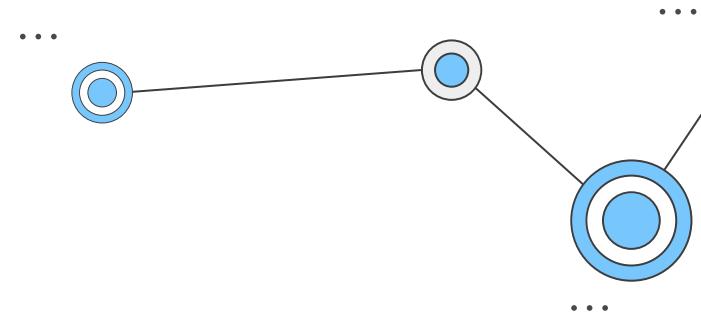
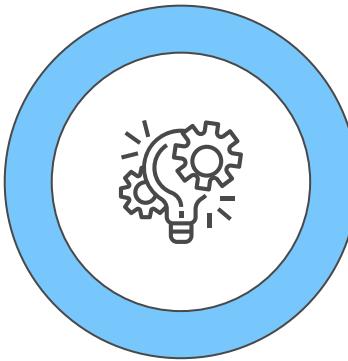


DEFECT PROGRAMMER ASSIGNMENT

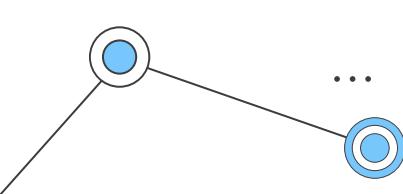
Capgemini - Sprint 1
Group 3



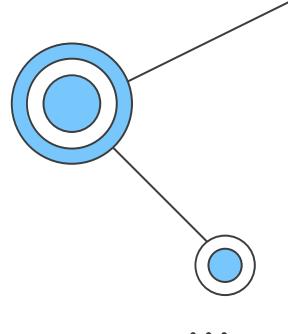


The Project Idea

To develop a software that automatically assigns the defects reported by the client company to programmers depending on the functional area they are handling.



The Need ?



