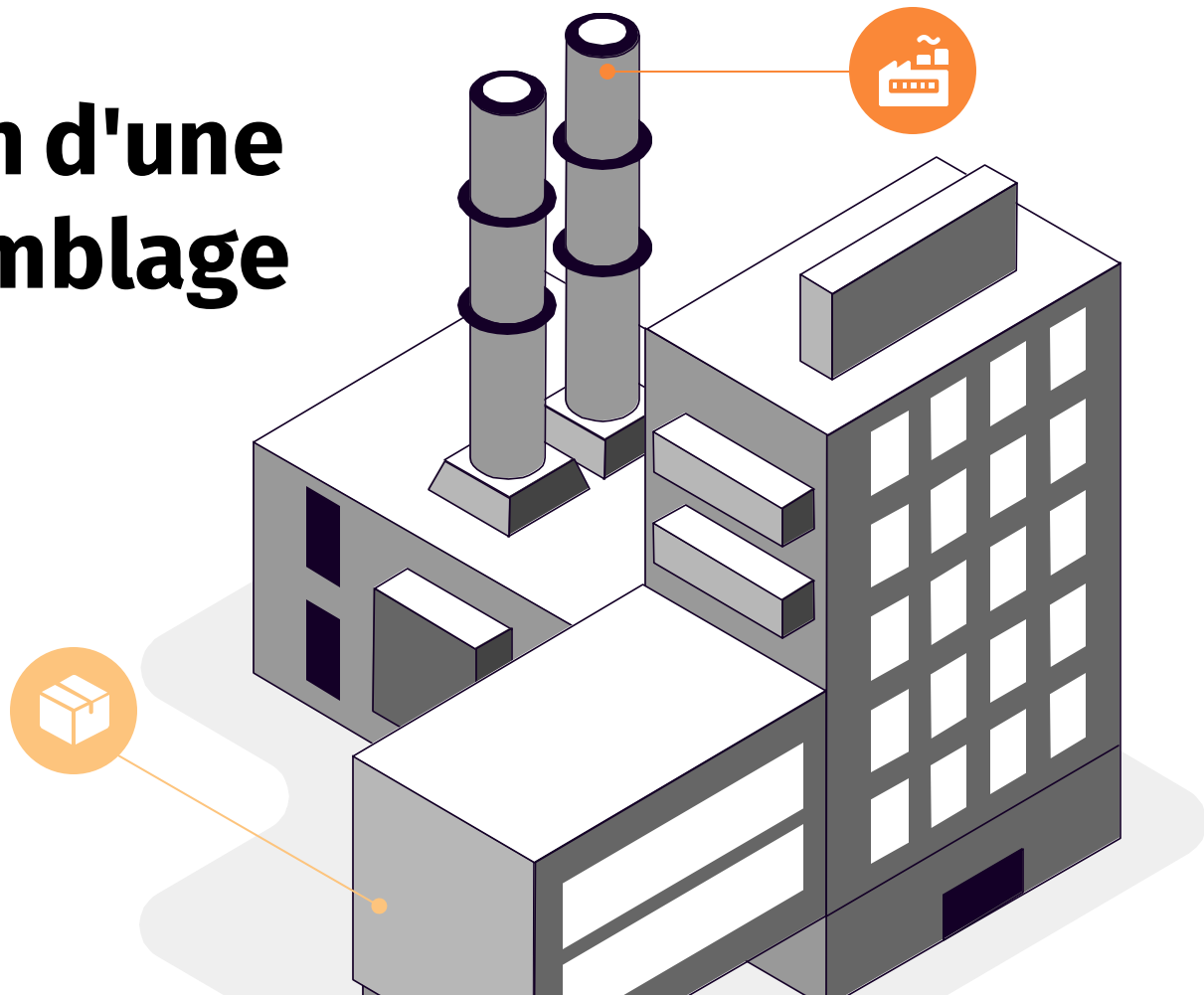


Optimisation d'une ligne d'assemblage

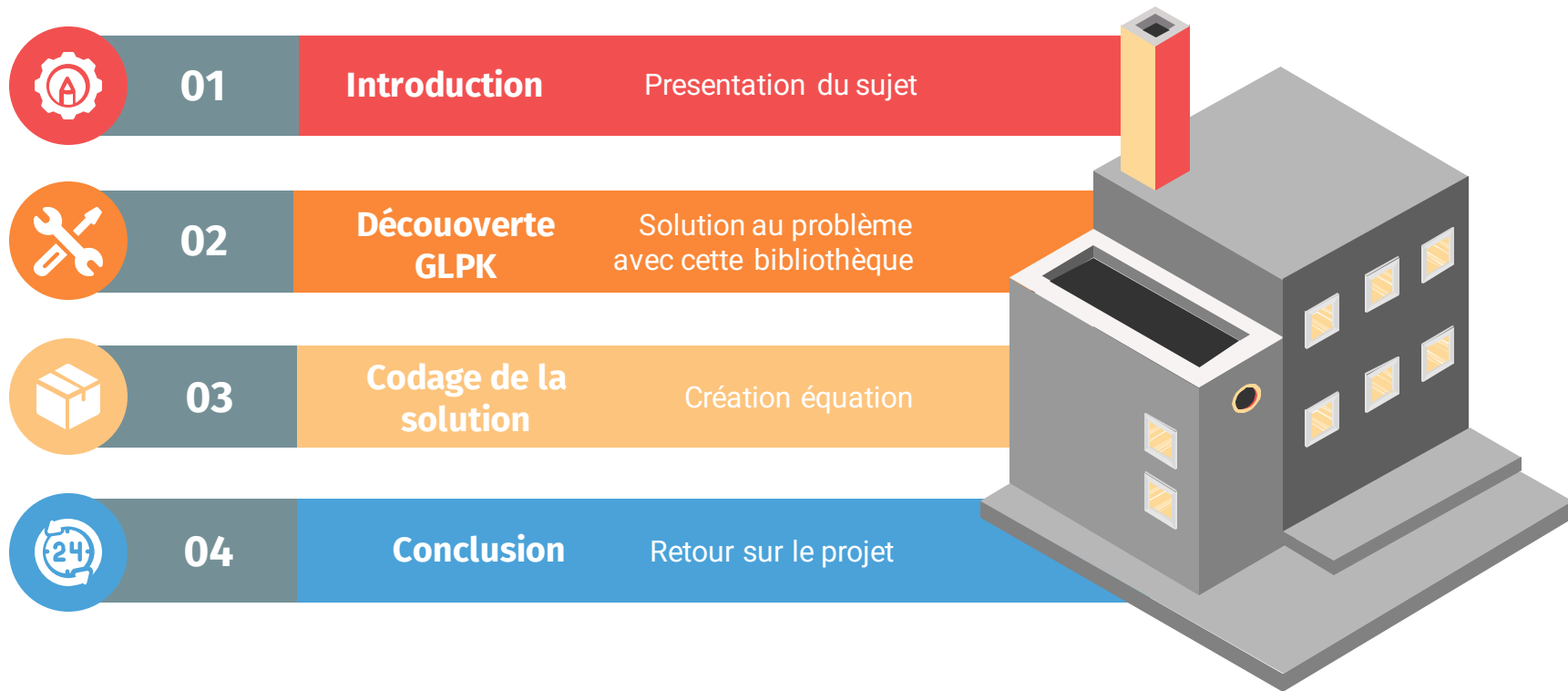
TD 7 | Groupe n°1



Laouïg ELEOUET | Terence FOUCHIER

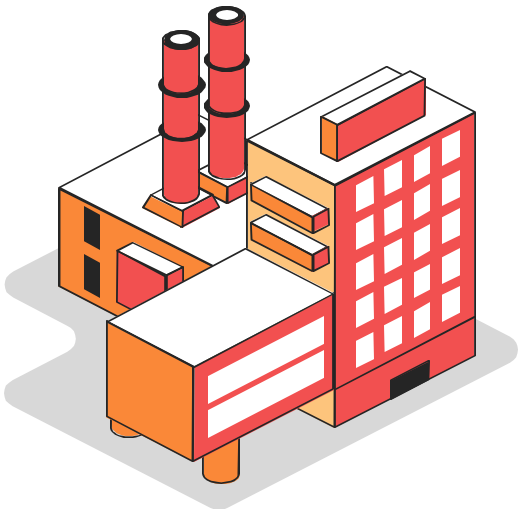
Tom GODARD | Robin QUERIAUX

Sommaire



Versionning GIT

Répartition des tâches



Tom



Terence



Robin

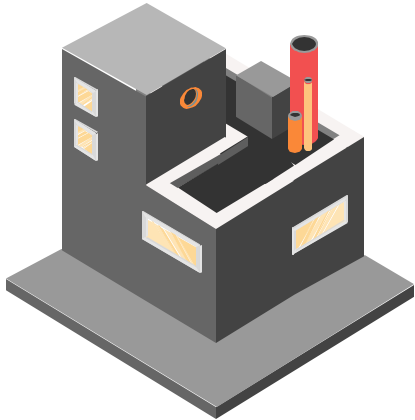
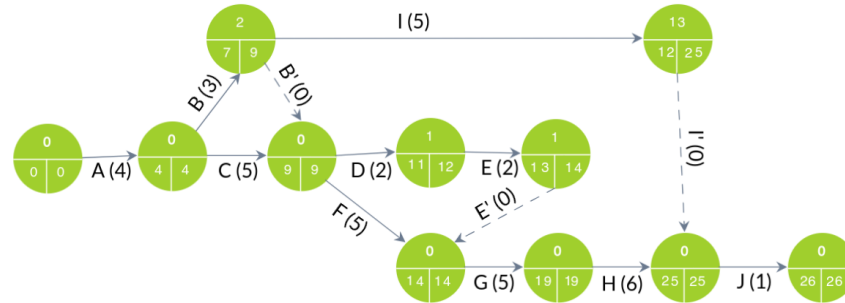


Laouïg

tortue

Diagramme de PERT

Tâche du projet	Durée (en jours)	Anteriorité
A Analyse du sujet et des exigences techniques	4	-
B Configuration d'un environnement de dev.	3	A
C Initiation à GLPK / Algèbre linéaire	5	A
D Création des données	2	A,B,C
E Lecture des fichiers	2	D
F Modèle optimisation	5	B,C
G Tests unitaires	5	E,F
H Validation modèle	6	G
I Documentation et présentation	3	A,B
J Soutenance	1	H,I



Approches abordées

Complexités algorithmiques

Algorithme	Complexité Temporelle	Complexité spatiale	Description
