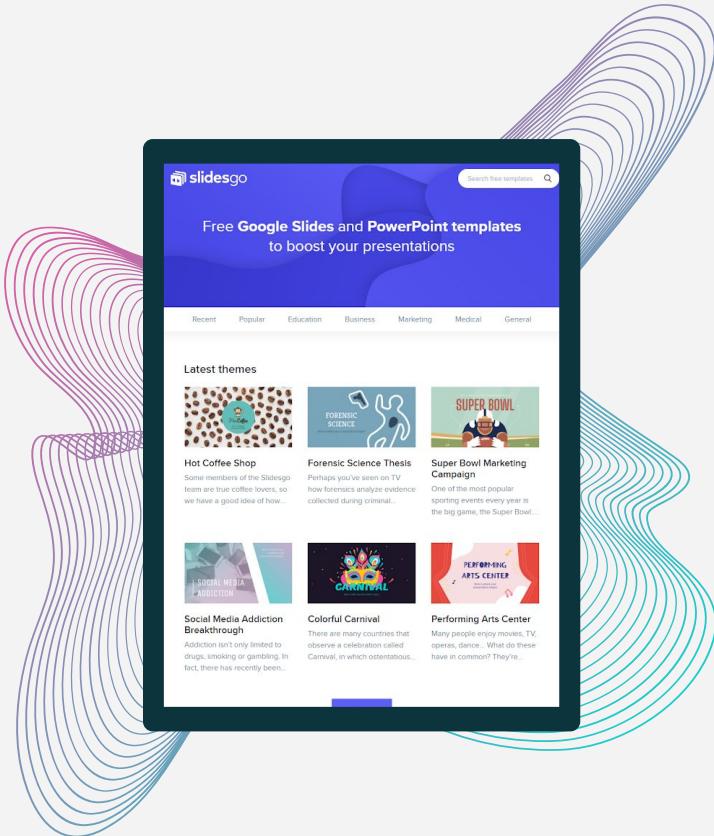
Saturn is the ringed one

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# Tablet app

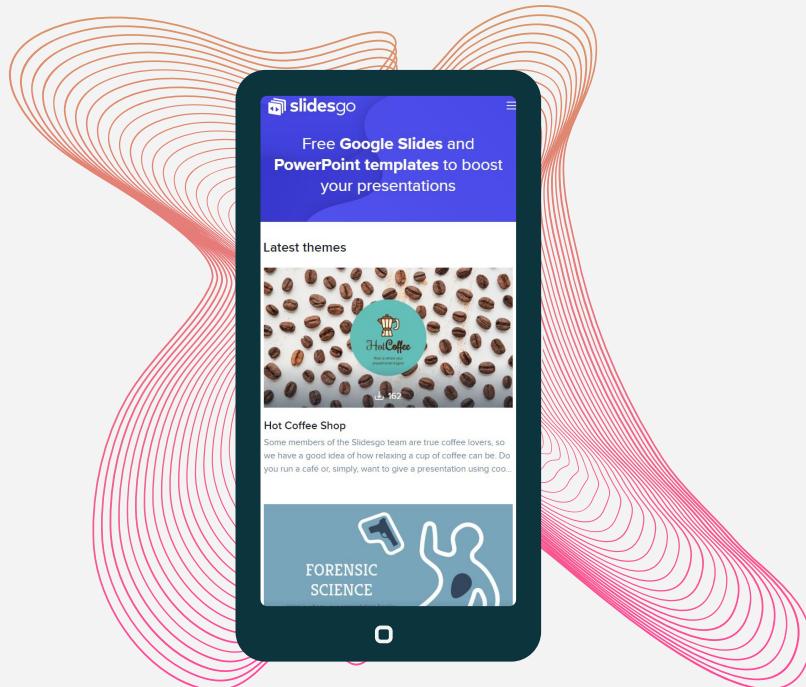


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# Mobile web



If you want to replace the image on the screen with your own work, right-click on it, choose “Replace image” and add yours



# Our team



**Grace  
Wilkins**

Talk a bit about  
this person



**Marcus  
Harper**

Talk a bit about  
this person



**Andrew  
Brine**

Talk a bit about  
this person

# Thanks!

Do you have any questions?