01

Time Consuming

02

Not realtime

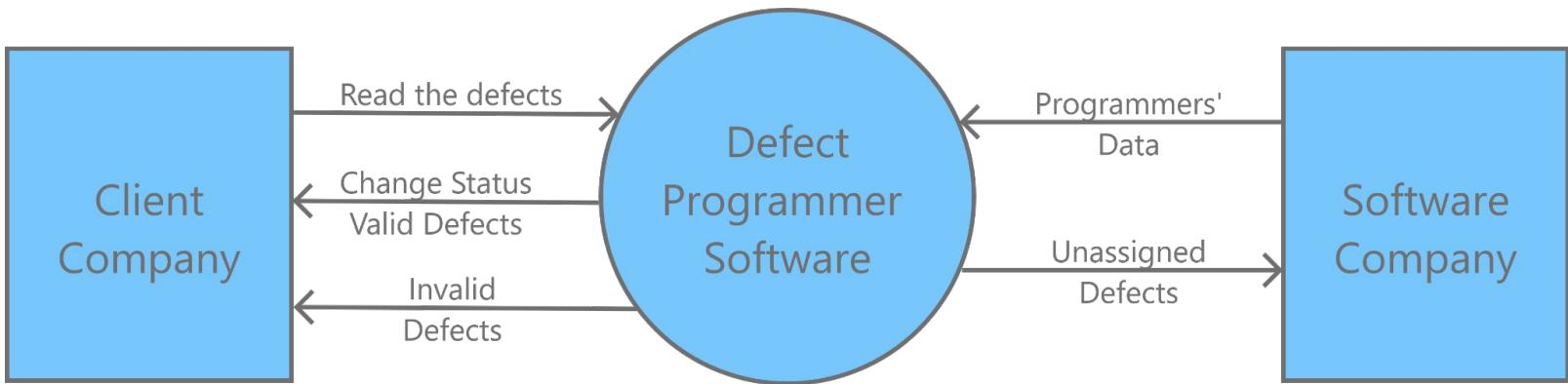
03

More Labour

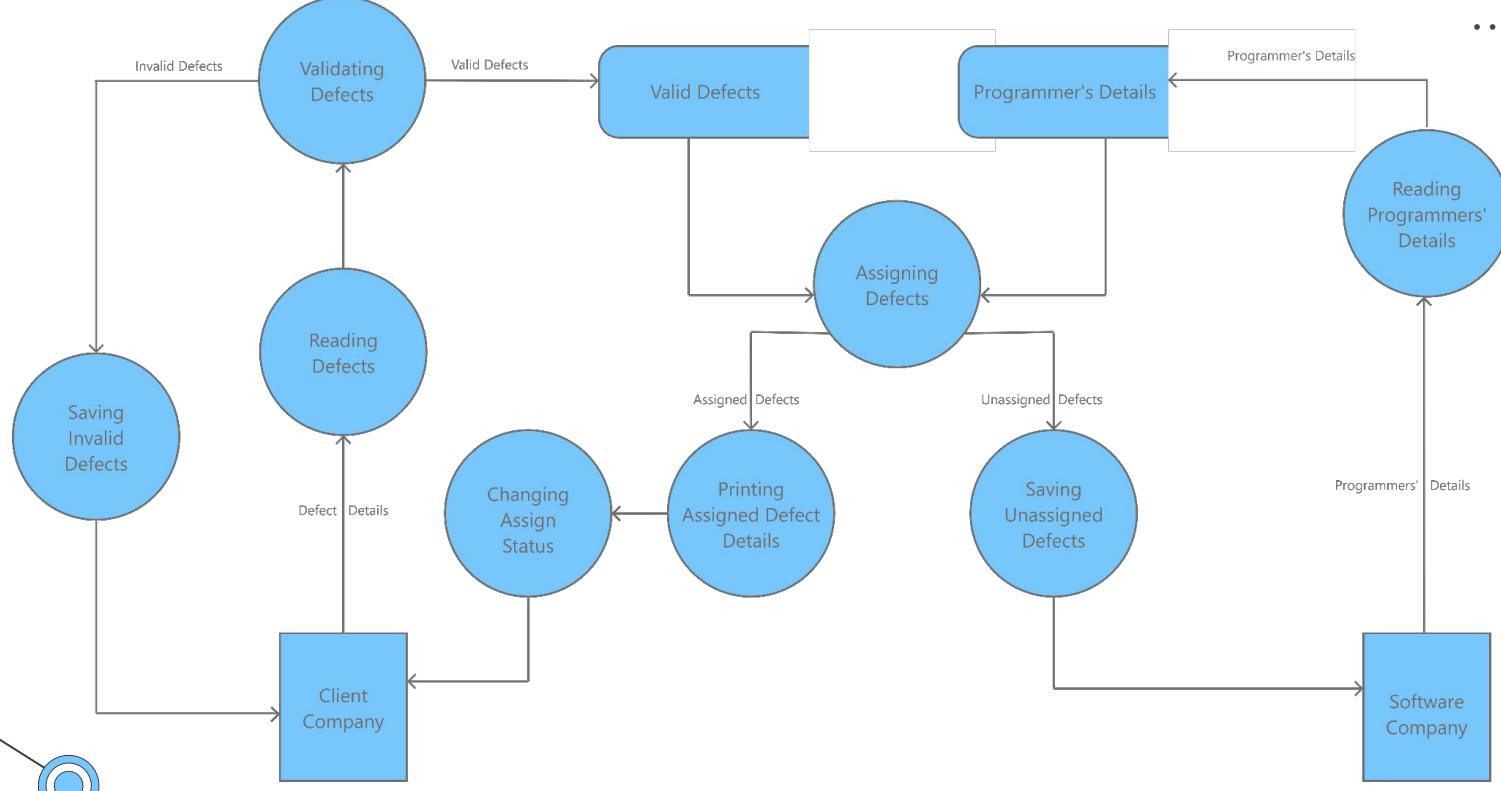
04

Less Efficient

Our Solution



DFD 1



Our Solution is



Multi Threaded

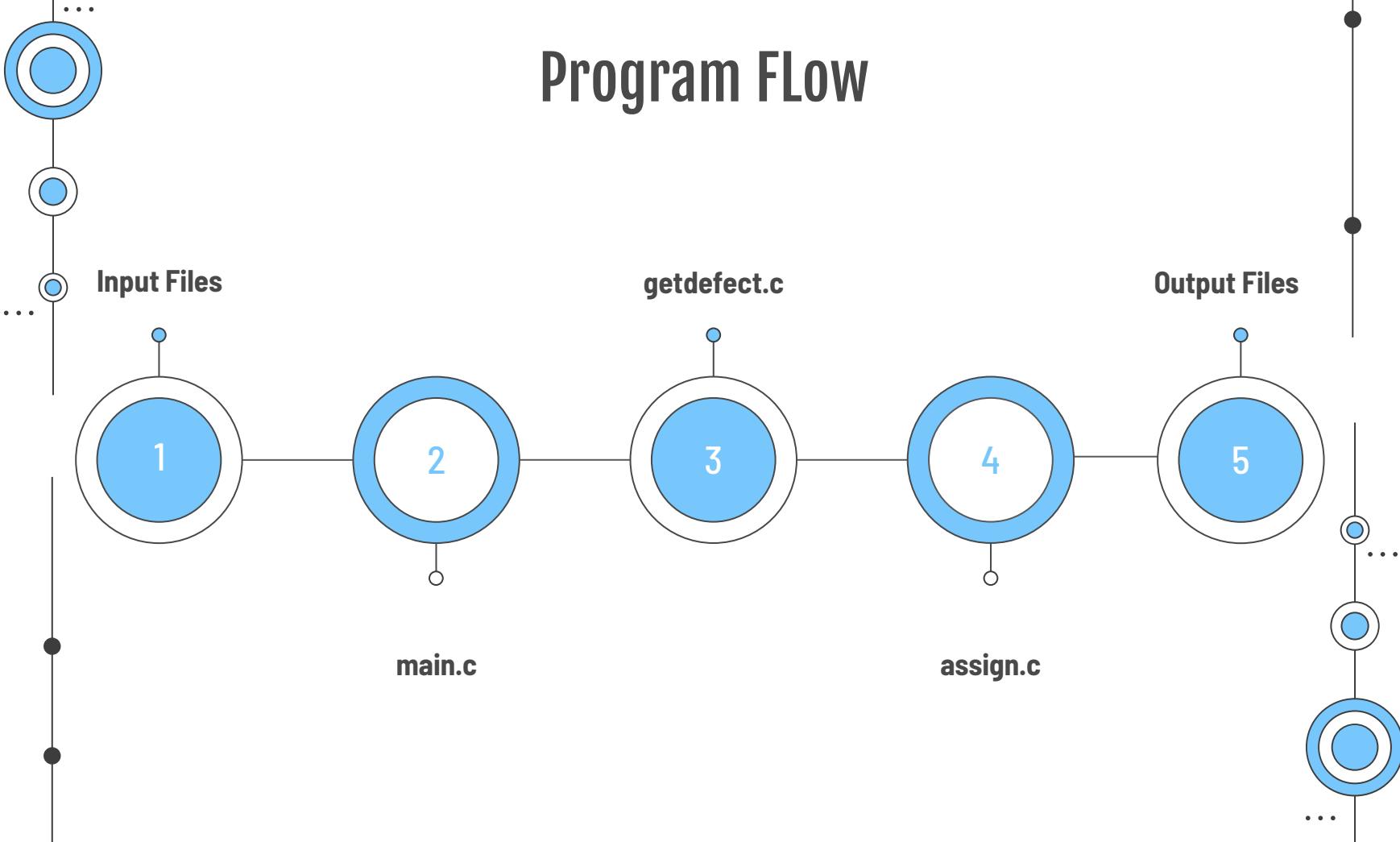


Multi File Multi
Directory System



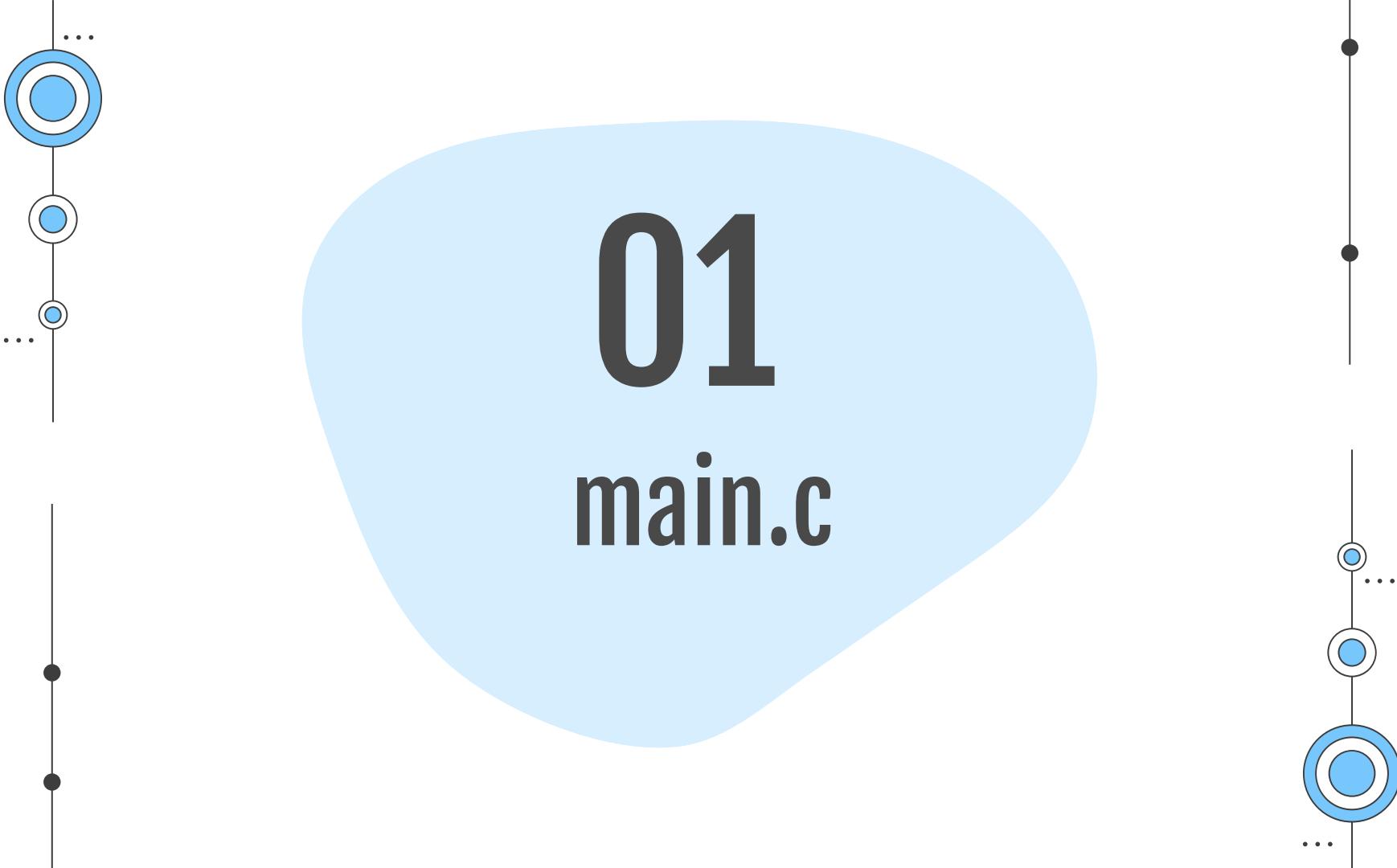
Modular

Program FLow



01

main.c





STRUCTURES



01

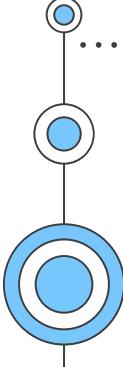
Defect

```
Struct defect{  
    Char *defectID;  
    Char *description;  
    Char *moduleName;  
    Char *functionalArea;  
    Char *date;  
    Char *status;  
    Char *type;  
};
```

02

Employee

```
Struct employee{  
    Char *Id;  
    Char *Name;  
    Char *BUnit;  
    Char *Expertise;  
    Char *Designation;  
    Pthread_mutex_t emplock;  
    Int n_defect;  
    Defect *assigned_arr[MAX];  
};
```



main.c

- Input Defect files are taken as command line arguments.
- Pass file location with the thread to getdefect function
- The returned structure is displayed from the main() function.
- Take location of input files as Command Line arguments.
- Validate Command Line Arguments.
- Structure can be defined to the complete process of the main() function.
- Threads are created for each input file.
- main()function the structure will provide
Initialising,Creating,Waiting.

```
sequenceDiagram
    actor1->>getEmployee: 
    activate getEmployee
        getEmployee->>Employee: 
        activate Employee
            Employee->>getEmployee: 
            deactivate Employee
        deactivate getEmployee
    actor2->>displayEmployee: 
    activate displayEmployee
        displayEmployee->>Employee: 
        activate Employee
            Employee->>displayEmployee: 
            deactivate Employee
        deactivate displayEmployee
    actor1->>getEmployee: 
    activate getEmployee
        getEmployee->>Employee: 
        activate Employee
            Employee->>getEmployee: 
            deactivate Employee
        deactivate getEmployee
    actor2->>displayEmployee: 
    activate displayEmployee
        displayEmployee->>Employee: 
        activate Employee
            Employee->>displayEmployee: 
            deactivate Employee
        deactivate displayEmployee
```

getEmployee

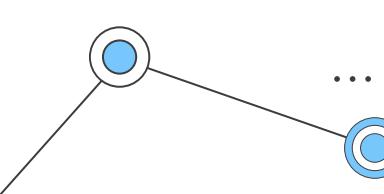
- Takes array of employee structure as an argument and opens employee .txt database.
- Open input file with employee data using File pointer
- Display error if file can't be opened for any reason
- Store these information in employee structure.
- Store all employee in the array

displayEmployee

Takes array of valid defects entry as argument.
Defects assigned to programmers to be displayed along with defect description, module name, functional area, filed-on date type, Emp ID and EMP Name.

02

getdefect.c



Functions



1.Get Defect

Reads defects from the input
and calls checkValidity
and call assignEmployee for
valid defect

2.Check Validity

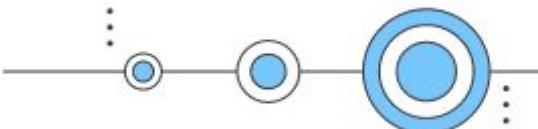
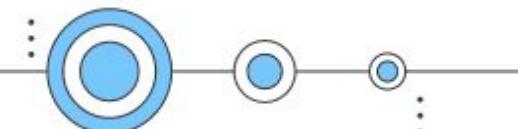
Returns true if count is
equal to 7 and else return
false

3.Valid defect

It stores the valid defect
in Defect structure

4.Invalid Defect

Display invalid defect
message and append it into
invalidDefect.txt



1. getdefect()



It takes one argument, that is :

1. Input file

It reads defects from the input file

calls checkValidity if true call validDefect
Else call invalidDefect

It calls assignEmployee for valid defect

.

2. Check Validity

It takes one argument, that is :

1. String pointer

We initialize count = 0;

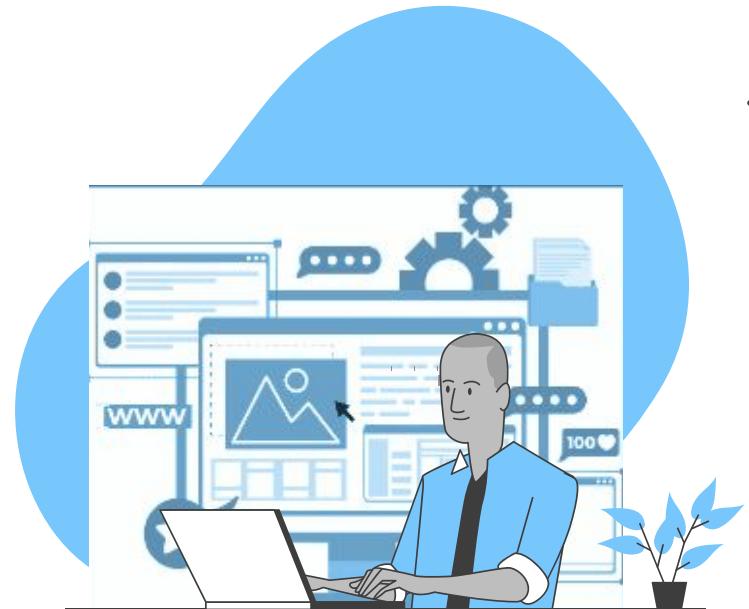
It divides the string into token using strtok
And increment count for each parameter

: is delimiter

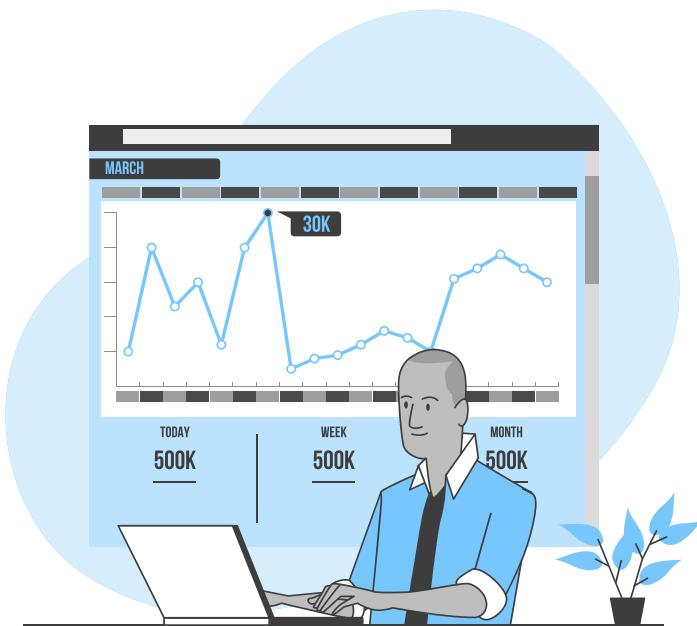
```
char *token = strtok(s, ":");
```

If count is equal to 7 , it returns true

Else returns false



3. ValidDefect



It takes two argument, they are :

1. String pointer
2. defect structure

It tokenizes the string using strtok
And dynamically allocates memory and
stores them into their respective
Parameter in defect structure.