Ford-Fulkerson	$O(Ef)$	$O(V + E)$	Résout les problèmes de flux maximum dans un réseau, en augmentant le flux à travers les chemins jusqu'à atteindre la capacité maximale.
Dijkstra	$O(V^2)$ ou $O(E + V \log V)$	$O(V)$	Trouve le chemin le plus court entre un point de départ et tous les autres points dans un graphe pondéré.
Programmation linéaire (Simplex)	$O(n^3)$ à $O(n^{3.5})$		Utilisé en programmation linéaire pour trouver la solution optimale d'un problème d'optimisation (maximisation ou minimisation) en parcourant les sommets d'un polyèdre en espace multidimensionnel.

Diagramme / schémas et formules utilisées

Mars

01

Despite being red, Mars is a cold place. It's full of iron oxide dust, which gives the planet its reddish cast

Mercury

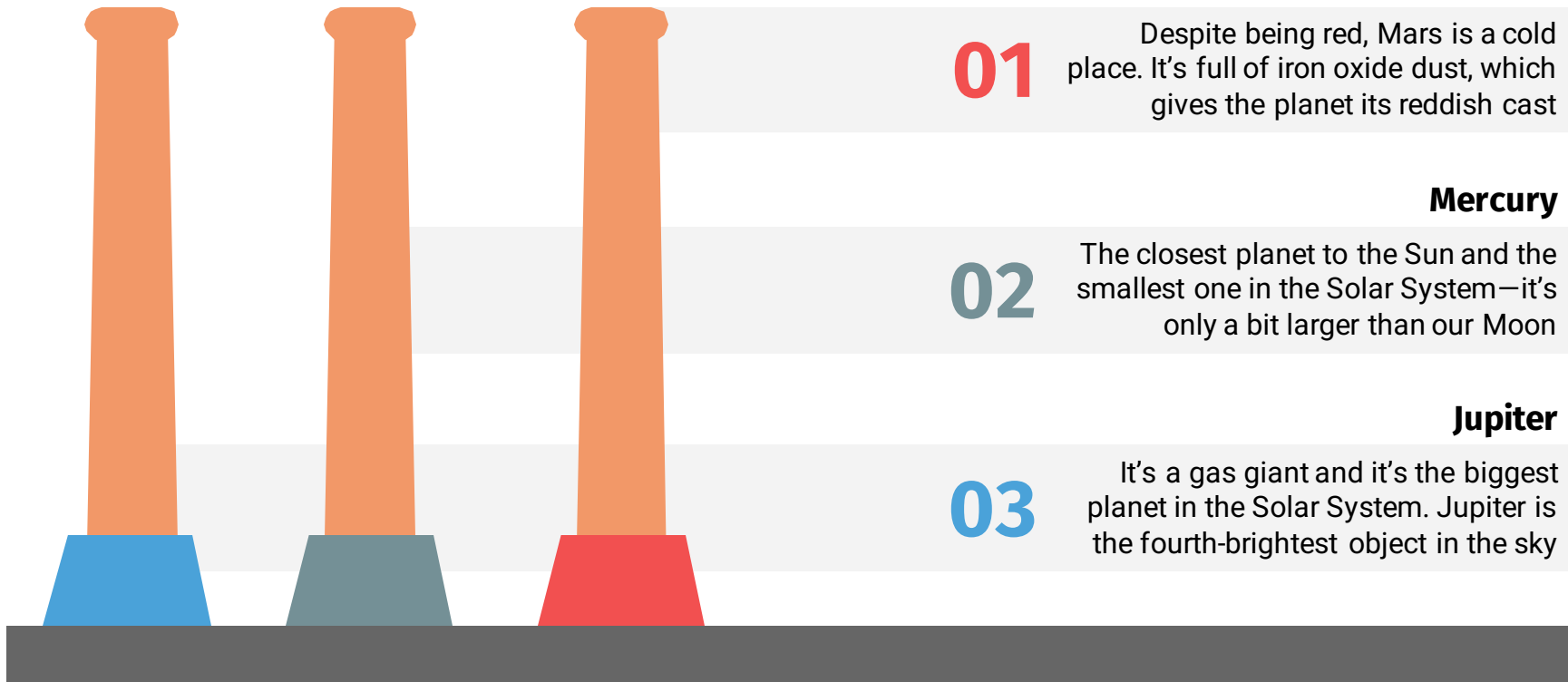
02

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

Jupiter

03

It's a gas giant and it's the biggest planet in the Solar System. Jupiter is the fourth-brightest object in the sky



