

# Software Development and Version Control

## Git/GitHub



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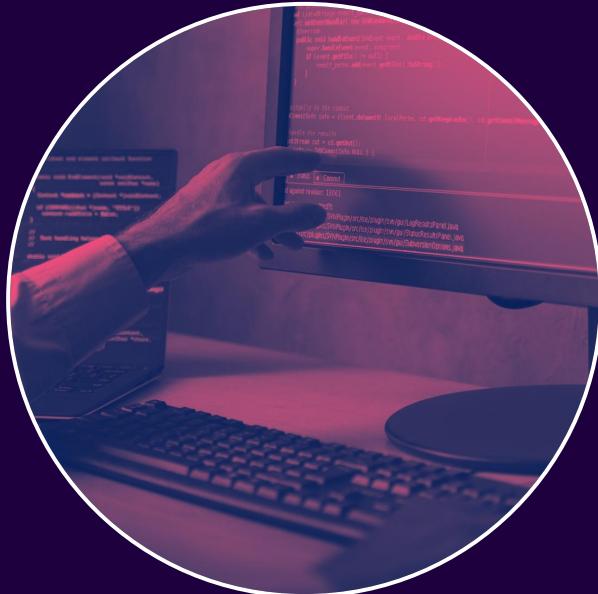
# About Version control and Git

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◀ A version control system, or VCS, tracks the history of changes as people and teams collaborate on projects together. As developers make changes to the project, any earlier version of the project can be recovered at any time.

▶ Git is commonly used for both open source and commercial software development, with significant benefits for individuals, teams and businesses.

# The Benefit of Git



- Git lets developers see the entire timeline of their changes, decisions, and progression of any project in one place.
- Developers work in every time zone while maintaining source code integrity.
- Businesses using Git can break down communication barriers between teams and keep them focused on doing their best work.
- Git makes it possible to align experts across a business to collaborate on major projects.



# About GitHub

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◀ GitHub is a code hosting platform for version control and collaboration. It lets you and others work together on projects from anywhere. ▶

With collaboration layers like the GitHub flow, a community of 15 million developers, and an ecosystem with hundreds of integrations, GitHub changes the way software is built



## FORK AND PULL

- It's based forking, developer get to work on a copy of the open source project then surfaced back through pull request
- .

## MODELS OF COLLABORATIVE DEVELOPMENT

## SHARED REPOSITORY

It's based on simple permission structure that helps the team developing the project quickly.

# Key Concepts !

## ● REPOSITORY

Is like data structure used by VCS to store metadata for a set of files and directories.

## ● COMMIT

Is an individual change of file (or set of files)

## ● BRANCH

Is a lightweight movable pointer to one of these commits.