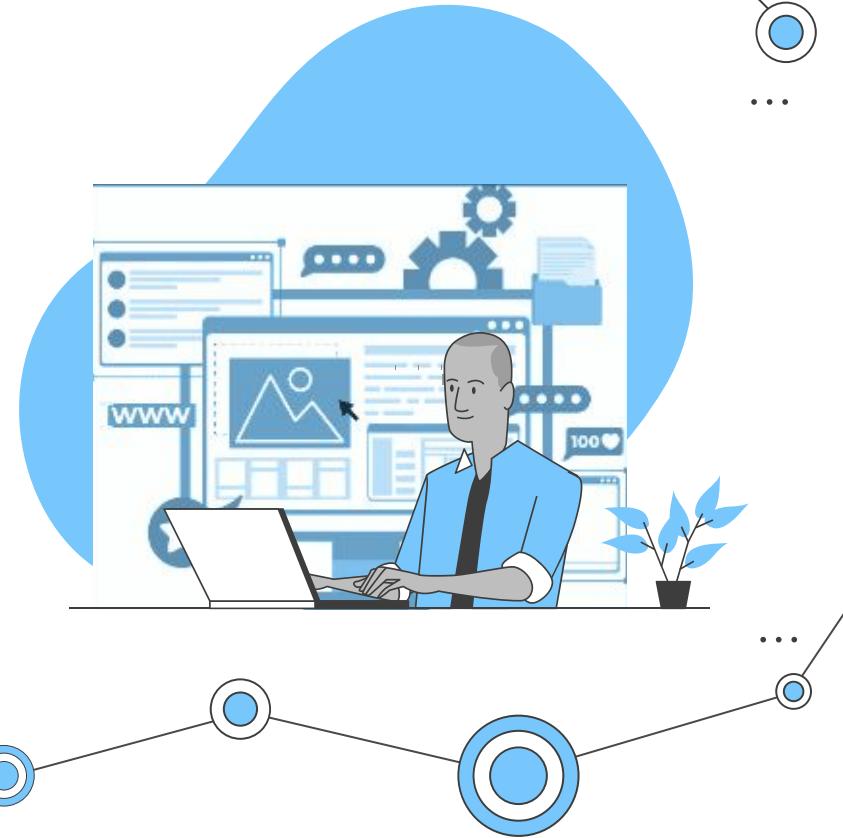
4. InValidDefect

It takes one argument, that is :

1. String pointer

It display invalid defect message with
defect id

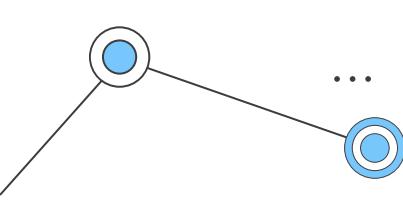
and appends it into invalidDefect.txt



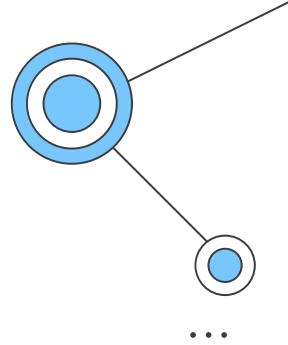
03

assign.c





Functions



01

`assignEmployee()`

Checks for defects
with status as open.

03

`unassignedDefect()`

Copies all unassigned
Defect into separate
text file.

02

`searchProgrammer()`

Searches for
programmer suitable
of open defect.

04

`createEmployeeFile()`

Creates separate files
for each programmer
who have at least one
defect assigned to him

1. assignEmployee()



It loops through all defects and checks their status.

If status is open then it calls searchProgrammer() Function.

Defects with any other status are ignored.

2. searchProgrammer()

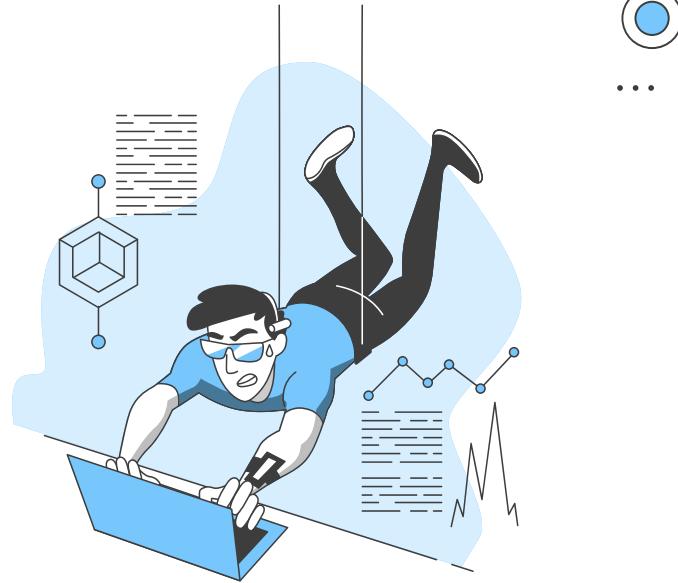
It takes three arguments, they are:

1. Pointer to Defect Structure
2. Array of Employee Structure
3. Total Employee Count

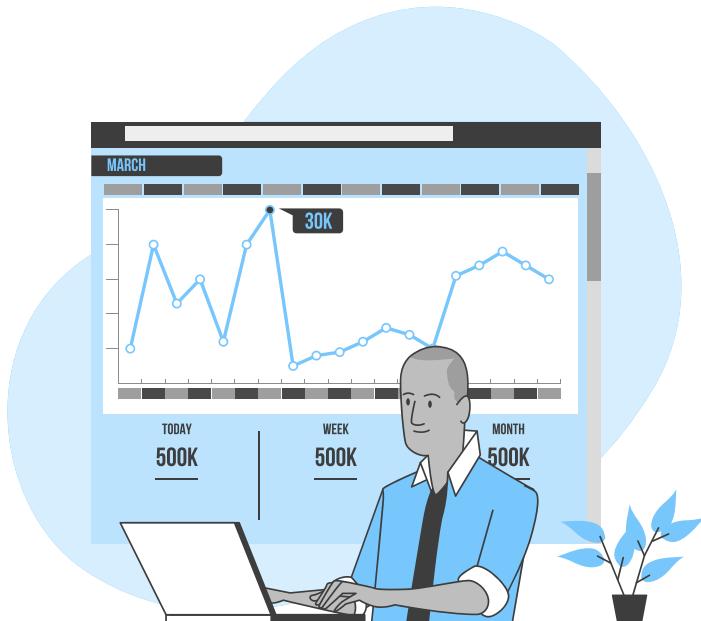
Now for each defect passed, it searches for programmer in the array, with matching criteria.

If there is a match, the defect is assigned to the programmer and createEmployeeFile() Function is called.

If no programmer could be found then uassignedDefect() Function is called for that defect.



3. unassignedDefect()



It takes one argument, it is:

1. Pointer to Defect Structure

Now it opens “uassignedDefect.txt” file and appends all information of current defect to the last line of the file.

If file is not present it creates a new one.

Displays proper error if there is any issue with opening or closing of file.

4. createEmployeeFile()

It takes two arguments, they are:

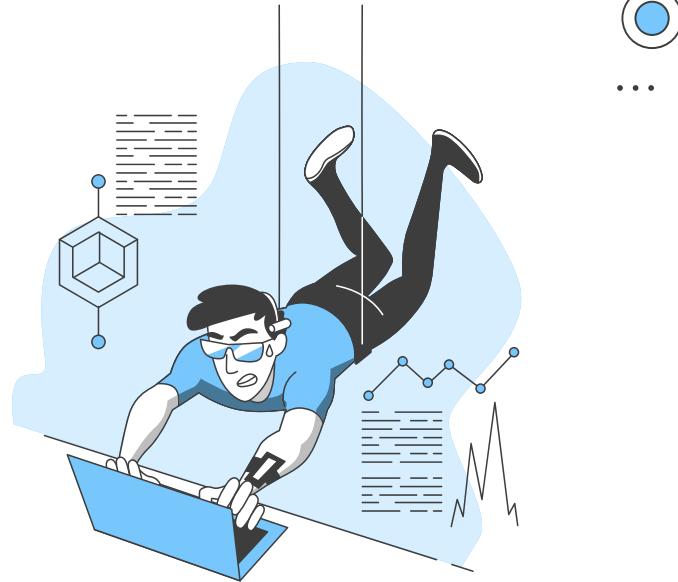
1. Pointer to Employee Structure
2. Pointer to Defect Structure

Creates separate file for each employee, if not present already, who have at least one defect assigned to them.

Filename: <EmpID>_assignments.txt

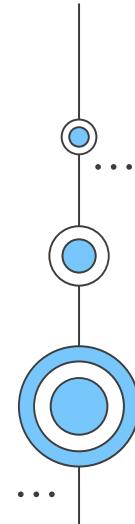
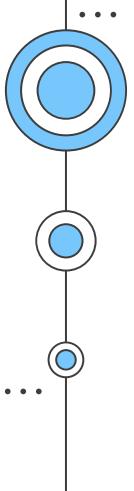
Appends employee and defect information into the file.

Displays proper error if there is any issue with opening or closing of employee file.



