Abstract

The *API Test Tool* implements most of functions on the basis of *Postman* that is a popular test tool. The *API Test Tool* provides HTTP and Web API request debugging, which can send any type of HTTP request with parameters and headers. Moreover, it also provides the import and export of test data and environment configuration data. In the *API Test Tool*, there are three main parts, which are *History, Collection* and *request builder*. Any HTTP request can be created quickly and saved in *History* to be executed again. Through *Collection* function, we can well classify and manage the API provided by the test software. In the part of testing request, there are many different types of request, such as get, post, put and delete. API Test Tool has a variety of methods to define variables, which are used in different domain. No matter what kind of variable, it uses {{variable}} to represent variables, which is useful in developing and testing.

Key words: API Test Tool; HTTP request; Web API

Introduction

1.1 Background

With the increasing importance of API interface testing, the traditional manual API

interface testing method is inefficient and the quality is not guaranteed. In practice, some bugs cannot be found on web page’s operation, but interface testing can find the bugs. In addition, it also can check the system's exception handling ability and the safety and stability of the system. Interface is more stable than front end page and can test the concurrency which allows two events processed at the same time. Also the request parameters of interface testing can be modified to break through the front end page input limit.

When developing or debugging web programs or web B/S mode programs, users need

some methods to track web page requests. Web monitoring tools such as firebug, the

web page debug tool. But in order to meet users’ requirement, the powerful HTTP

request simulation tool Postman is selected. In this project, we also design tool based

on Postman.

1.2 Objective

The *API Test Tool* is aimed to be applied the interactive development of multiple systems and application systems with multiple subsystems. It is used to the underlying framework system and central service system that provide services for other systems. It mainly tests the interfaces provided by these systems to the external to verify their correctness and stability. In the process of developing products, the tool acts ss the bridge of this interaction mode, it can send all kinds of data simulating user’s HTTP requests to the server, so that developers can make correct responses in time, or deal with the error information before product release in advance. So as to ensure the security after products go online.

1.3 Signification

Interface, also known as API, is a contract for connecting different components of a software system, such as the interface between modules, the interface between front-end and back-end. From the perspective of system architecture, the interface is often developed by the back-end personnel, which has a wide range of influence, so when there is a problem with the interface, it often affects the progress of research and development. The interface is the boundary of each module. When testing the interface, you can find more important bugs. Because borders are the most problematic place. Whether it is the boundary of the module or the boundary of the personnel.

The *API Test Tool* is a convenient web debugging tool with JSON automatic typesetting function, and supports recording. It can record the parameters and return values of each post or get method.it also integrates base64 encryption and decryption to provide the security of Web Data. The development of server would be done in Java Programming Language and the html page is implemented by css technology.