Travail réalisé



01 Qu'avez vous entrepris ?

It's a gas giant and
the biggest planet

02 Comment ?

Venus is the second
planet from the Sun

03 Résultats ?

Earth is the planet
where we live on

04 Rapid

Despite being red,
Mars is a cold place

05 Flexible

Mercury is the closest
planet to the Sun

Bilan individuel et collectif

Jupiter

Jupiter is a gas giant and also the biggest planet

Mars

Despite being red, Mars is a cold place

Neptune

Neptune is the farthest planet from the Sun

Mercury

Mercury is the closest planet to the Sun

Venus

Venus has a beautiful name and is the second

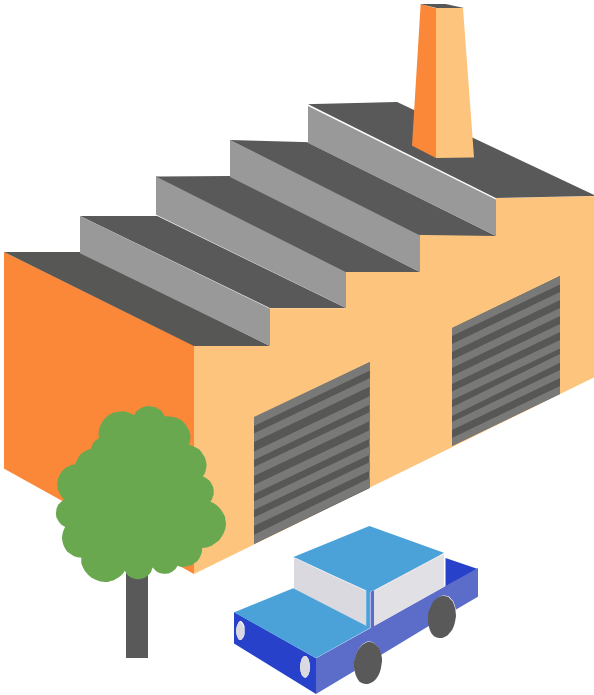
Earth

Earth is the only planet that harbors life

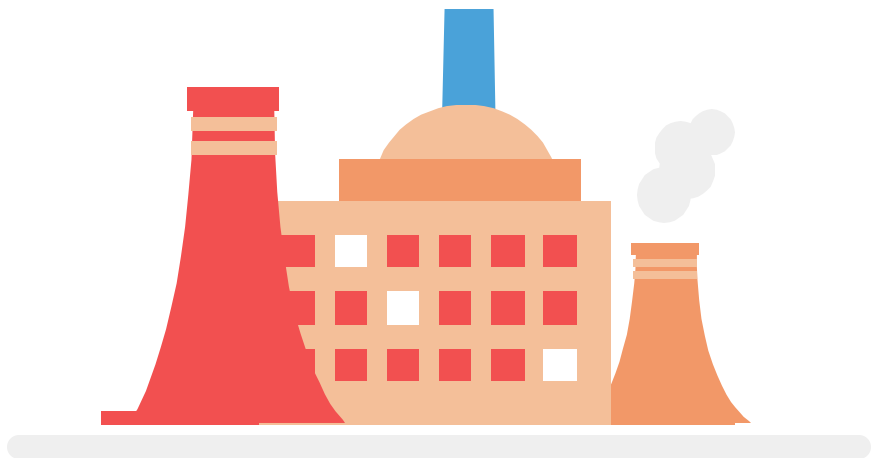


Nos sources

<https://connect.ed-diamond.com/GNU-Linux-Magazine/glmf-135/decouverte-du-solveur-glpk>



Industrial Production Infographics



Venus



Mars



Mercury



Jupiter



01

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



02

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



03

Despite being red, Mars is a cold place full of iron oxide dust



04

It's a gas giant and the biggest planet in the Solar System

Algorithmes utilisés

01

Mars

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

01

02

02

Venus

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

03

03

Mercury

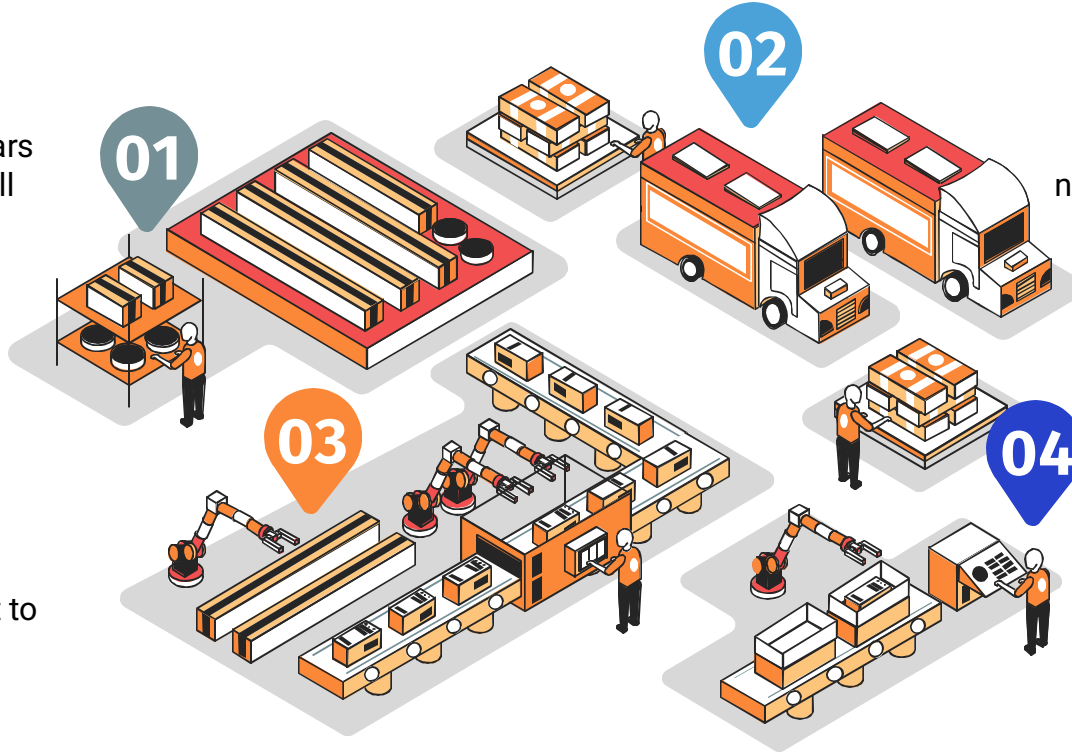
It's the closest planet to the Sun and the smallest one