Testing

Unit testing and Integration testing



Files

Defect.txt

1. F001:Column values in BOM reports are incorrect:Aircraft design:BOM reports:21/08/2022:open:fatal
2. F002:Unit prices are not shown while preparing invoice:Invoices:Display products:23/04/2022:close:fatal
3. N001:BOM report columns not aligned properly:Aircraft design:BOM reports:21/08/2022:open:niceToHave
4. O001:Aircraft:BOM reports:21/08/2022:open:niceToHave
5. F003:Column values in client dashboard not shown:Aircraft design:Manage customers:21/08/2022:open:fatal

Employee.txt

1. A123:Suresh Panchal:UK Telecom:BOM report:Principal engineer
2. D012:J K Laxmi:Finacle Systems:Display products:Junior programmer
3. C015:Sandeep Khaire:UK Telecom:Manage customers:Senior programmer
4. D002:Mahesh Katkar:Pharmaceutical Systems:Licensing:Principal engineer
5. B011:Sreehari Bhaskar:DBMS Department>Data manager:Senior Analyst



Different Types of Test Cases Covered

- Less than Actual Parameters
 - More than Actual Parameters
 - No Programmer is Found for Defect
 - More than one Programmer is Found
 - File is not Opening or Invalid file type
 - Wrong Format of Defects or Employee in File
 - Multiple Defect.txt Files
 - Defect Status Close/Open Or Something else
 - Checking for uppercase and lowercase
 - Defect With same Defect IDs
 - Date Format is Wrong
 - Space ' ' is Considered as Character EX:- : BOM report :--
- 

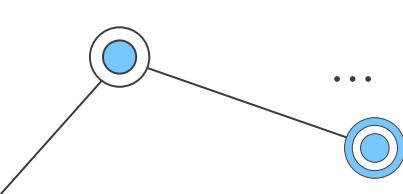
TEST CASES EXAMPLES

Sunny Testcases

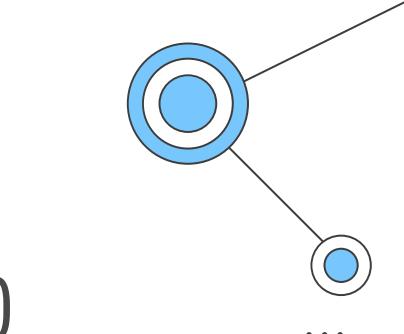
1. "F001:Column values in BOM reports are incorrect:Aircraft design:BOM report:21/08/2022:open:fatal";
2. "N001:BOM report columns not aligned properly:Aircraft design:BOM report:21/08/2022:open:niceToHave";
3. "F002:Unit prices are not shown while preparing invoice:Invoices:Display products:23/04/2022:close:fatal";

Rainy Testcases

1. "ID01: : : ::open:";
2. "O001:Aircraft:BOM reports:21/08/2022:open:niceToHave";
3. "M001:Sed ut perspiciatis unde omnis iste:Aircraft design:consequatur:20/08/2002:open:lagging:lagging";



Unit Testing for checkValidity function



CUnit - A unit testing framework for C - Version 2.1-3

<http://cunit.sourceforge.net/>

	Type	Total	Ran	Passed	Failed	Inactive
suites	1	1	n/a	0	0	
tests	1	1	1	0	0	
asserts	5	5	5	0	n/a	

Elapsed time = 0.000 seconds

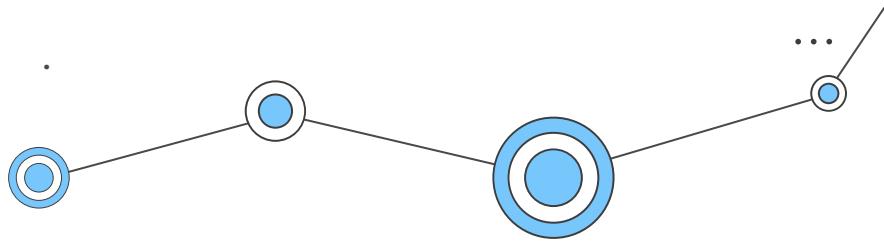
Check Validity()

It takes one argument, that is :

1. String pointer

It divides the string into token using strtok
And increment count for each.

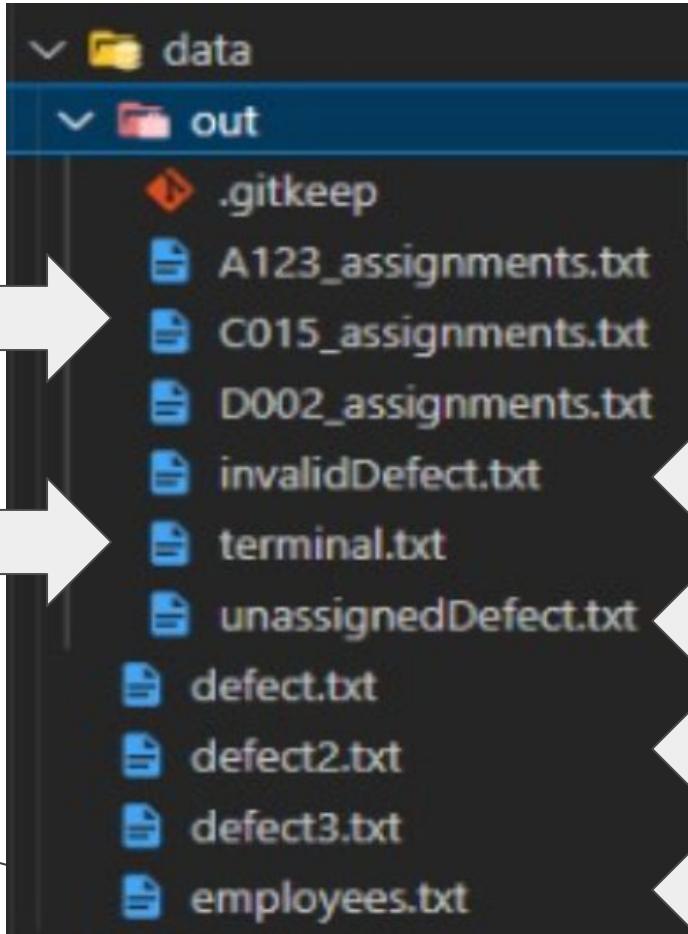
If count is equal to 7 , it returns true
Else returns false



Integration Testing Output

Assigned Employee

Terminal Output



Invalid Defect File

Unassigned Defect File

Defect Files

Employee File

Integration Testing - Terminal output

--- Total files in queue: 1 ---

--- Creating Thread for file 1: ../data/defect.txt ---

--- Processing file: ../data/defect.txt

Defect ID: O001 contains insufficient information.

Defect ID: F003 contains insufficient information.

--- Total Valid Defects: 4 ---

ID: F001 Status: open

ID: F002 Status: close

ID: N001 Status: open

ID: K002 Status: open

--- Total Employee: 4 ---

ID: A123 Name: Suresh Panchal

ID: D012 Name: J K Laxmi

ID: C015 Name: Sandeep Khaire

ID: D002 Name: Mahesh Katkar

--- Searching Programmer for defect Id: F001 ---

Defect Id: F001

Status: Assigned

Module Name: Aircraft design

Functional Area: BOM report

Description: Column values in BOM reports are incorrect

Has been assigned to:-

Employee Id: A123

Employee Name: Suresh Panchal

--- Searching Programmer for defect Id: N001 ---

Defect Id: N001

Status: Assigned

Module Name: Aircraft design

Functional Area: BOM report

Description: BOM report columns not aligned properly

Has been assigned to:-

Employee Id: A123

Employee Name: Suresh Panchal

--- Searching Programmer for defect Id: K002 ---

--- Programmer not found for defect Id: K002 ---

TEAM GROUP 3

AMAN BHASKAR

KARAN NARESHBHAI TELAR

SREEHARI P S

SINGULURI SAI VAMSEE

KRISHNA CHAITANYA CHEKKA



Thanks!

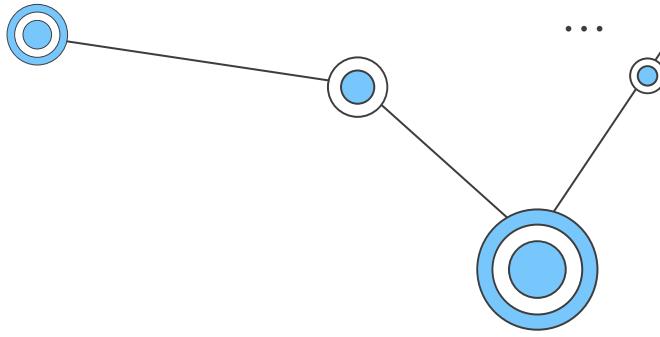
Do you have any questions?



sreeharipavvatta/CGSprint1

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Switch Case



Case 1

dynamically allocate memory for **defectID** and store token value and BREAK statement

Case 2

dynamically allocate memory for **description** and store token value and BREAK statement

Case 3

dynamically allocate memory for **moduleName** and store token value and BREAK statement

Case 4

dynamically allocate memory for **functionalArea** and store token value and BREAK statement

Case 5

dynamically allocate memory for **data** and store token value and BREAK statement

Case 6

dynamically allocate memory for status and store token value and BREAK statement

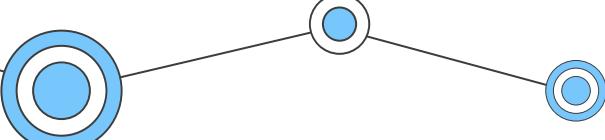
Case 7

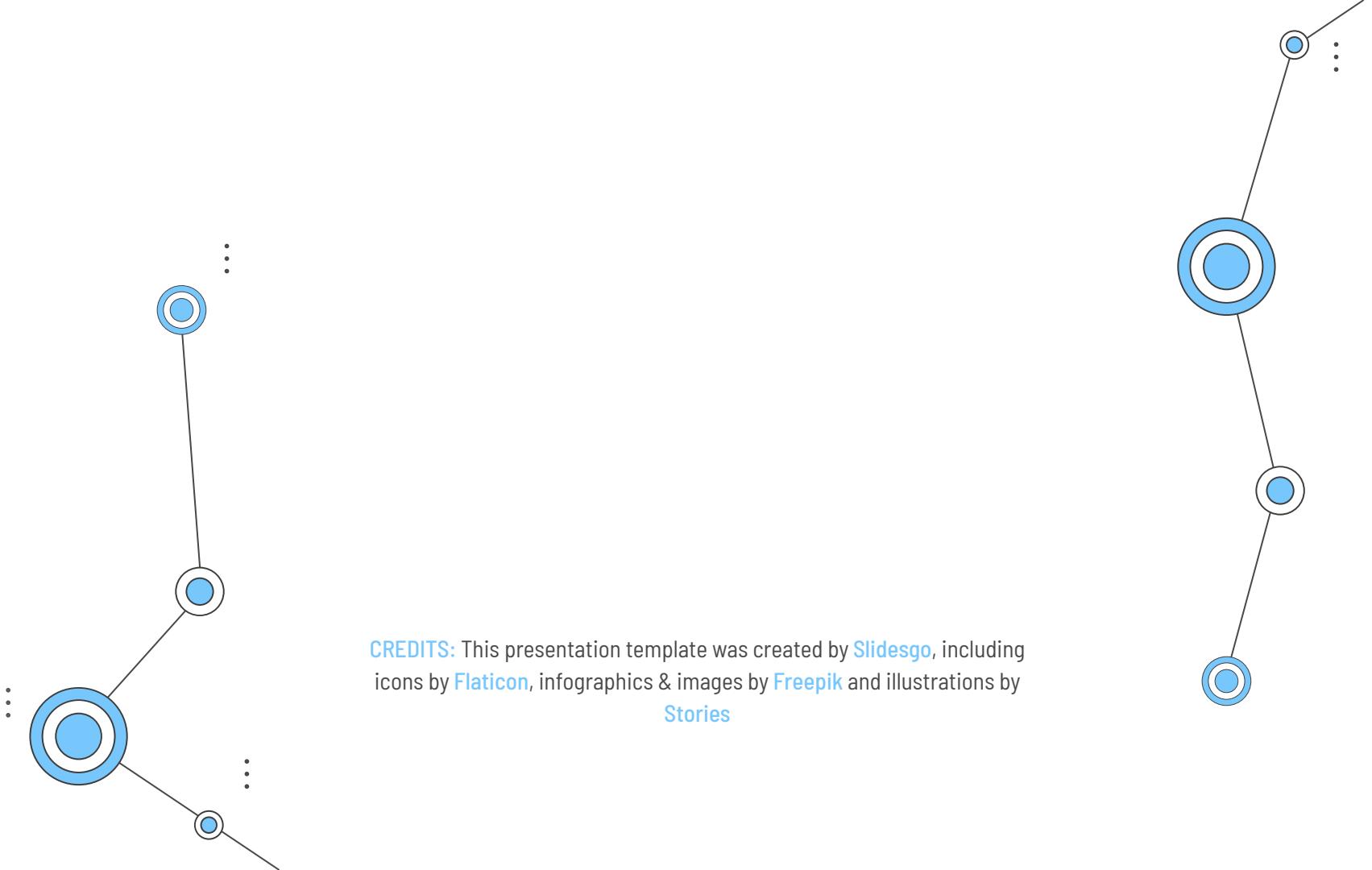
dynamically allocate memory for type and store token value and BREAK statement