## ● PUSH/PULL

How commits are transferred from local repo to remote one and vice versa

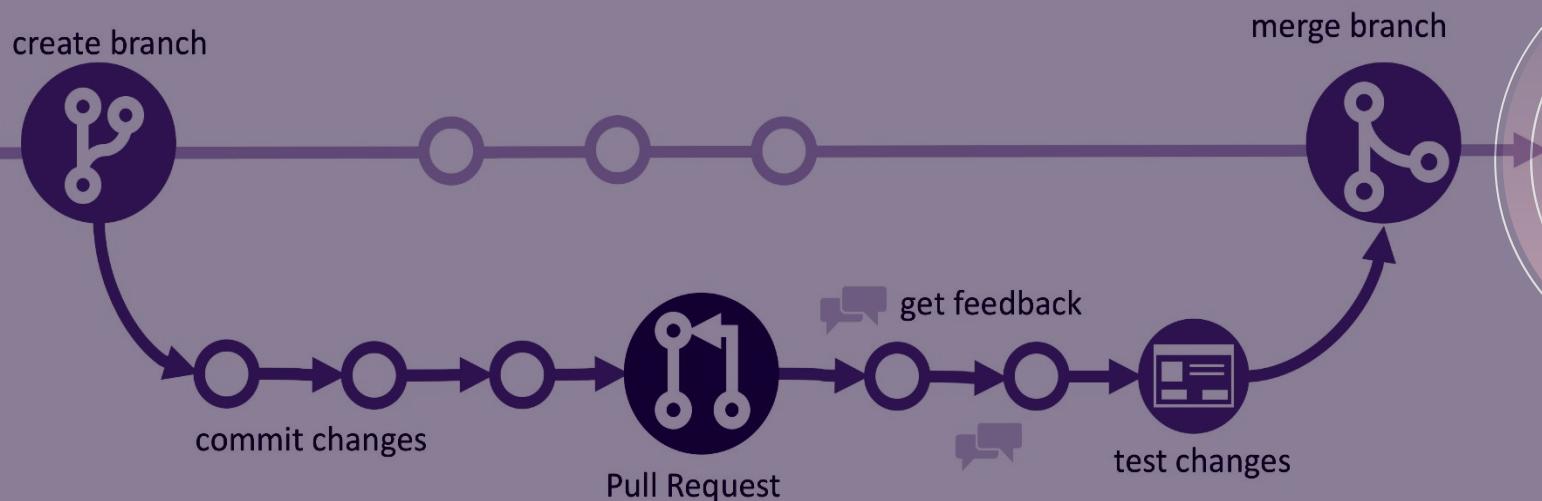
## ● LOCAL REPO/REMOTE REPO

reside on the computers of team members. In contrast, remote repos are hosted on a server that is accessible for all.

## ● PULL REQUEST

let you tell others about changes you've pushed to a branch in a repository on GitHub

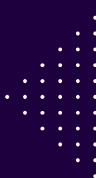
# GitHub Flow





# Git and Command Lines

<code>git init</code>	initializes a brand new Git repository and begins tracking an existing directory
<code>git clone</code>	creates a local copy of a project that already exists remotely.
<code>git add</code>	performs staging, the first part of that two-step process
<code>git commit</code>	saves the snapshot to the project history and completes the change-tracking process.
<code>git branch</code>	shows the branches being worked on locally.
<code>git merge</code>	merges lines of development together
<code>git pull</code>	updates the local line of development with updates from its remote counterpart
<code>git push</code>	updates the remote repository with any commits made locally to a branch.
<code>git status</code>	shows the status of changes as untracked, modified, or staged



# Installation

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**GitHub:**

<https://github.com/>

**Git:**

<https://git-scm.com/downloads>

**GitHub Desktop:** <https://desktop.github.com/>

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Password \*

Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more](#)

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You'll love GitHub

- Unlimited public repositories
- Unlimited private repositories
- ✓ Limitless collaboration
- ✓ Frictionless development
- ✓ Open source community

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What is your level of programming experience?

- None—I don't program at all.
- New to programming
- Somewhat experienced
- Very experienced

What do you plan to use GitHub for? (Select up to 10)

- Learning to code
- Learning Git and GitHub
- Host a project (repository)
- Creating a website with GitHub Pages
- Collaborating with my team
- Finding a project to contribute to
- School work / School-related project
- The GitHub API
- I don't know yet
- Other (please specify)

What are you interested in?

What languages, frameworks, industries, or disciplines are you interested in?  
e.g. visual, game-off, monitoring

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Before you can contribute on GitHub, we need you to verify your email address.

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The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

## Download for Windows

[Click here to download](#) the latest (2.38.1) 64-bit version of **Git for Windows**. This is the most recent maintained build. It was released about 1 month ago, on 2022-10-18.

Other Git for Windows downloads

Standalone Installer

[32-bit Git for Windows Setup.](#)

[64-bit Git for Windows Setup.](#)

Portable ("thumbdrive edition")

[32-bit Git for Windows Portable.](#)

[64-bit Git for Windows Portable.](#)

Using winget tool

Install `winget` tool if you don't already have it, then type this command in command prompt or Powershell.

```
winget install --id Git.Git -e --source winget
```

The current source code release is version 2.38.1. If you want the newer version, you can build it from the [source code](#).

**Now What?**

# COMPANY HISTORY

1XXX

VENUS

Venus is the second planet from the Sun

1XXX

MARS

Mars is full of iron oxide dust

2XXX

JUPITER

Jupiter doesn't have a solid surface

2XXX

SATURN

Saturn was named after a Roman god



# COMPANY HISTORY

1XXX

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Venus is the second planet from the Sun