04

04

Jupiter

Jupiter is a gas giant and the biggest planet in the Solar System



Industrial Production Infographics

Jupiter

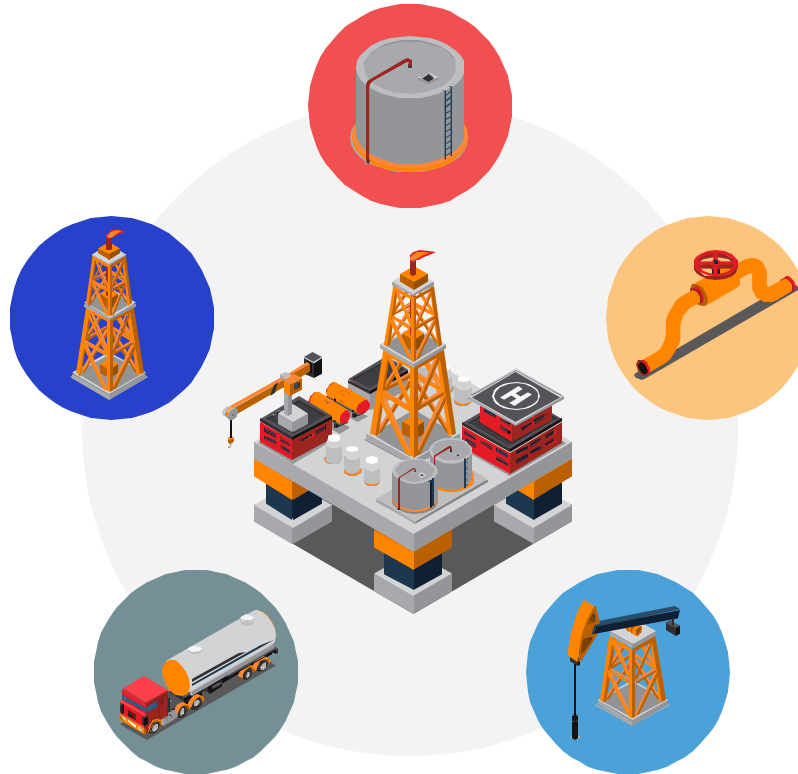
It's a gas giant and the biggest planet

Mars

Despite being red, Mars is a cold place

Mercury

It's the closest planet to the Sun



Venus

Venus has a beautiful name, but it's very hot

Neptune

This is the farthest planet from the Sun

Nos sources



Project Process

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



Jobbing Process

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



Labor Management

Despite being red, Mars is a cold place full of iron oxide dust

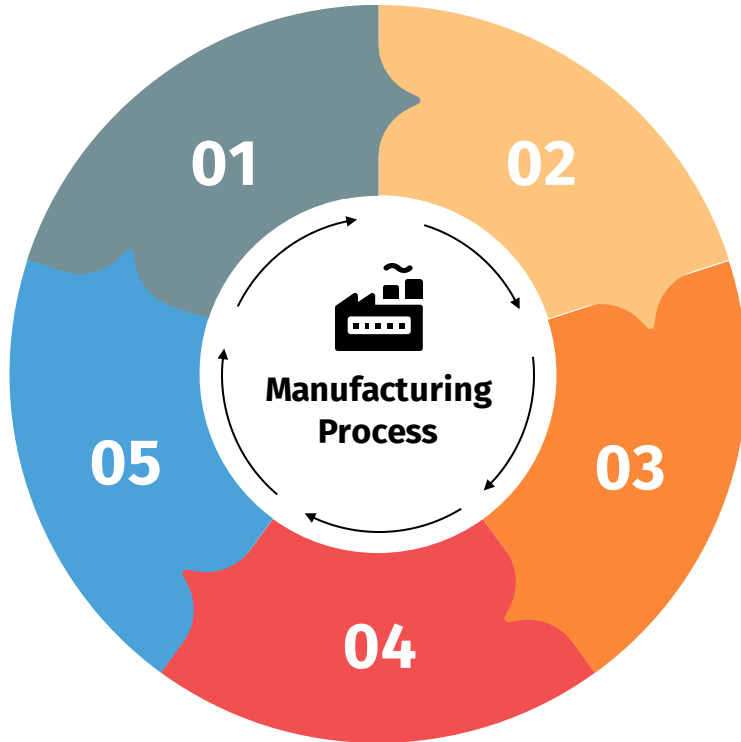


Quality Management

Jupiter is a gas giant and the biggest planet in the Solar System



Industrial Production Infographics



Project Process

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



Jobbing Process

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



Labor Management

Despite being red, Mars is a cold place full of iron oxide dust



Quality Management

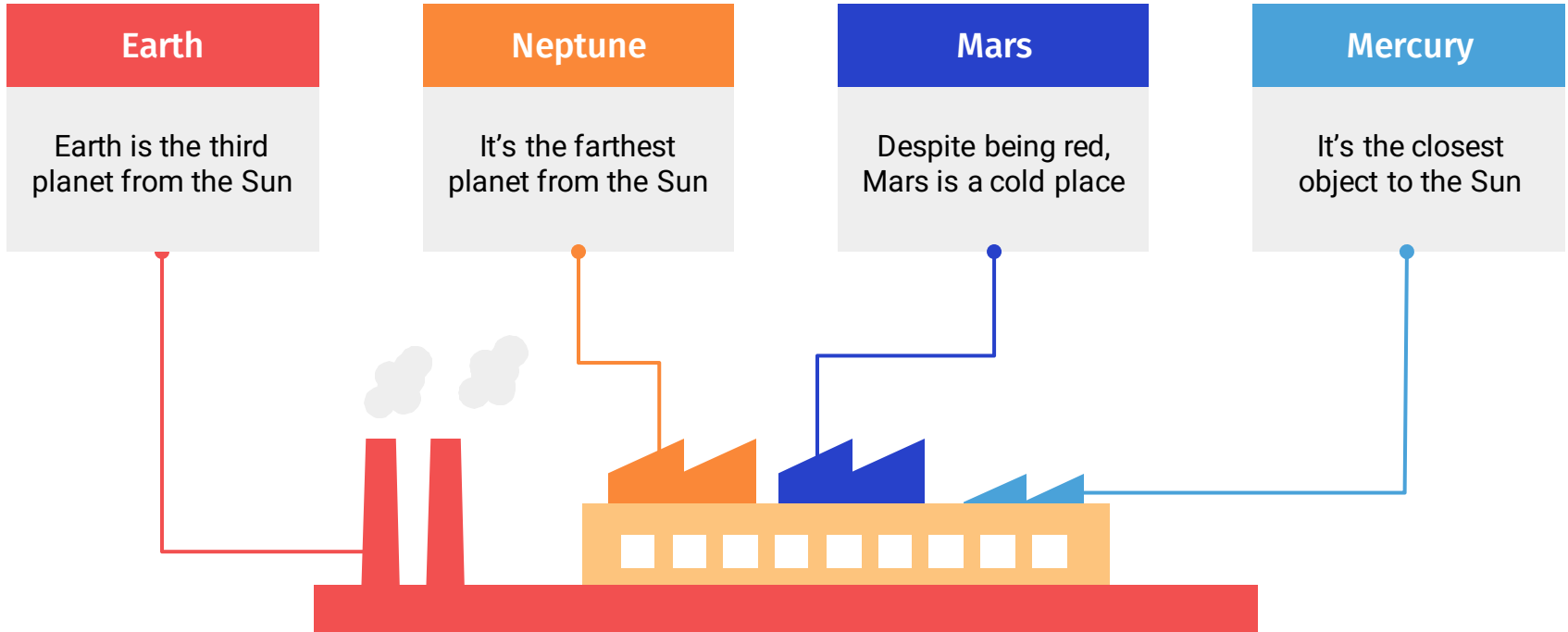
Jupiter is a gas giant and the biggest planet in the Solar System