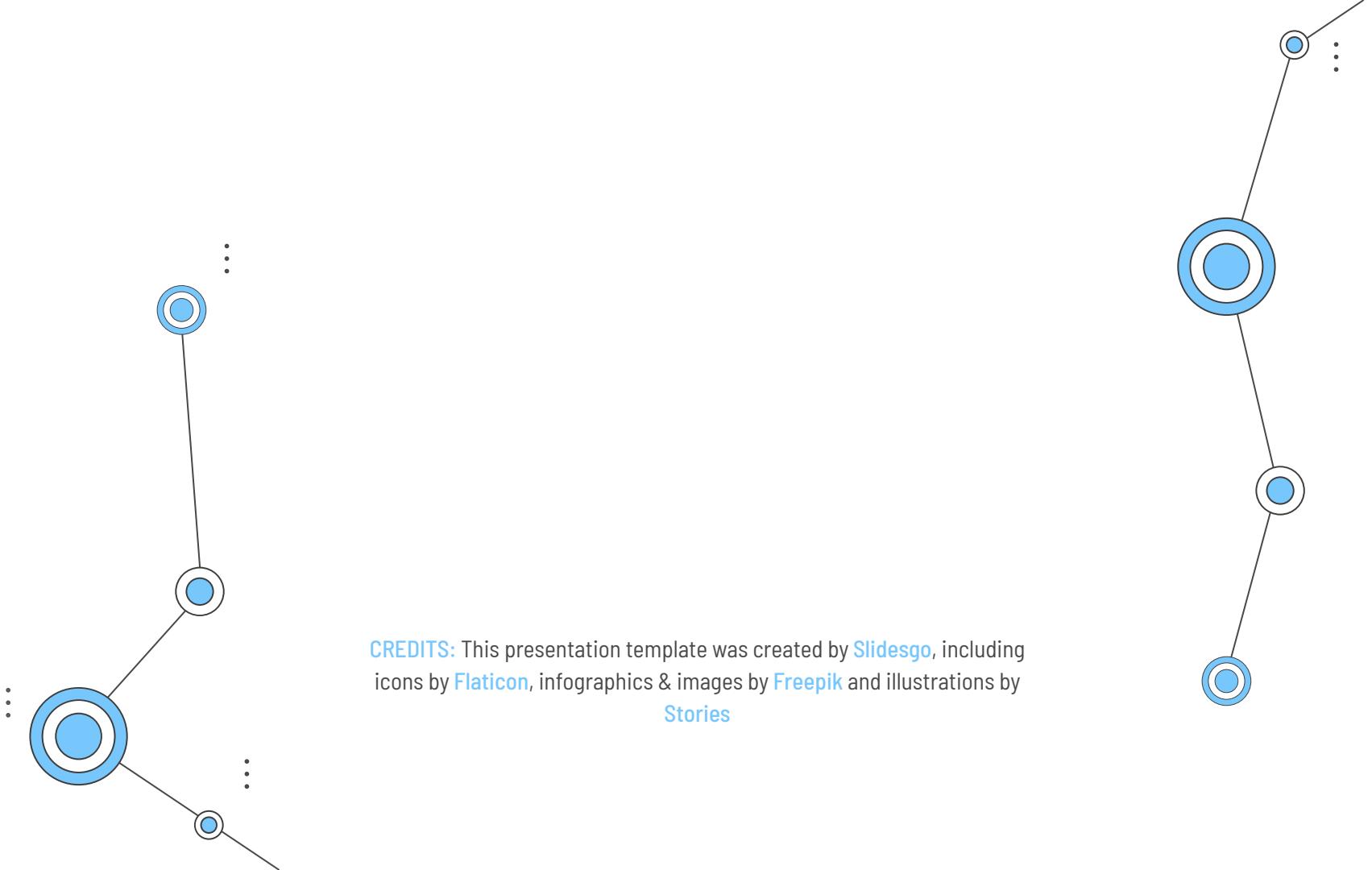
Default

BREAK statement

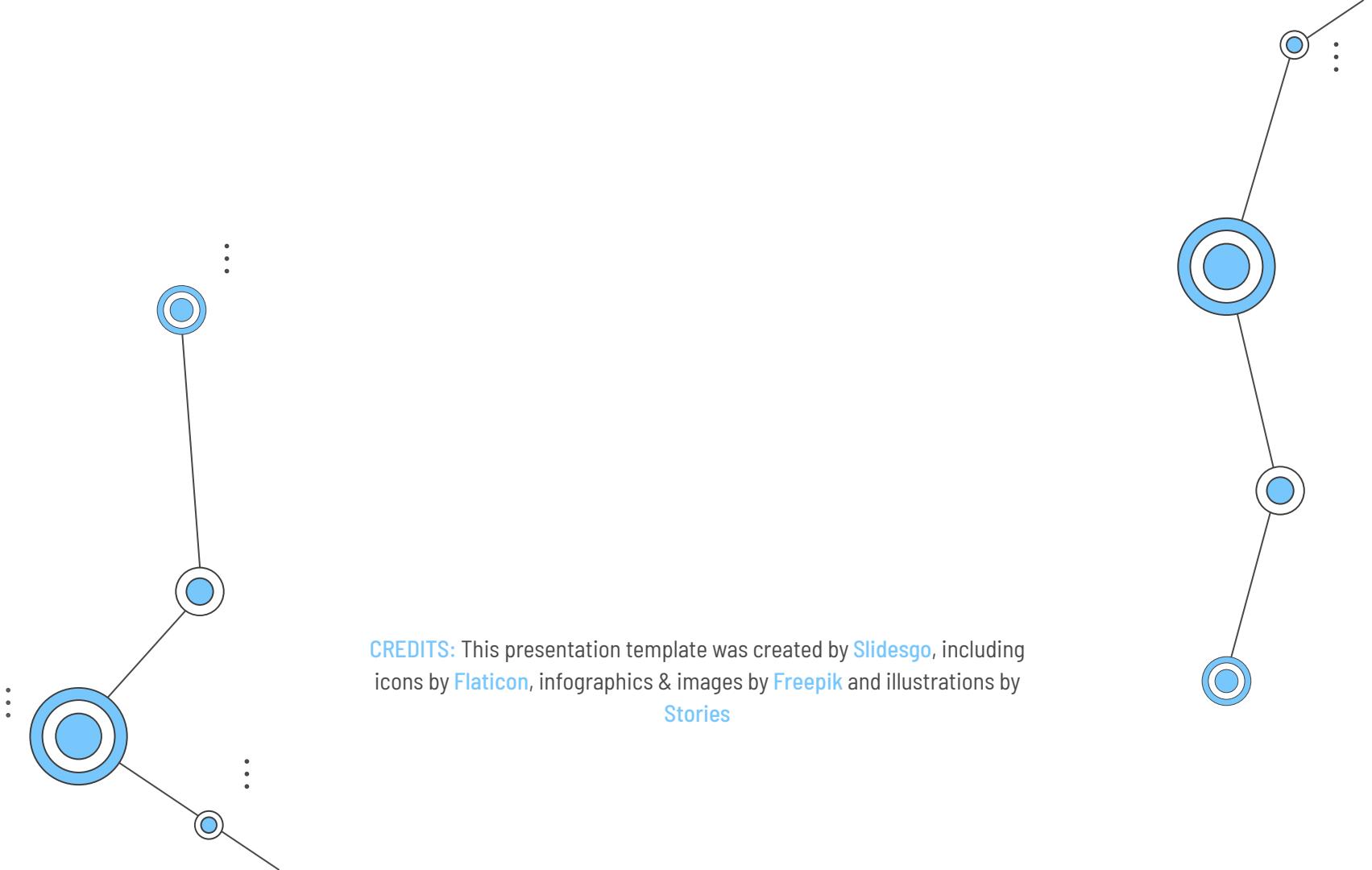
...







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2. An assortment of illustrations that are suitable for use in the presentation can be found in the [alternative resources](#) slide.
3. A [thanks](#) slide, which you must keep so that proper credits for our design are given.
4. A [resources](#) slide, where you'll find links to all the elements used in the template.
5. [Instructions for use](#).
6. Final slides with:
 1. The [fonts and colors](#) used in the template.
 2. A selection of [illustrations](#). You can also customize and animate them as you wish with the online editor. Visit Stories by Freepik to find more.
 3. More [infographic resources](#), whose size and color can be edited.
 4. Sets of [customizable icons](#) of the following themes: general, business, avatar, creative process, education, help & support, medical, nature, performing arts, SEO & marketing, and teamwork.

You can delete this slide when you're done editing the presentation.