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2XXX

SATURN

Saturn was named after a Roman god



# COMPANY MILESTONE

## MILESTONE 1

Mercury is the closest planet to the Sun

## MILESTONE 3

Venus is the farthest planet from the Sun

## MILESTONE 5

Mars is actually a very cold place



## MILESTONE 2

Jupiter is the biggest planet of them all

## MILESTONE 4

Saturn is composed of hydrogen and helium



**<60%**

### COMPANY'S GROWTH

Mars is actually a cold place

**200**

### PARTNERS

Venus has a beautiful name

**4,000**

### EMPLOYEES

Mercury is a very small planet

**450,000**

### USERS

Saturn has several rings

# EMPLOYEE BENEFITS

## WORK-LIFE BALANCE

Venus is the second planet from the Sun

## CATERING SERVICE

Saturn is a gas giant and has several rings

## HEALTH INSURANCE

Pluto is now considered a dwarf planet

## RETIREMENT PLANS

Neptune is the farthest planet from the Sun



# JOB DESCRIPTION 1



## DESIRED PROFILE

- Describe the desired profile here

## REQUIRED STUDIES

- Describe the required studies here

## REQUIRED SKILLS

- Describe the required skills here



# JOB DESCRIPTION 3

<b>JOB TITLE</b>	
Software developer engineer	
<b>DEPARTEMENT</b>	
Software development	
<b>LOCATION</b>	<b>DURATION</b>
New York	12 months
<b>WORK SCHEDULE</b>	
40 hours per week / 52 weeks per year	

## **JOB OBJECTIVE**

You can briefly describe the job position and the objectives to be pursued

## **RESPONSIBILITIES**

- Describe the responsibilities here
- Describe the responsibilities here
- Describe the responsibilities here

## **EDUCATION & EXPERIENCE**

- Describe the education here
- Describe the experience here

# OBJECTIVES & RESPONSIBILITIES OF THE ROLE

## JOB OBJECTIVE

- Describe the first job objective here
- Describe the second job objective here
- Describe the third job objective here

## RESPONSIBILITIES

- Describe the first responsibility here
- Describe the second responsibility here
- Describe the third responsibility here
- Describe the fourth responsibility here
- Describe the fifth responsibility here
- Describe the sixth responsibility here
- Describe the seventh responsibility here

# GOALS

## COMMUNICATION GOALS

- Describe the different goals of the role here
- Describe the different goals of the role here
- Describe the different goals of the role here
- Describe the different goals of the role here

## MARKETING GOALS

- Describe the different goals of the role here
- Describe the different goals of the role here
- Describe the different goals of the role here
- Describe the different goals of the role here

# VALUABLE KNOWLEDGE



## PROGRAMMING TOOLS

Despite being red,  
Mars is a cold place



## TEAMWORK

Saturn is gas giant and  
has several rings



## LANGUAGE

Mercury is the smallest  
planet of them all



## LEADERSHIP

Venus is the second  
planet from the Sun



# REQUIRED KNOWLEDGE

## REQUIRED KNOWLEDGE

### PROGRAMMING

Venus is a hot planet

#### JAVA

Jupiter doesn't have  
a solid surface

#### PYTHON

Mars is full of iron  
oxide dust

### LANGUAGES

Saturn is a gas giant

#### ENGLISH

Neptune is very far  
away from the Sun

#### SPANISH

Earth is the planet  
where we live on



# THANKS!

**Do you have any questions?**

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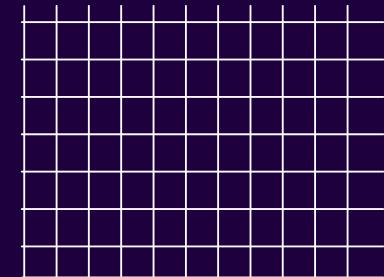
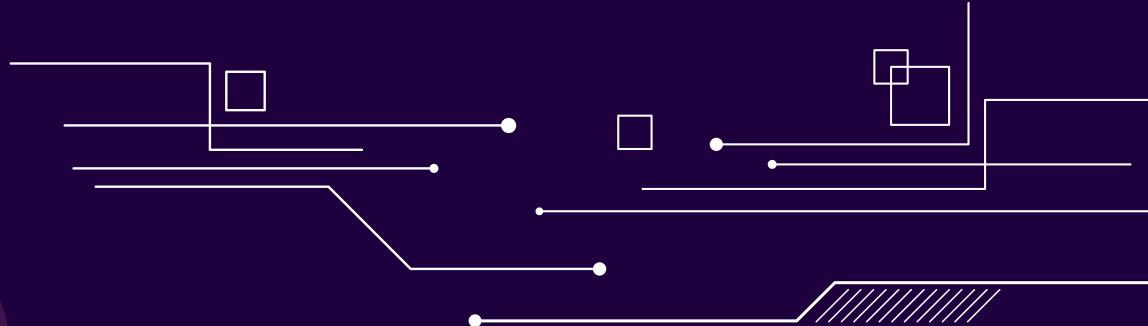