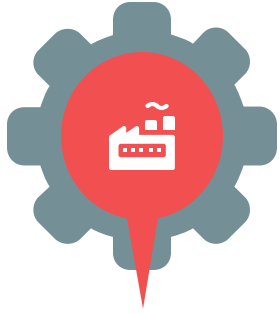
Product Tracing

Neptune is the eighth planet and the farthest from the Sun

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Industrial Production Infographics



Just in time

Saturn is a gas giant
and has rings

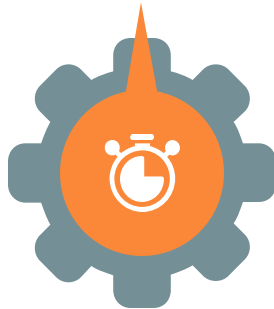


Mass customization

Neptune is the farthest
planet from the Sun

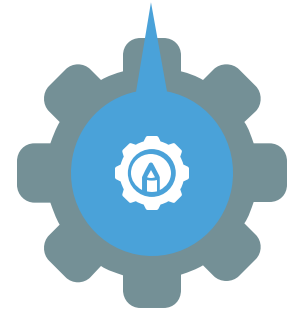
Mass production

Mercury is the smallest
planet of them all



Agile

Jupiter is the biggest
planet of them all



Industrial Production Infographics



Mercury

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



Jupiter

Jupiter is a gas giant and the biggest object in the Solar System



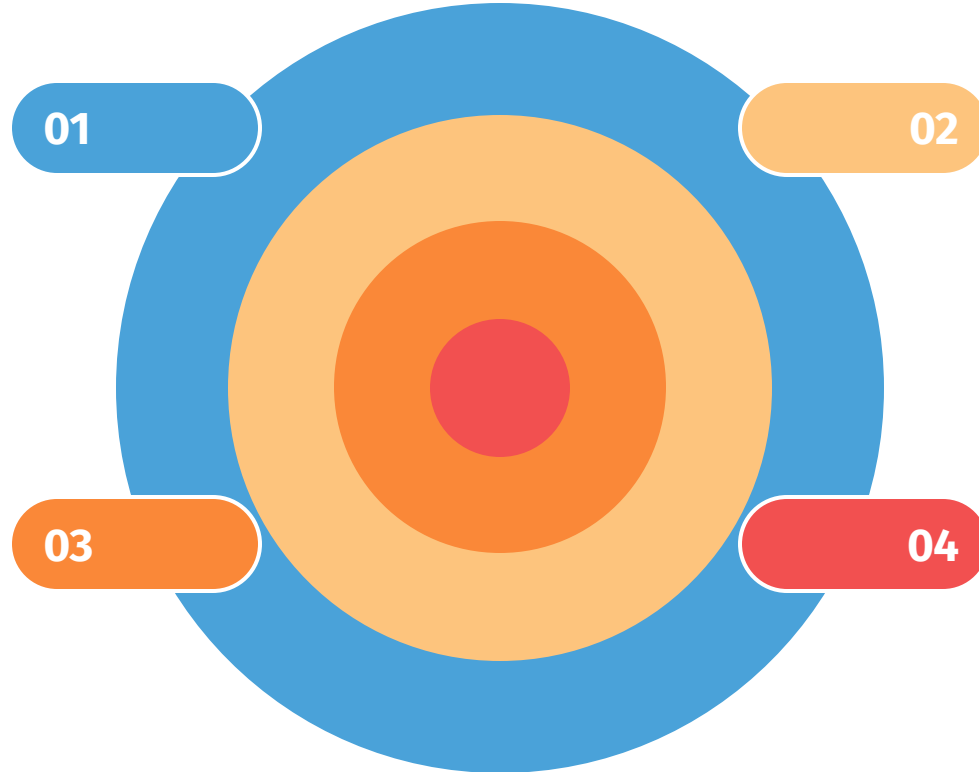
Saturn

It is the ringed planet. It is composed of hydrogen and helium



Mars

Despite being red, planet Mars is a very cold place



Industrial Production Infographics

01

Mercury

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

02

Jupiter

Jupiter is a gas giant and the biggest object in the Solar System

03

Saturn

It is the ringed planet. It is composed of hydrogen and helium