Table of Contents



Problem & Solution

You could describe the topic of the section here



Market Analysis and Target

You could describe the topic of the section here



Our Process

You could describe the topic of the section here



Our Consultants

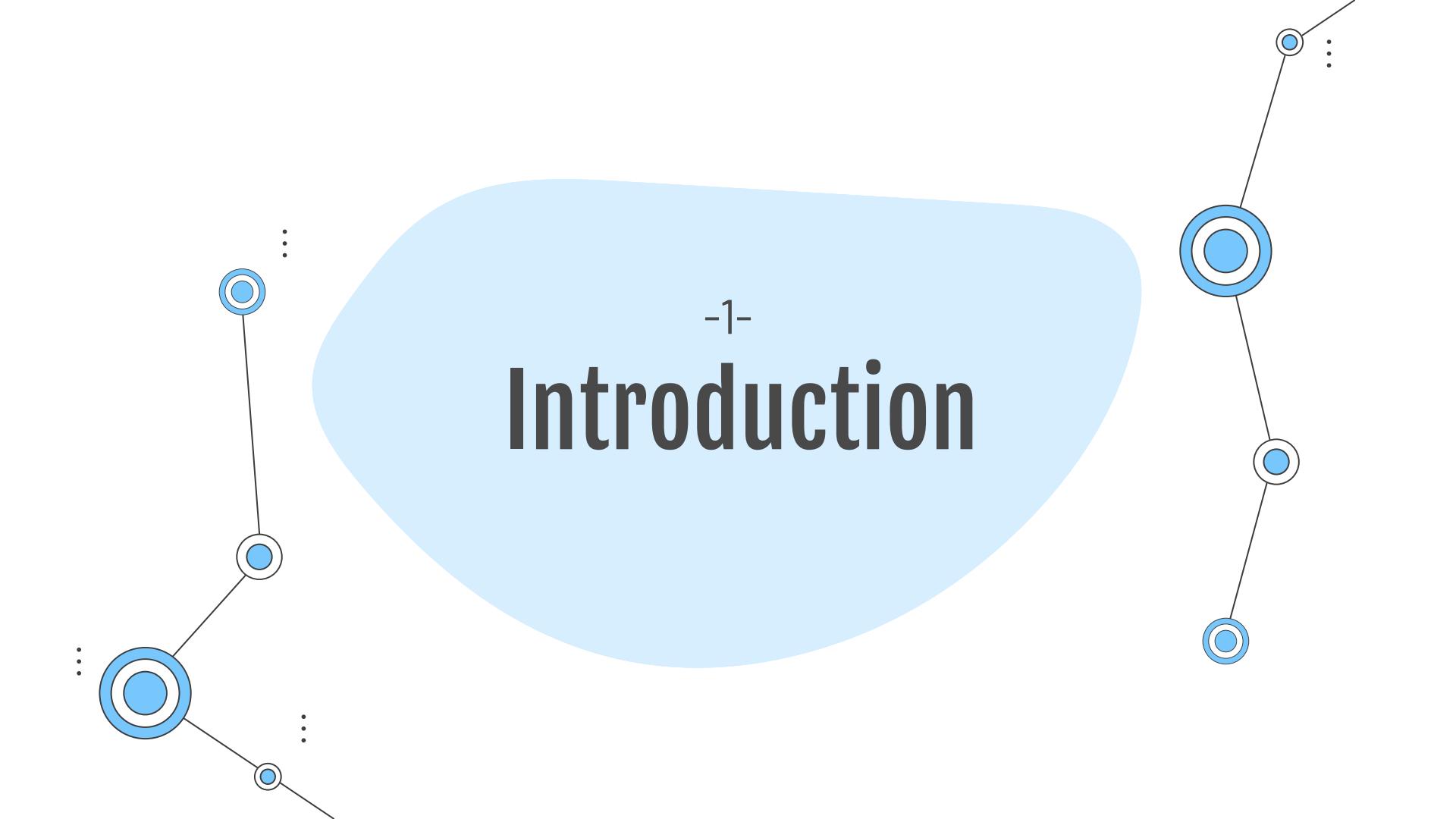
You could describe the topic of the section here



01

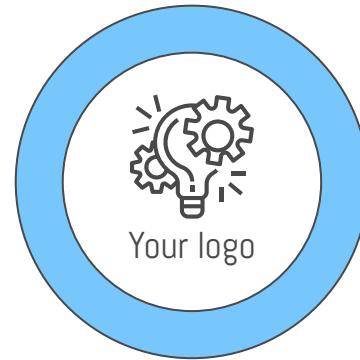
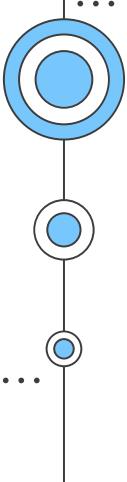
Company

Enter a subtitle here if you need it



Introduction

-1-

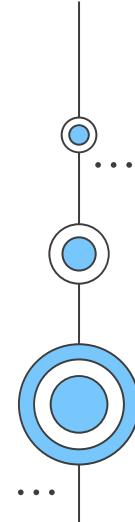


Our Company

Mercury is the closest planet to the sun and the smallest one in the solar system—it's only a bit larger than the Moon.

The planet's name has nothing to do with the liquid metal, since Mercury was named after the Roman messenger god

...





Our Solutions

01

Mercury

Mercury is the closest planet to the sun

02

Venus

Venus is the second planet from the sun

03

Jupiter

Jupiter is the biggest planet of them all

04

Neptune

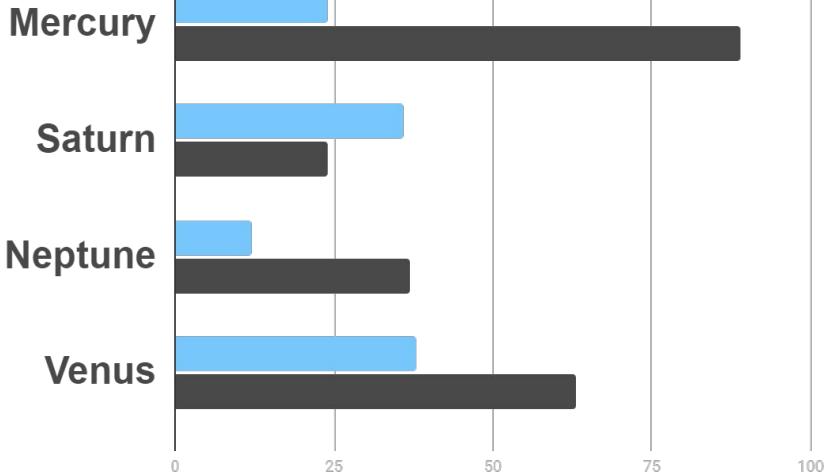
Neptune is the farthest planet from the Sun

Main Competitors

	Mercury	Jupiter	Venus	Neptune
🚀	✖	✖	✖	✖
💰	✖	✓	✖	✓
🏆	✓	✖	✓	✖
coins	✓	✓	✖	✖

Market Research

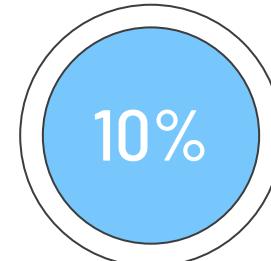
Evolution



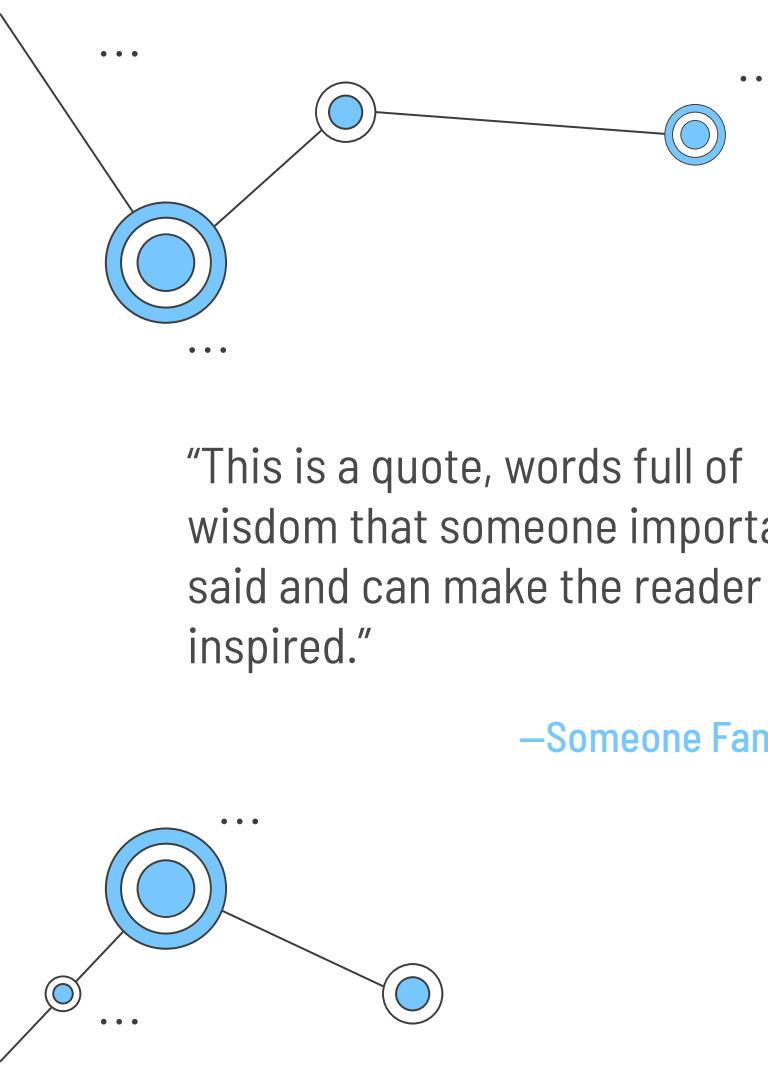
To modify this graph, click on it, follow the link, change the data and paste the resulting graph here