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- Flat design minimal technology poster



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- Close up hand pointing at monitor

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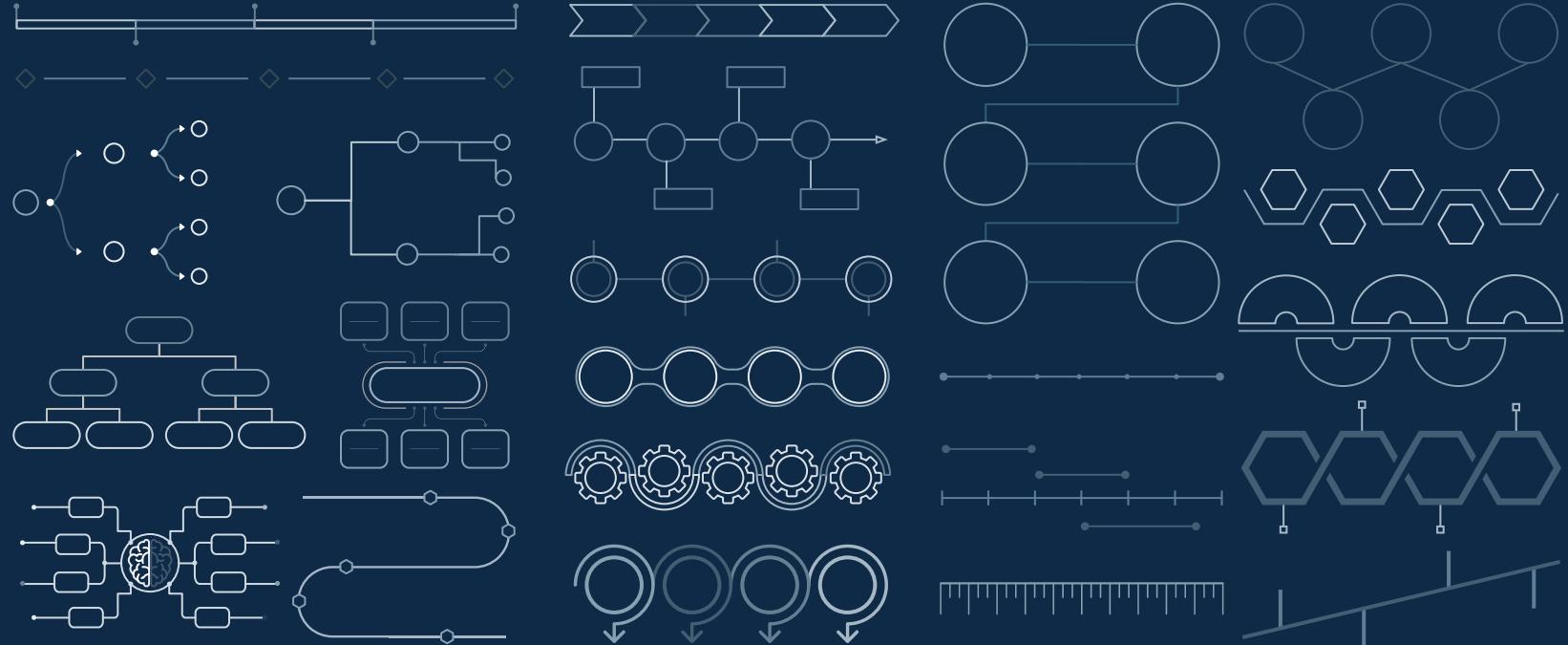
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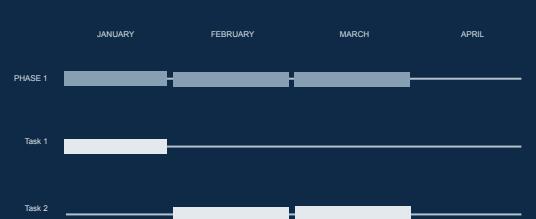