04

Mars

Despite being red, planet Mars is a very cold place



Industrial Production Infographics

Mass production

Mercury is the smallest planet of them all

Flexible

Neptune is the biggest planet of them all

Agile

Venus has a very poisonous atmosphere



Just in time

Saturn is the ringed planet from the Sun

Mass customization

Jupiter is the biggest planet of them all

Rapid

Despite being red, Mars is very cold

Industrial Production Infographics



Assembly

Despite being red,
Mars is a cold place



Customizing

It's a gas giant and
the biggest planet



Production

Mercury is the closest
planet to the Sun



Quality

Venus is the second
planet from the Sun



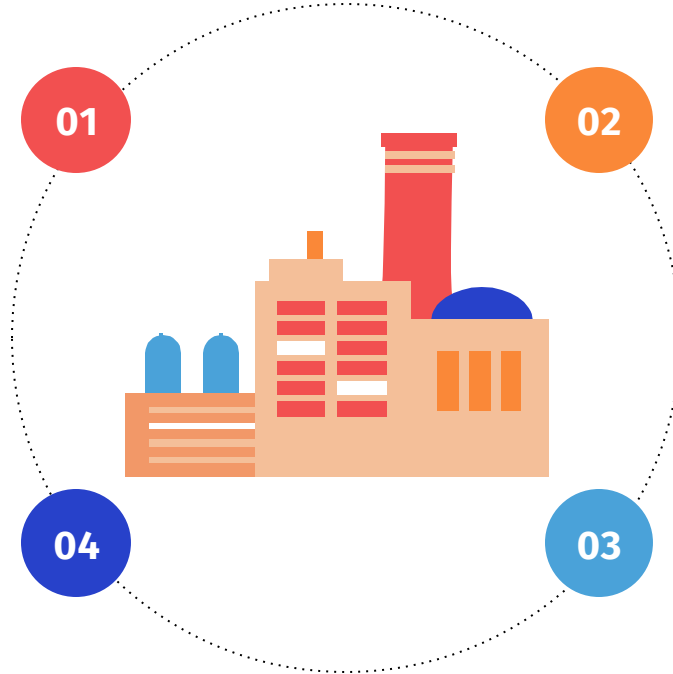
Industrial Production Infographics

Juppiter

Jupiter is a gas giant and the biggest object in the Solar System

Saturn

It is the ringed planet. It is composed of hydrogen and helium



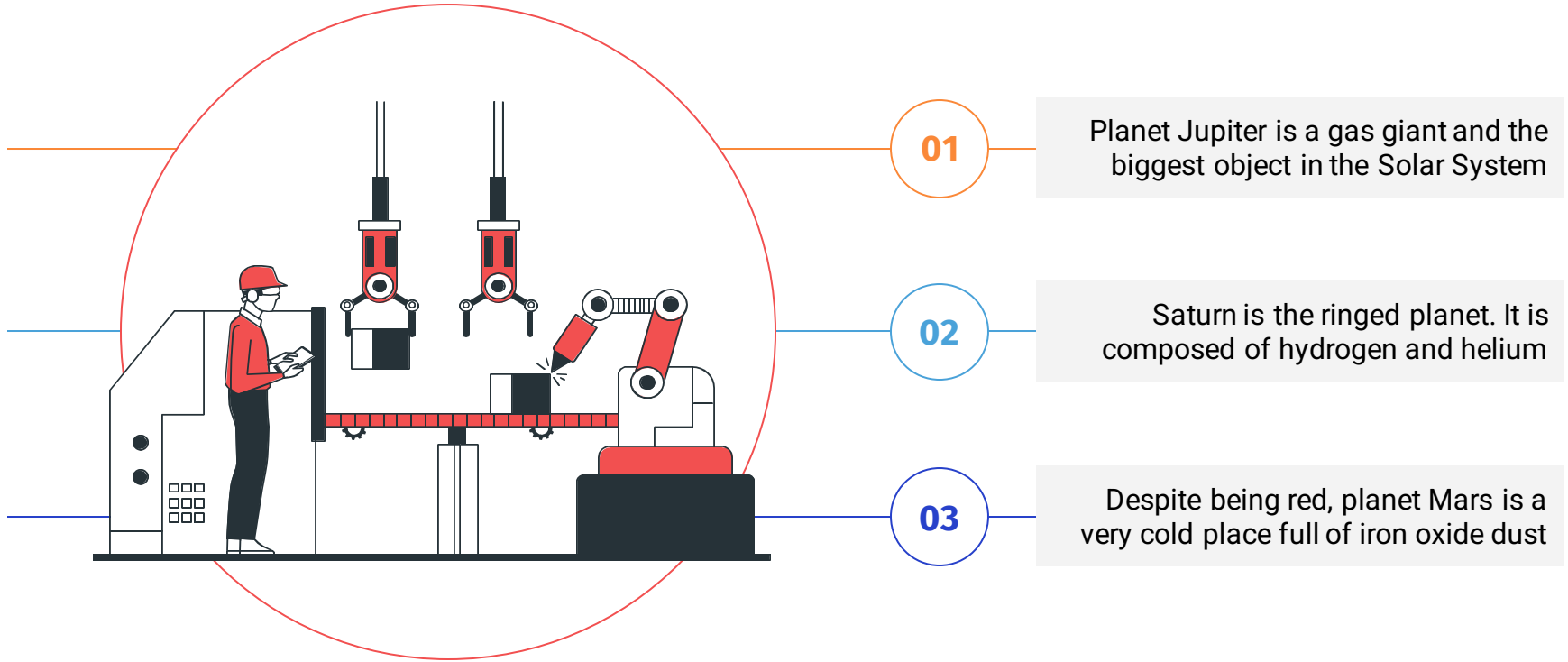
Mars

Despite being red, planet Mars is a very cold place

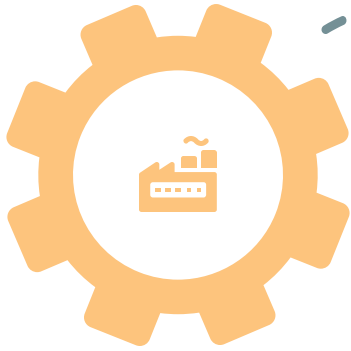
Mercury

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