Gross Revenue in the Sector

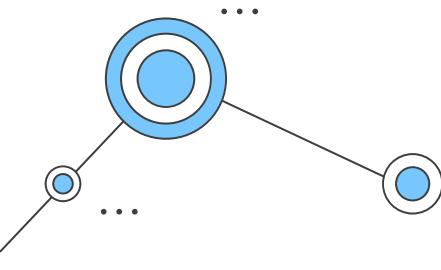


Sector Growth



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

—Someone Famous



Awesome Words

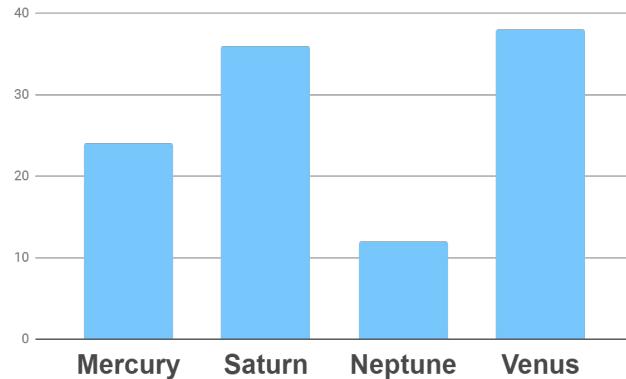


Analysis

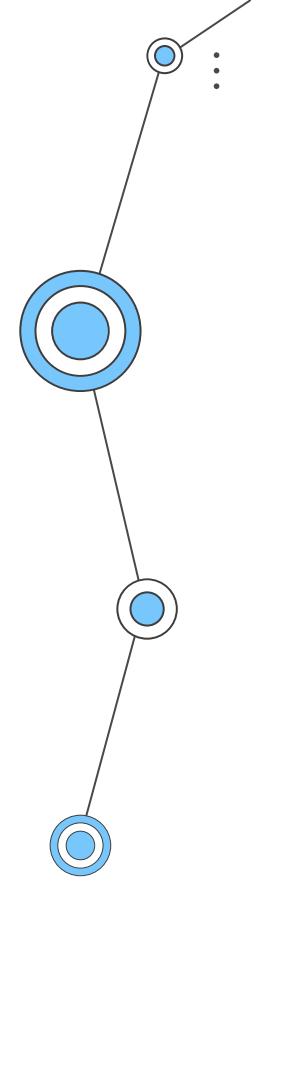
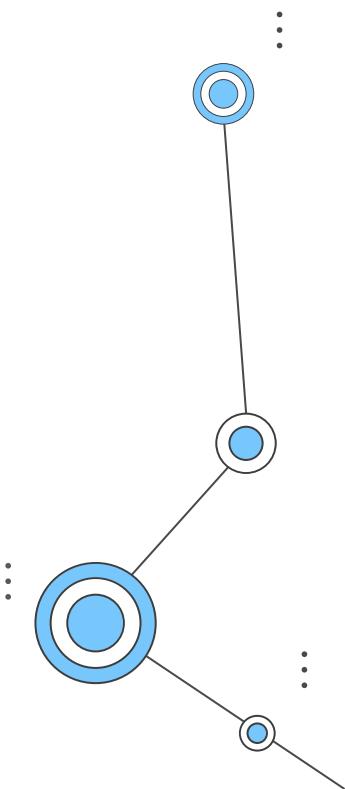
Outreach



Top Rated Values



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



333,000.00

earths is the sun's mass

24h 37m 23s

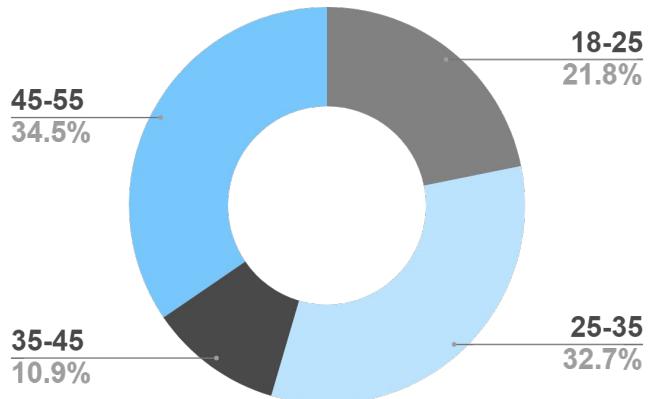
is Jupiter's rotation period

386,000 km

is the distance to the Moon

Target

Age

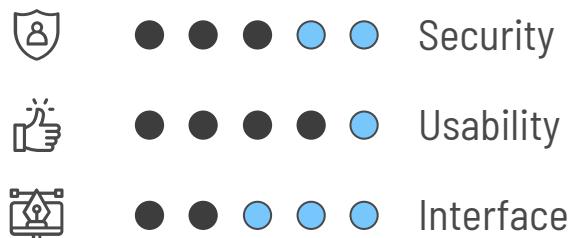


To modify this graph, click on it, follow the link,
change the data and paste the new graph here

Gender



Interests



Our Process

Mercury is the closest planet to the Sun

Venus is the second planet from the Sun

Day 1

Day 2

Day 3

Day 4

Jupiter is the biggest planet in the Solar System

Neptune is the farthest planet from the Sun

Whoa!

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

Our Consultants

...
Jane Patterson

Mercury is the
closest planet to
the Sun

...
John James

Venus is the
second planet
from the Sun

...
Joe Doe

Neptune is the
farthest planet
from the Sun



Our Partners



Mercury

Mercury is the closest planet to the Sun



Jupiter

Jupiter is the biggest planet of them all



Neptune

Neptune is the farthest planet from the Sun



Saturn

Saturn is the ringed one and a gas giant



Mars

Despite being red, Mars is actually a cold place



Venus

Venus is the second planet from the Sun

Testimonials

Helena James

"Mercury is the closest planet to the Sun"

Jenna Doe

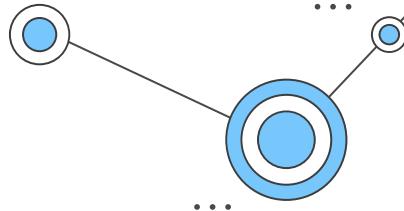
"Jupiter is the biggest planet of them all"

Mary Patterson

"Neptune is the farthest planet from the Sun"



Awards



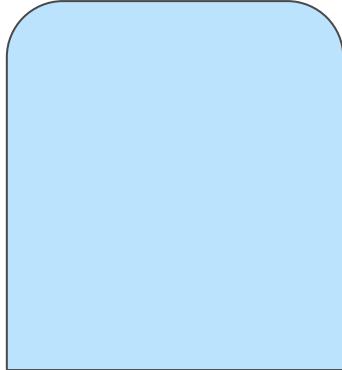
Mercury

It's the closest planet
to the Sun



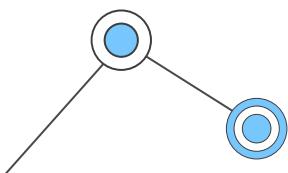
Venus

Venus is the second
planet from the Sun



Jupiter

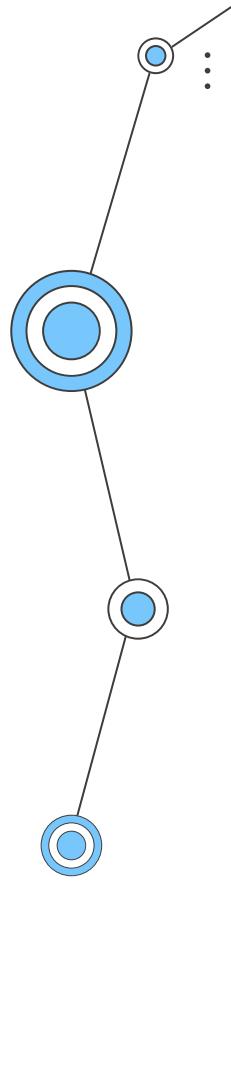
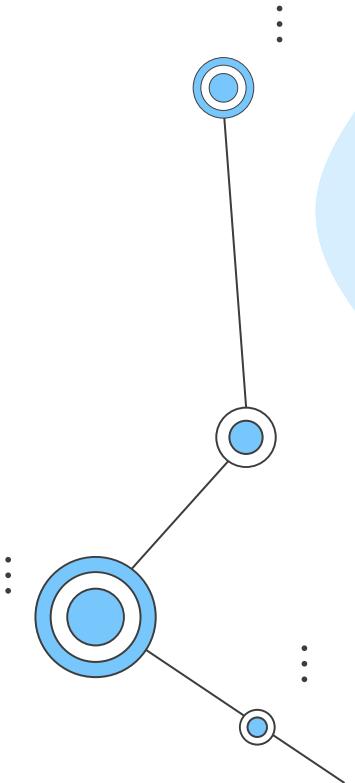
Jupiter is the biggest
planet of them all





498,300,000

Big numbers catch your
audience's attention



Upcoming Goals

January

February

March

April

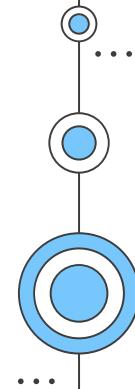
Goal 1



Phase 1



Phase 2



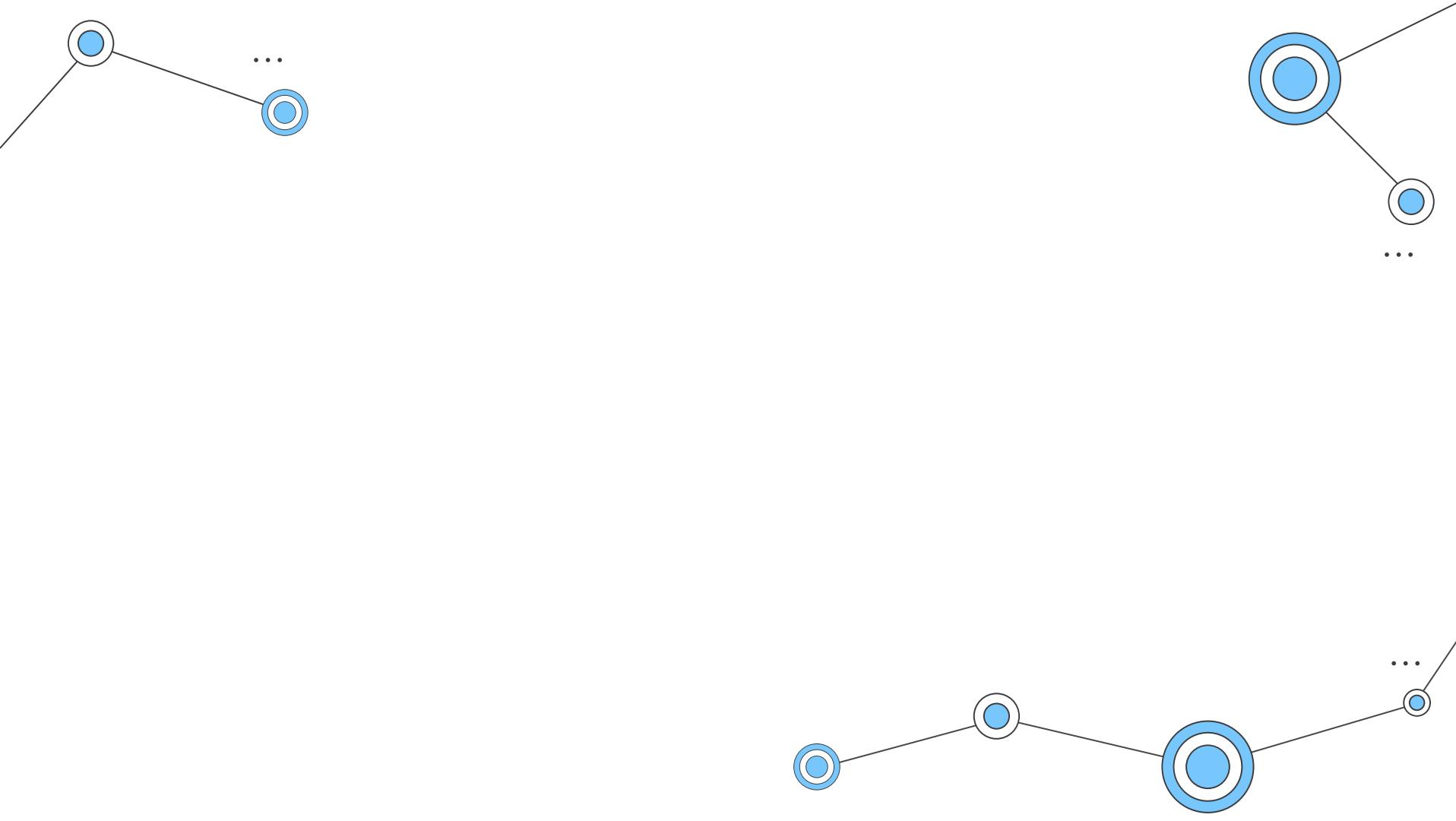
The Slide Title Goes Here!