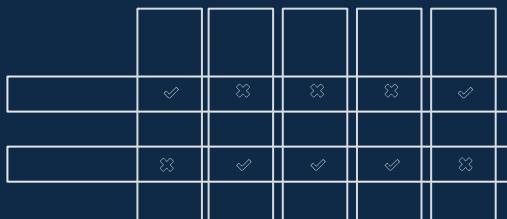
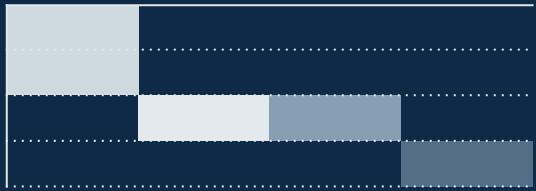
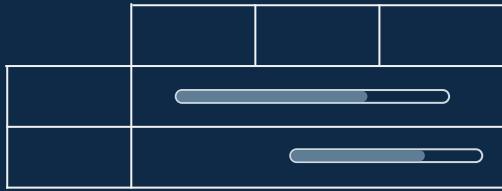
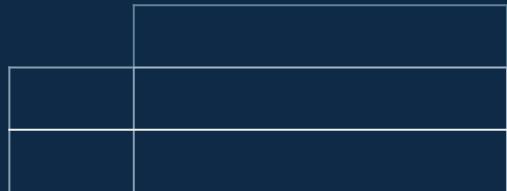
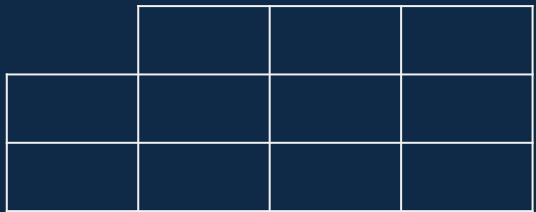
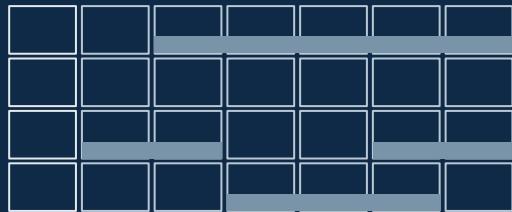