Industrial Production Infographics

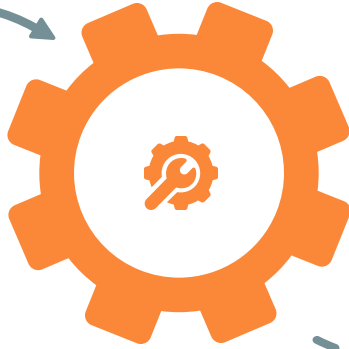


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Manufacturing

Despite being red,
Mars is a cold place



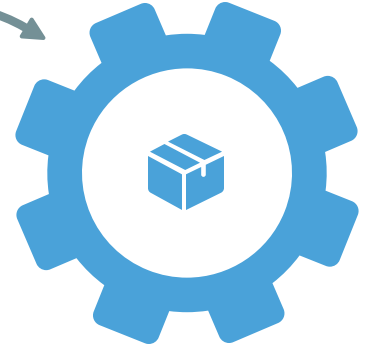
Assembly

Mercury is the closest
planet to the Sun



Coloring

Venus is the second
planet from the Sun



Packing

It's a gas giant and
the biggest planet

Industrial Production Infographics

Earth

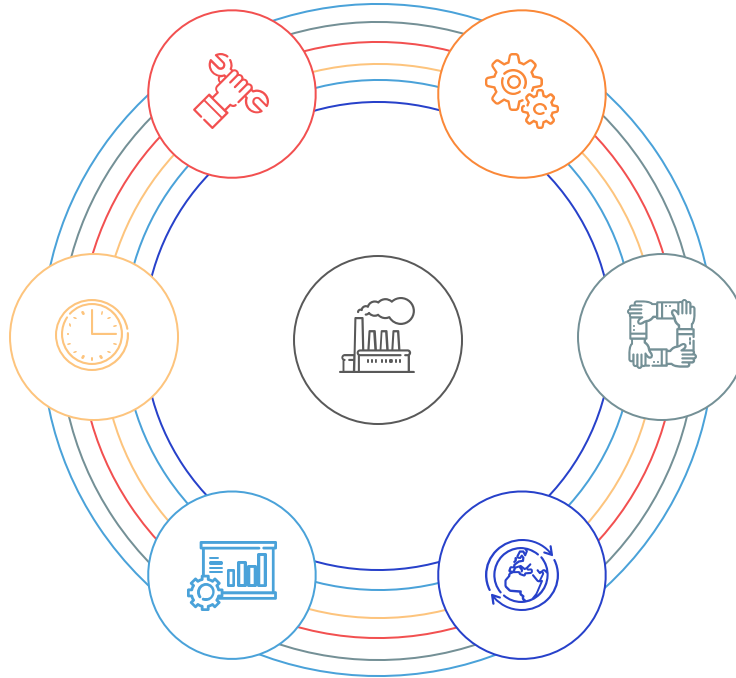
Earth is the third planet from the Sun

Neptune

Neptune is the farthest planet from the Sun

Saturn

Saturn is composed of hydrogen and helium



Mercury

Planet Mercury is the closest object to the Sun

Mars

Despite being red, Mars is a cold place

Jupiter

Jupiter is a gas giant and the biggest planet

Industrial Production Infographics

Mercury
Mercury is the closest planet to the Sun

01

Jupiter
It's a gas giant and the biggest planet

02

Mars
Despite being red, Mars is a cold place

03

Venus
Venus is the second planet from the Sun

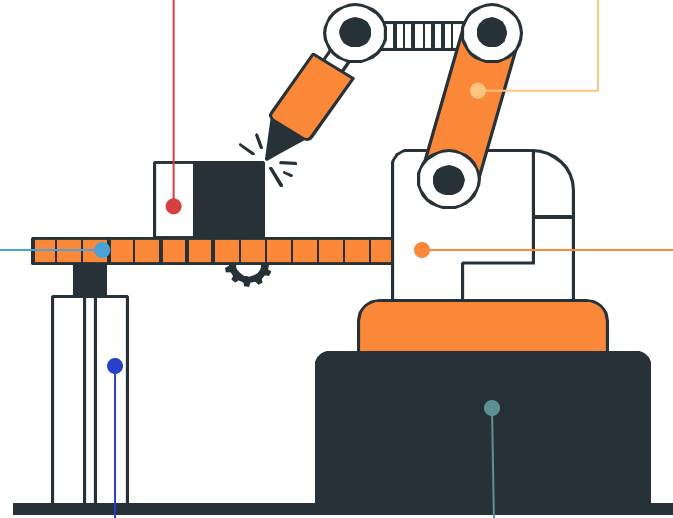
04

Jupiter
It's a gas giant and the biggest planet