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



A Picture Is Worth a
Thousand Words



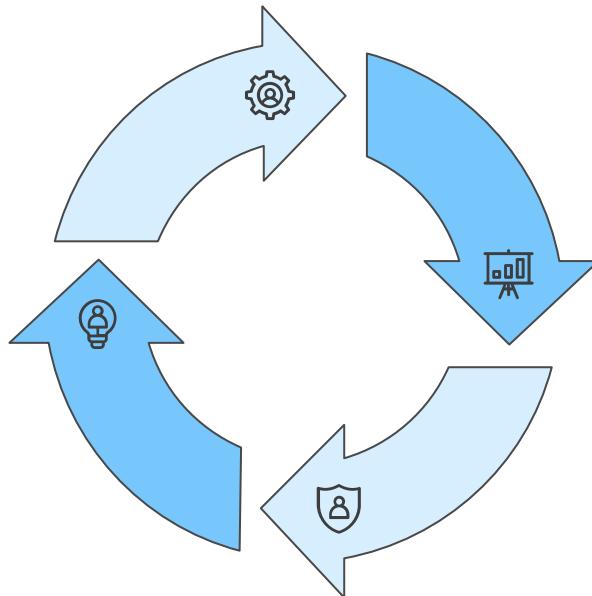
Infographics Make Your Idea Understandable...

Mercury

Mercury is the closest planet to the Sun

Jupiter

Jupiter is the biggest planet of them all

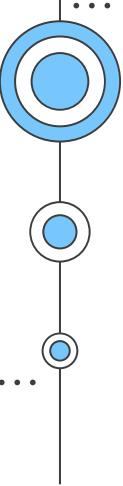


Neptune

Neptune is the farthest planet from the Sun

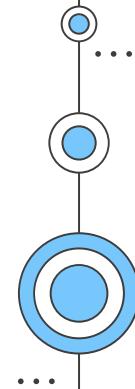
Saturn

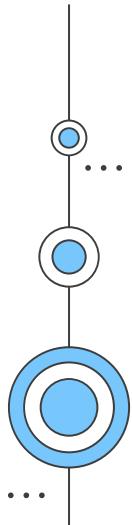
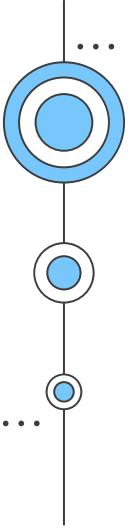
Saturn is the ringed one and a gas giant



...And the Same Goes for Tables

	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





Maybe You Need to Divide the Content

01

Neptune

Neptune is the farthest planet from the Sun and the fourth-largest in the Solar System

02

Jupiter

Jupiter is the biggest planet in the Solar System and the fourth-brightest one

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Thanks!

Do you have any questions?

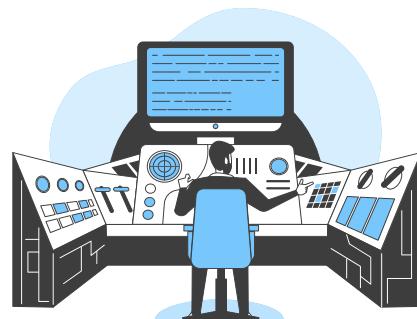
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- Close-up of woman using a laptop
- Beautiful young woman holding laptop on pink backdrop

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- Project Management Icon

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Pana



Amico



Bro



Rafiki

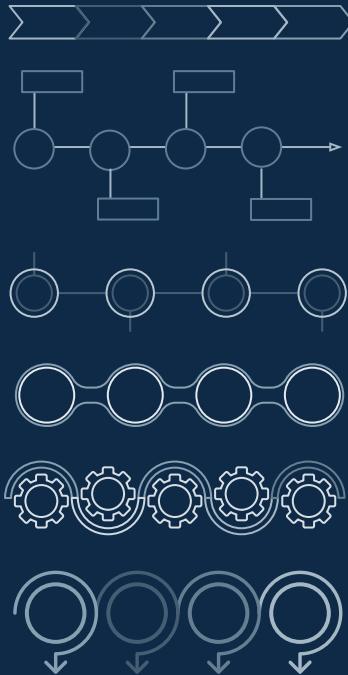
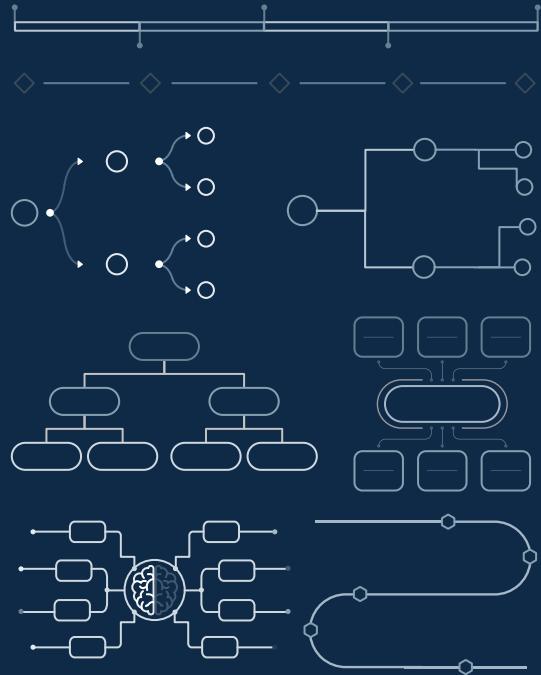
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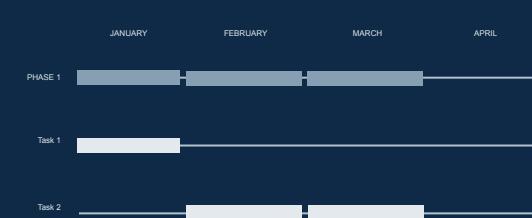
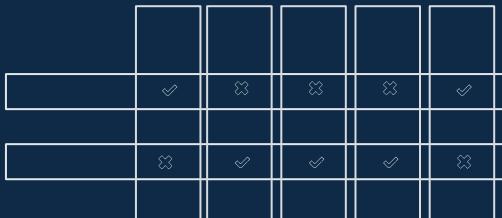
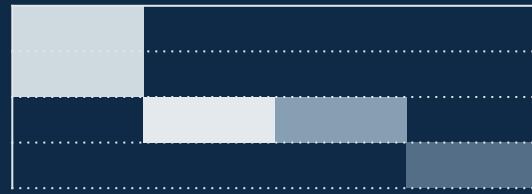
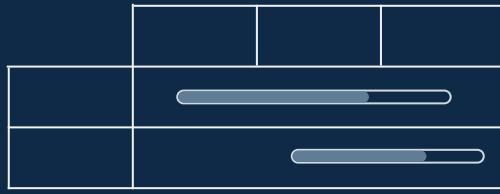
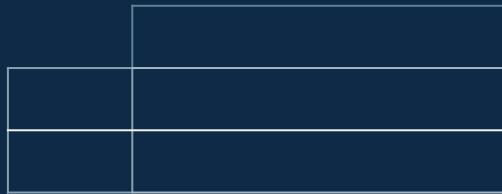
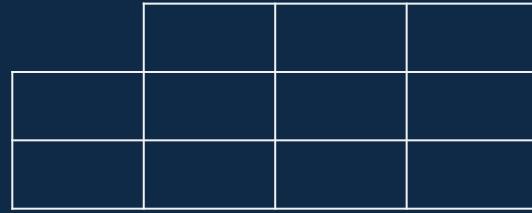
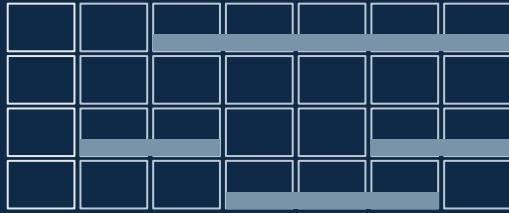
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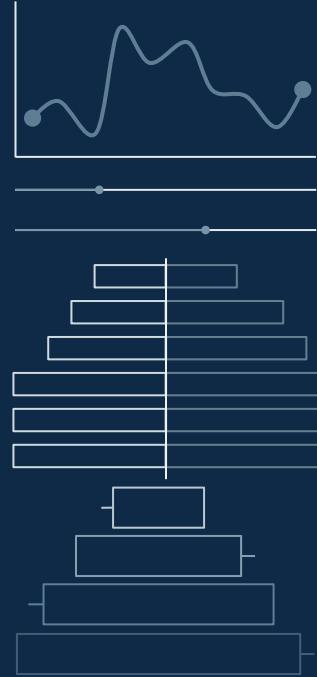
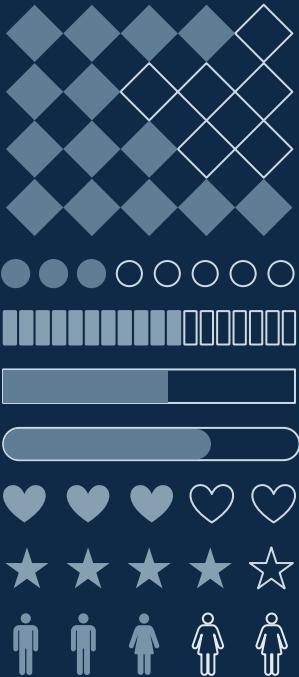
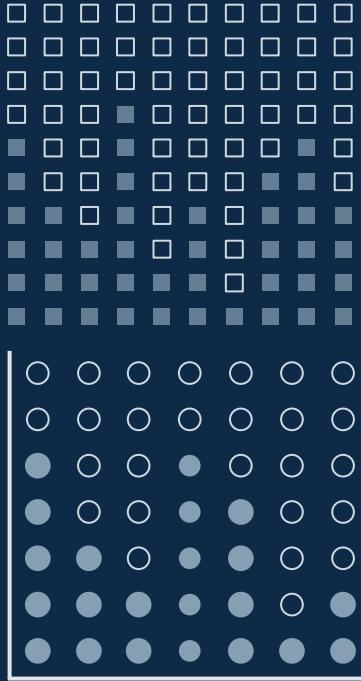












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