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# Alternative icons



# Alternative resources

## Photo

- Front view man holding cassette
- Front view of music concept with radio
- Various vintage radios on wooden table  
copy space
- On air mic surrounded by acoustic isolation  
foam
- Small retro broadcast radio receiver
- Medium shot smiley woman at radio
- Copy space notepad with mic and  
headphones
- Top view radio cassette and tapes copy  
space
- Vintage audio player with skateboard

## Vector

- Eq equalizer waves background with shiny  
particles
- Purple sound wave background
- Black background with colored sound wave

# Resources

## Photo

- Front view vintage cassette and headphones
- Young woman holding retro music player
- Person pushing music player's button
- Copy-space boy with cassette
- Retro radio with antenna held in hand
- Radio cassette and black headphones
- Woman with pink tape recorder
- Boy with mobile listening music
- Morning on air banner radio stream and coffee
- Girl with headphones enjoying the music
- Microphone and headphones on pink and blue background
- Close-up vintage radio buttons

## Vector

- Abstract sound wave background
- Abstract background with purple and blue sound waves
- Pack of abstract sound waves with purple details
- Collection of colored sound waves made of lines

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#00dfdf

#2b9f98

#ff479c

#d99668

#1a4e6e

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Pana



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Bro



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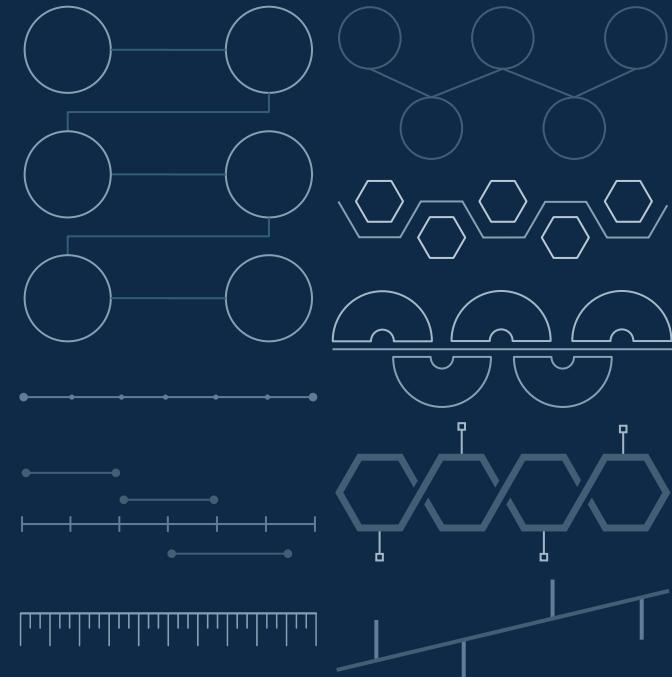
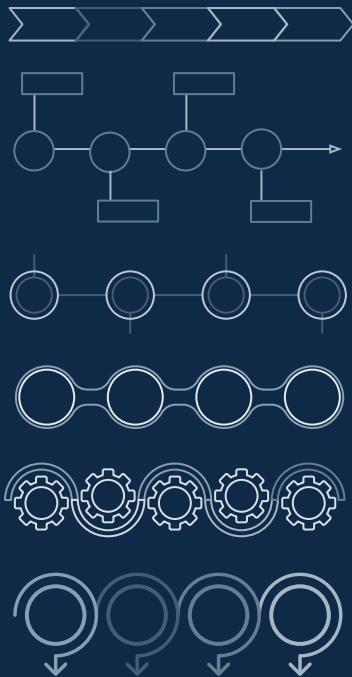