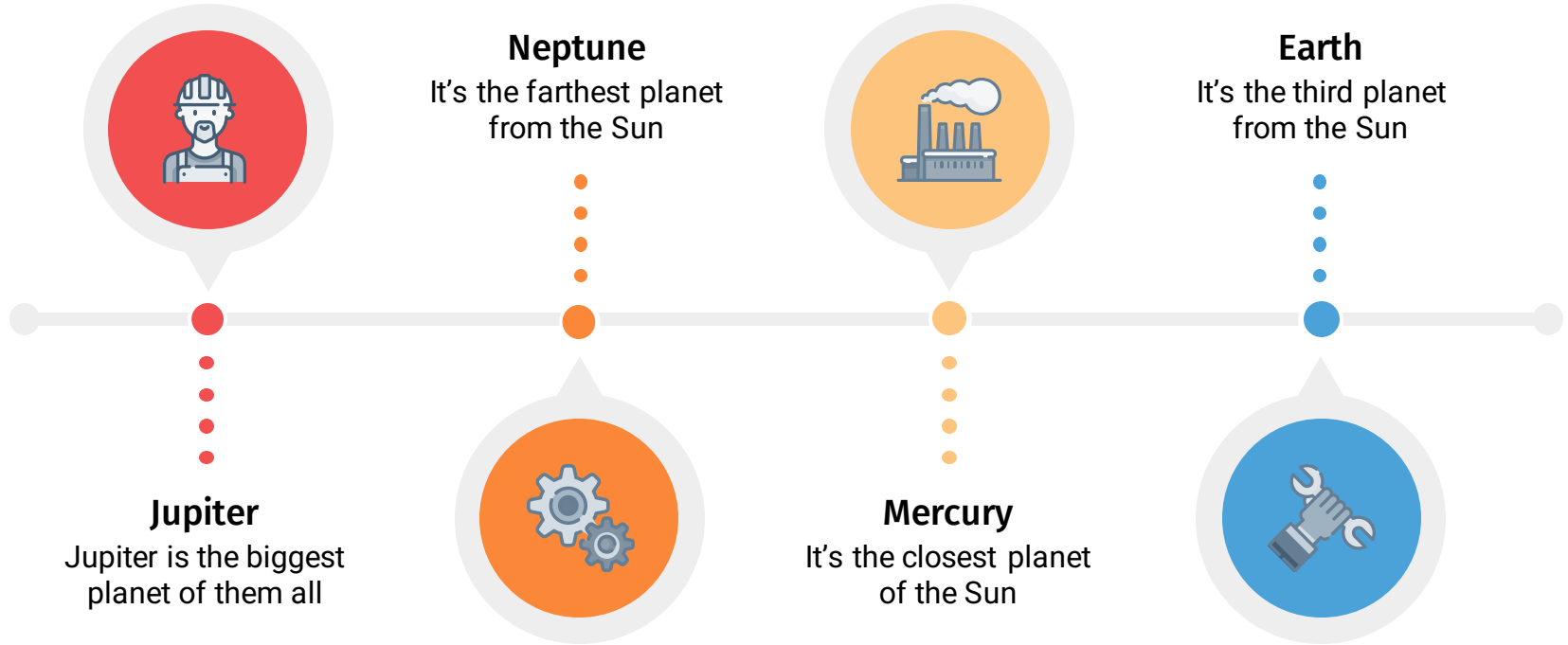
05

Saturn
Saturn is the ringed one. It's a gas giant

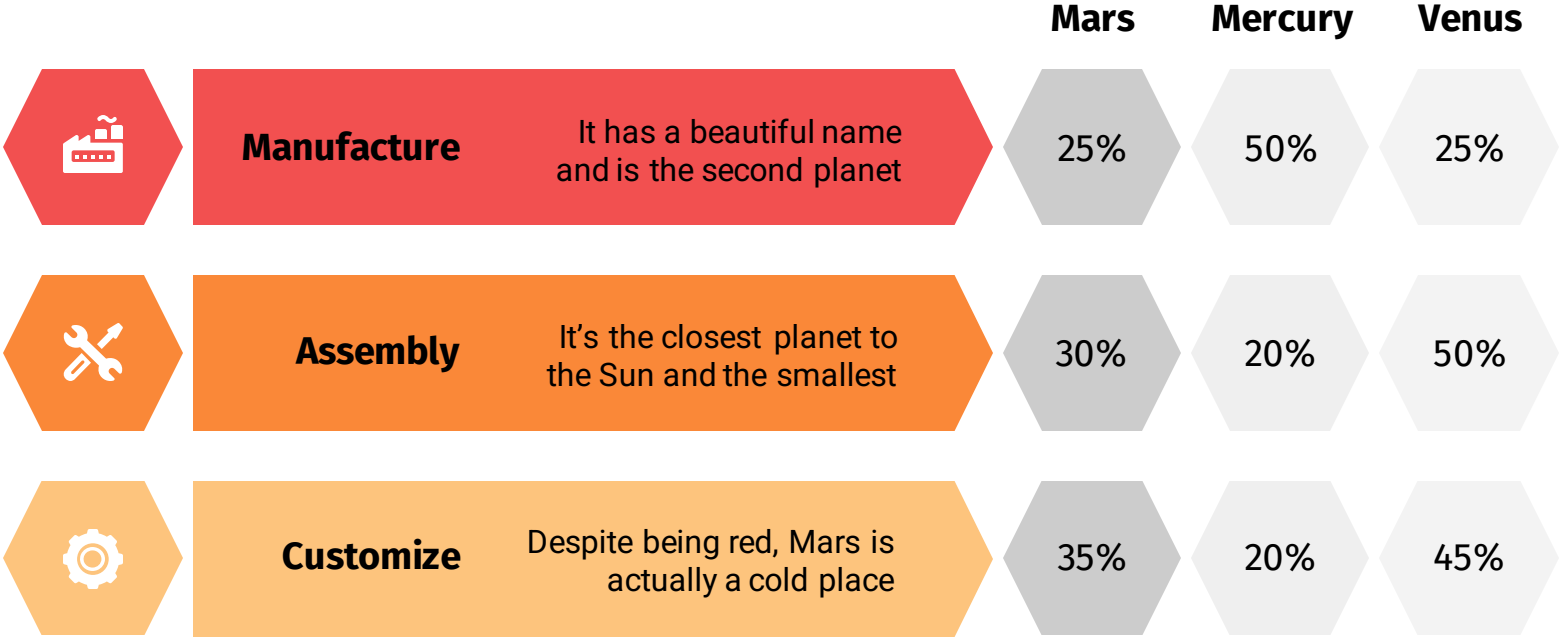
06



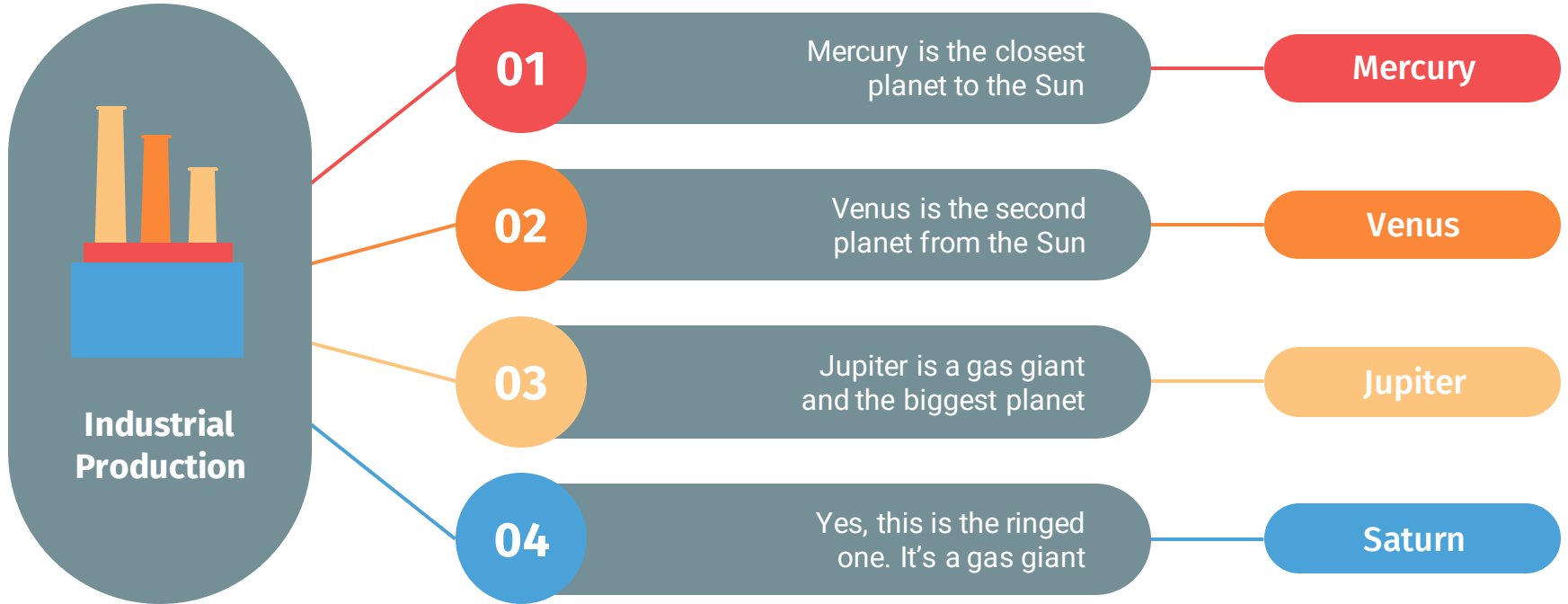
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Industrial Production Infographics



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Mars

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



Venus

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

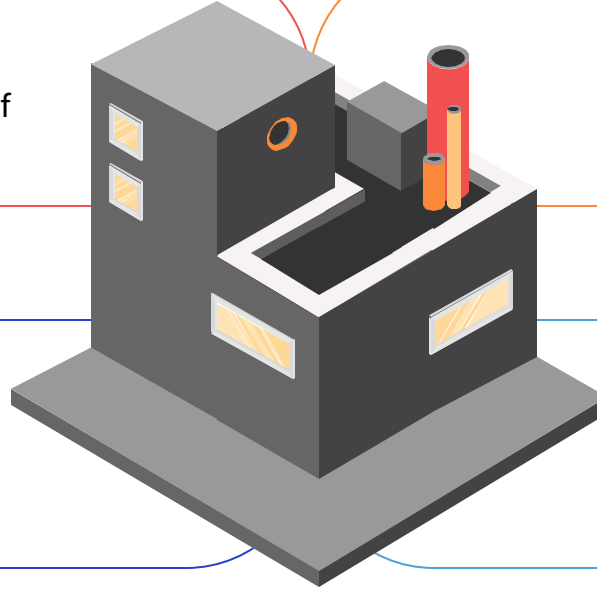


Jupiter

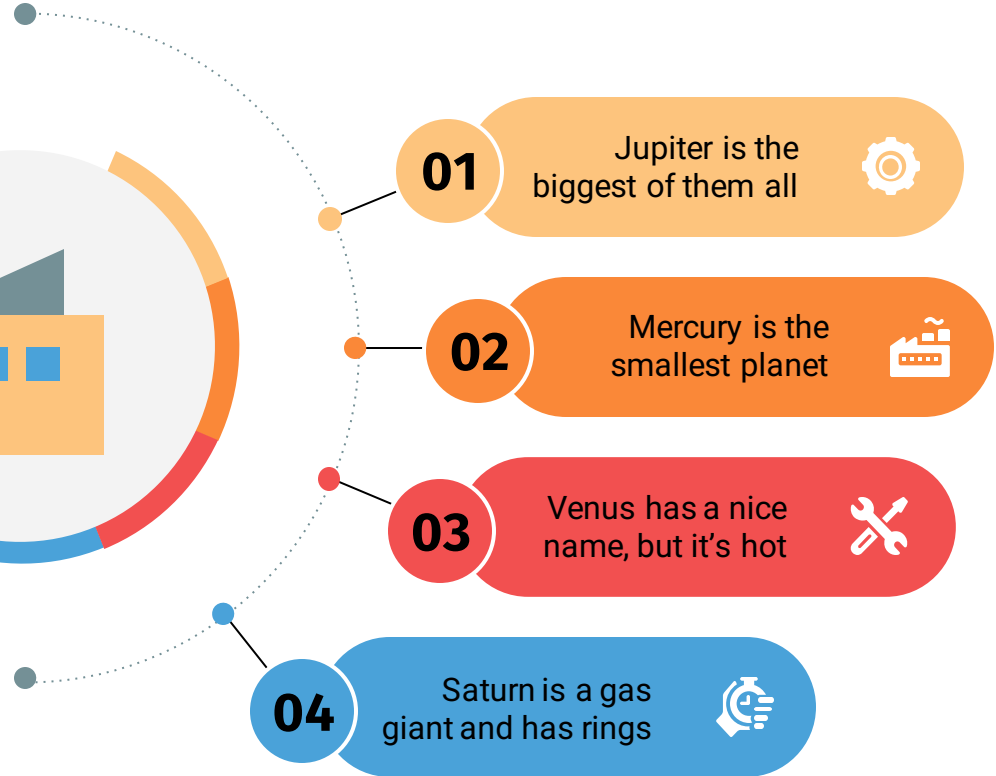
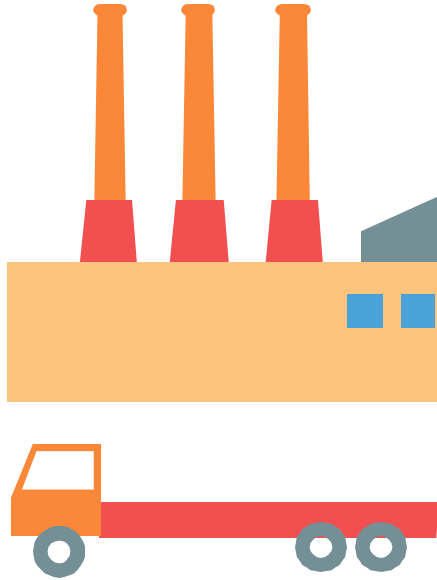
Jupiter is a gas giant and the biggest planet in the Solar System

Mercury

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



Industrial Production Infographics



Merci pour votre écoute !



Venus

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



Mercury

Mercury is the closest to the Sun and the smallest one in the System



Mars

Despite being red, it's a cold place, and is full of iron oxide dust



Jupiter

Jupiter is a gas giant and the biggest planet in the Solar System

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