

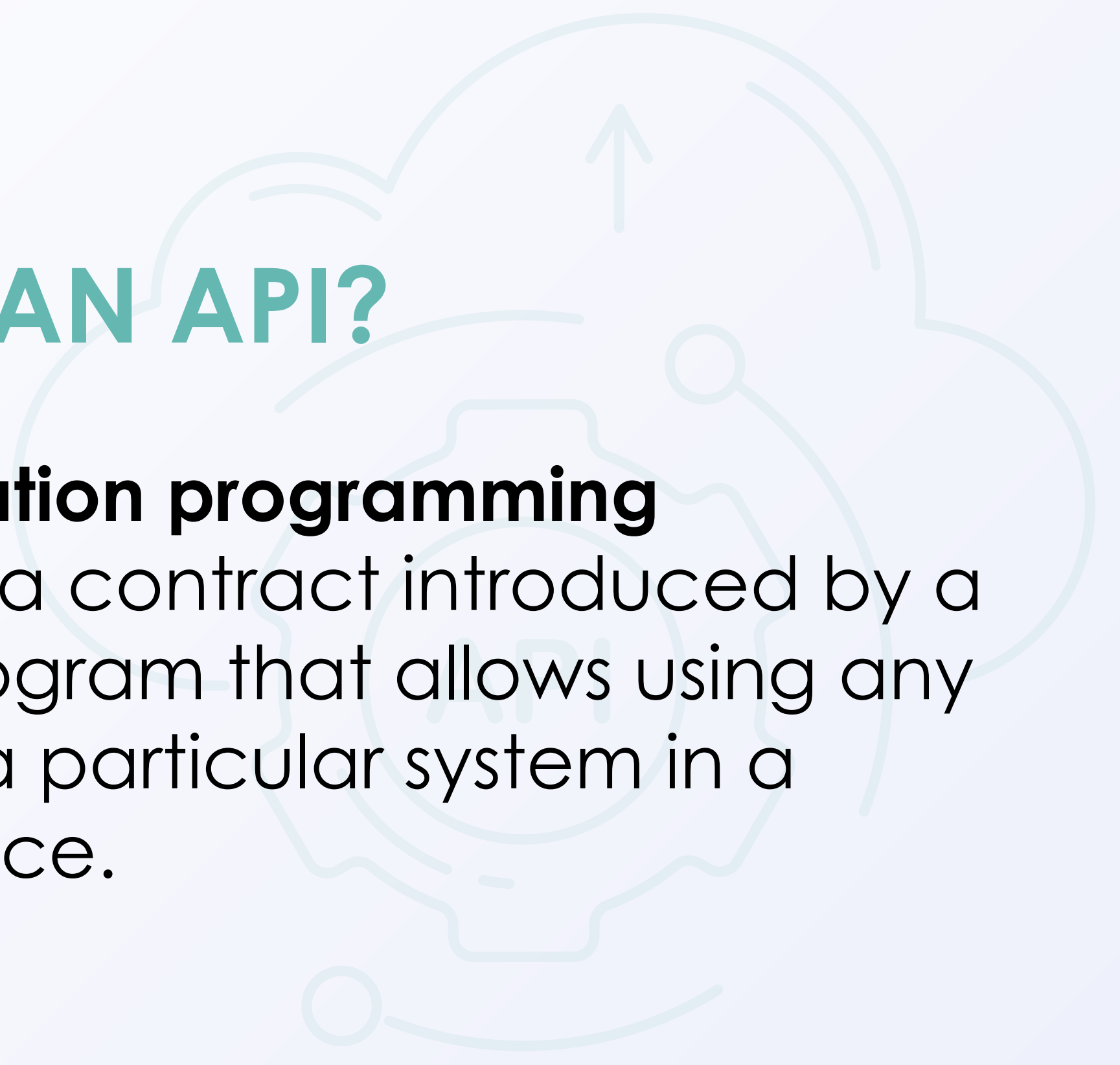


# **API TESTING: A TO Z GUIDE BY QA MADNESS**



## WHAT IS AN API?

**API (Application programming interface)** is a contract introduced by a software program that allows using any features of a particular system in a different place.



# WHAT ISSUES DOES API TESTING HELP TO DETECT?

- Data transferred incorrectly and error condition failures.
- Missing or duplicate functionality that affects system efficiency.
- Security breaches and potential threats of various complexity and severity.
- Issues with connecting to other systems through an API or receiving a response.
- Slow request processing that makes it difficult or impossible to complete an action.
- Multithreading issues that slow down the system.

## BENEFITS OF API TESTING

### **1. FOR DEVELOPERS, IT BECOMES MUCH EASIER TO FIND THE ROOT CAUSE OF THE PROBLEM.**

When a software tester sends a request to an end-point during API testing, they receive an error with a code and descriptions and see a stack trace. By sharing the findings, a QA specialist points out a problematic part of the code to a developer.

# BENEFITS OF API TESTING

## 2. FOR SOFTWARE TESTERS, IT TAKES LESS TIME TO PREPARE TEST DATA.

Let's say a QA engineer needs to prepare specific datasets before test execution. Usually, in API testing, they need to do it just once. Then, a QA specialist can look at where a browser sends the test data and automate the tests.

## BENEFITS OF API TESTING

### **3. FOR STAKEHOLDERS, IT BECOMES POSSIBLE TO SPEED UP THE RELEASE THANKS TO THE EARLY TESTING.**

A development team creates and finalizes a user interface at the later stages after the infrastructure and back-end are ready. API testing doesn't rely on the graphical user interface. Testers can work with APIs even before the front-end is ready.



## TYPES OF API TESTING



- **Functional testing** – covers a set of API calls to check the overall system health.
- **Security testing** – focuses on authentication details and data encryption.
- **Documentation testing** – checks the consistency, completeness, and clarity of the documentation that describes API functions.
- **Usability testing** – allows us to learn whether it will be convenient to operate for end-users.

## TOP 7 TESTING TOOLS

- Postman – an API platform that is used not only for testing but building and using APIs as well.
- REST-assured – a tool for testing and validating REST services that promise to make this process as simple as possible.
- JMeter – an open-source software written in Java and originally designed for testing web apps.
- SOAP UI – a tool available as an open-source or commercial solution that also promises to create, manage, and execute tests easily.



## TOP 7 TESTING TOOLS

- Tricentis – a codeless platform for automating end-to-end tests, fully driven by AI technology.
- Apigee – an API management and testing platform that is now a part of the Google Cloud ecosystem.
- Katalon – a multi-functional low-code test automation platform that offers API testing among the other capabilities.



# SEARCHING FOR A QA PARTNER THAT RUNS API TESTING?

Contact us!