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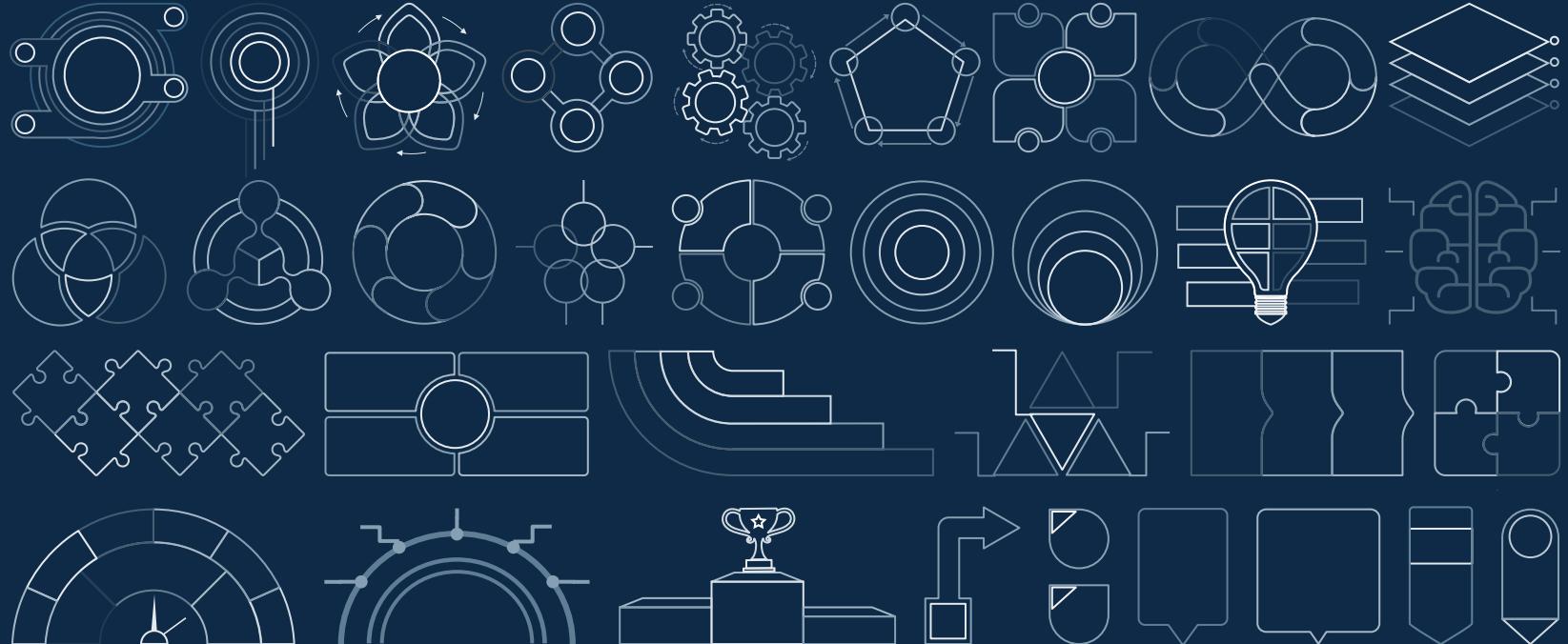
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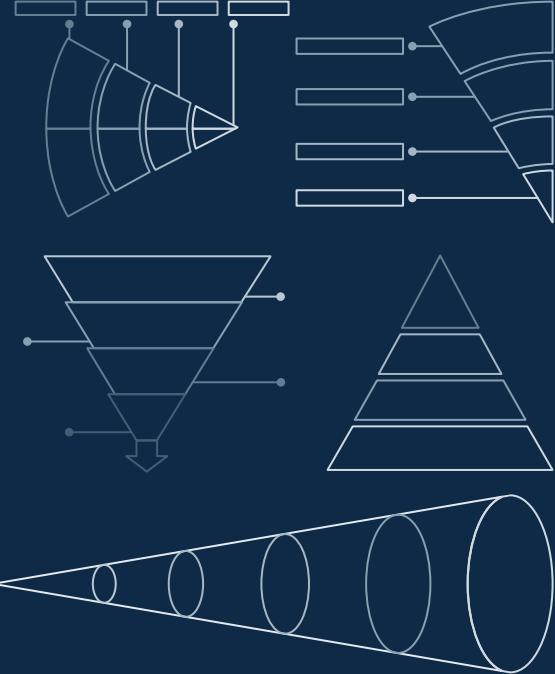
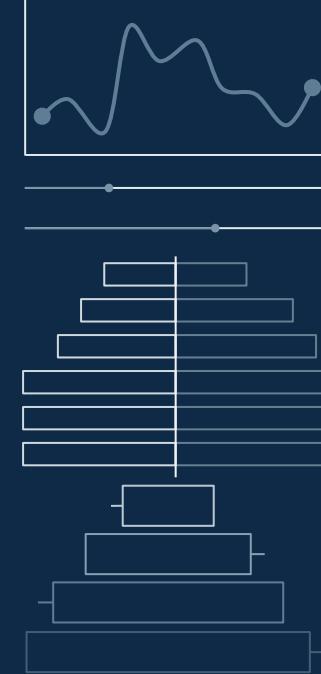
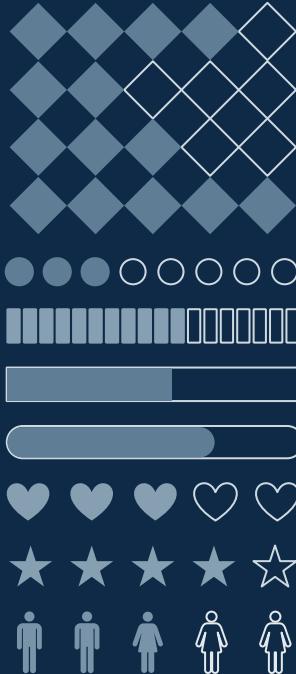
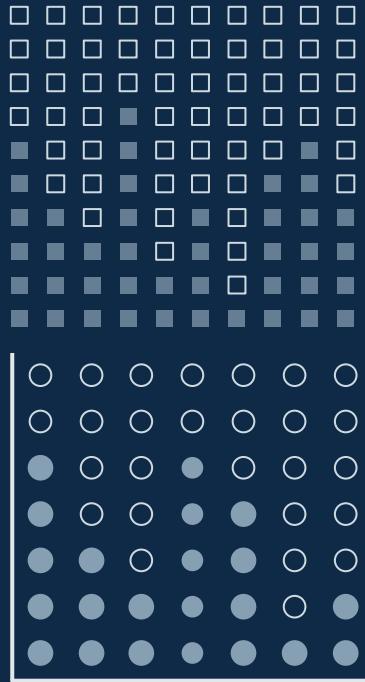












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