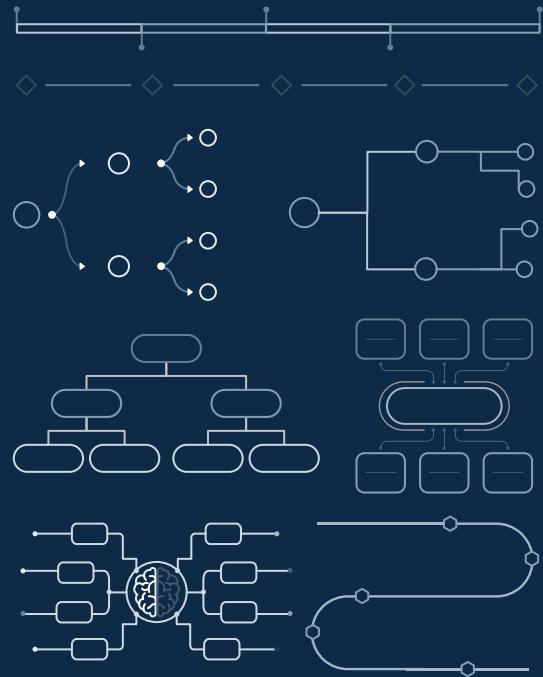
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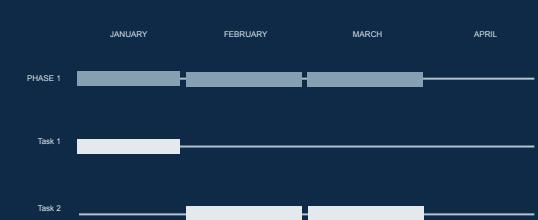
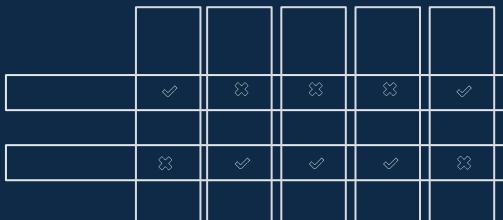
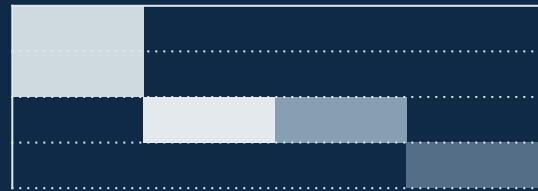
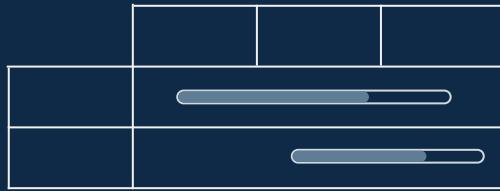
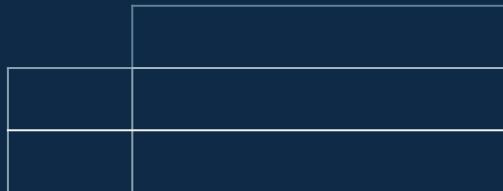
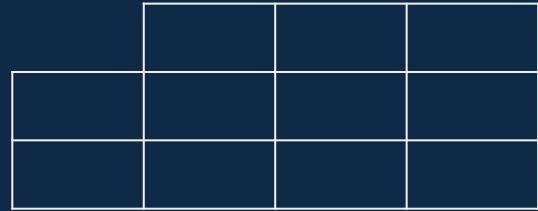
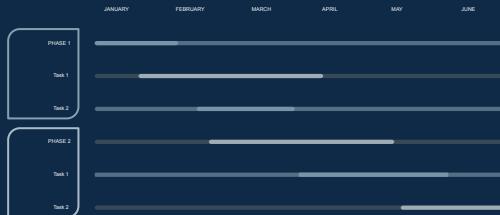
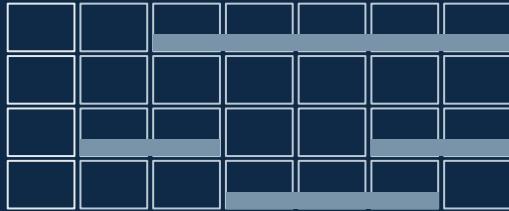
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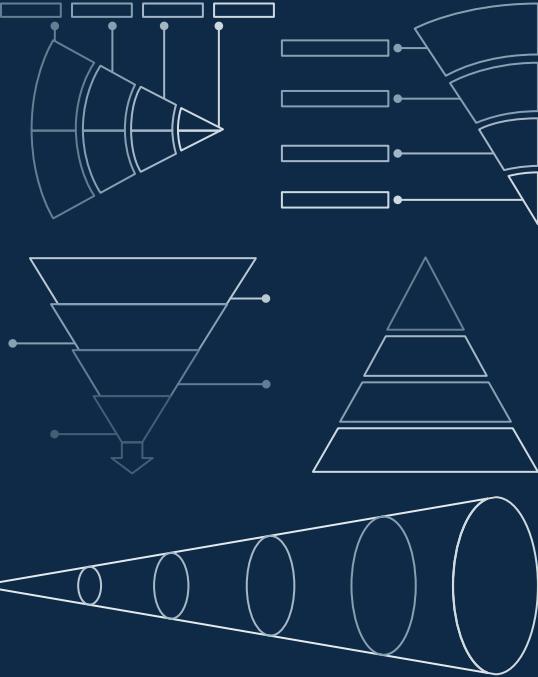
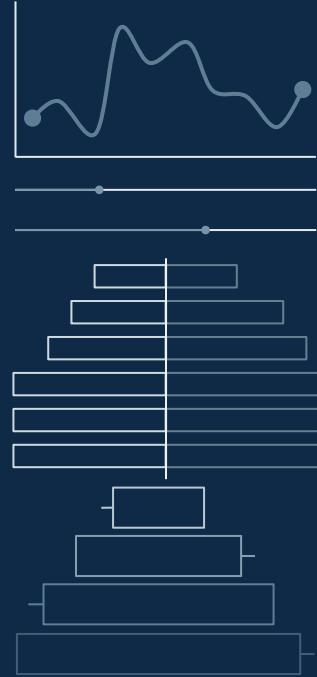
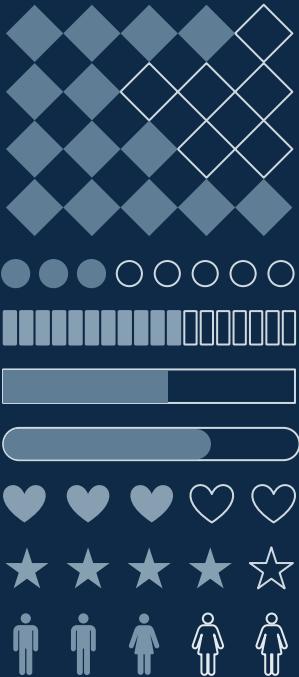
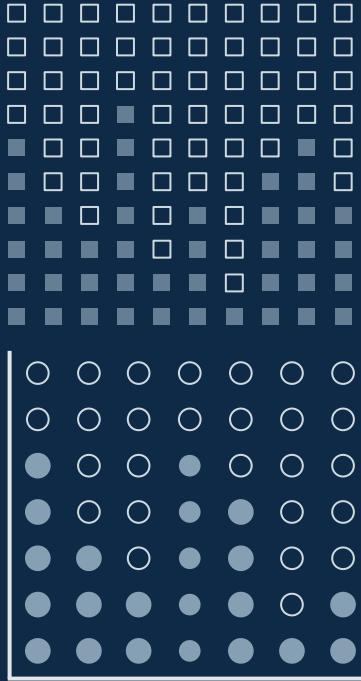












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## Help & Support Icons



# Avatar Icons



## Creative Process Icons



## Performing Arts Icons



# Nature Icons



# SEO & Marketing Icons



