Survey on Code Examples

Dear participant,

Our research group is investigating the usefulness of code examples in understanding the usage of APIs. We would be grateful if you could spend a few minutes of your time to answer the following survey, which consist of two parts:

1. A questionnaire about your background.
2. A short evaluation of ten code examples showing the usage of ten methods of an API (i.e., one code example per method).

The survey will take less than 10 minutes to complete, and your participation is anonymous and voluntary. If you have any question, do not hesitate to contact Laura Moreno via email at lmorenoc@utdallas.edu.

Thanks for your help.

Background Information

Please, answer the following questions according to your experience in software development.

1. For how many years have you developed software?

1 ▼
2. Do you have any industrial experience as software developer?

- Yes
- No

For how many years?

3. How often do you make use of third party libraries in your software projects?

- Never
- Rarely - I use third party libraries in less than 33% of my projects
- Occasionally - I use third party libraries in more than 33% but less than 66% of my projects
- Frequently - I use third party libraries in more than 66% of my projects

4. How often do you use code examples found on the Internet to check how to use the API of a library?

- Never
- Rarely - I use code examples for less than 33% of the APIs I use
- Occasionally - I use code examples for more than 33% but less than 66% of the APIs I use
- Frequently - I use code examples for more than 66% of the APIs I use

**Code Examples for Apache Xerces**

**Code Examples for Apache HttpClient**

The next questions refer to code examples showing the usage of some methods of the [Apache HttpClient](https://httpclient.apache.org/) API.
1. Have you contributed to the implementation of the Apache HttpClient project?

- Yes
- No

Code Examples for Apache HttpClient

2. The next code snippet exemplifies the usage of the method:

```java
org.apache.http.impl.auth.AuthSchemeBase.authenticate(
```

**Example**

```java
private String user;
polite String password;
polite String url = "https://rest.interfax.net/outbound/faxes?faxNumber=
private String to;
polite HttpContext localContext;
UsernamePasswordCredentials creds="new" UsernamePasswordCredentials(this.
HttpPost post="new" HttpPost(url + to);
new BasicScheme().authenticate(creds, post, localContext);
```

Considering this code example, answer the following questions:

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<th>How useful is the code example (including the comments) in understanding the usage of the aforementioned method?</th>
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Please, justify your answers.
Code Examples for Apache HttpClient

3. The next code snippet exemplifies the usage of the method:

```java
org.apache.http.client.utils.URIUtils.createURI(java.lang.String,
java.lang.String,int,java.lang.String,java.lang.String,
java.lang.String)
```

Example

```java
private final String method;
private final List<NameValuePair> parameters;
private final URI uri;
if("GET".equalsIgnoreCase(method))
{
final String query=URLEncodedUtils.format(parameters,"UTF-8");
// this.uri.getScheme() -> Scheme name
// this.uri.getHost() -> Host name
// this.uri.getPort() -> Port number
// this.uri.getPath() -> Path
// query -> Query
// null -> Fragment
URIUtils.createURI(this.uri.getScheme(),this.uri.getHost(),this.uri.get
query,null);
}
```

Considering this code example, answer the following questions:

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Please, justify your answers.
Code Examples for Apache HttpClient

4. The next code snippet exemplifies the usage of the method:

```java
org.apache.http.HttpRequest)
```

**Example**

```java
HttpRequestBase request;
// (HttpHost)client.getParams().getParameter(ClientPNAMES.DEFAULT_HOST)
// request. Implementations may accept <code>null</code> if the
// for example to a default target or by inspecting the request
// request -> the request to execute
client.execute((HttpHost)client.getParams().getParameter(ClientPNAMES.D
```

Considering this code example, answer the following questions:

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Please, justify your answers.

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Code Examples for Apache HttpClient

5. The next code snippet exemplifies the usage of the method:

```java
```

**Example**

```java
private HttpClient client;
private HttpPost post;
```
Considering this code example, answer the following questions:

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Please, justify your answers.

**Code Examples for Apache HttpClient**

6. The next code snippet exemplifies the usage of the method:

```java
final HttpContext context;
AuthState authState=(AuthState)context.getAttribute(ClientContext.TARGET_CREDENTIALS_PROVIDER_CONTEXT_ATTR);
CredentialsProvider credsProvider=(CredentialsProvider)context.getAttribute(ClientContext.EXECUTION_CREDENTIALS_PROVIDER_CONTEXT_ATTR);
HttpHost targetHost=(HttpHost)context.getAttribute(ExecutionContext.HTTP_HOST_ATTR);
if(authState.getAuthScheme() == null) {
    AuthScope authScope=new AuthScope(targetHost.getHost(),targetHost.getPort(),null);
    // authScope -> the AuthScope authentication scope
    Credentials creds=credsProvider.getCredentials(authScope);
}
```
Considering this code example, answer the following questions:

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**Code Examples for Apache HttpClient**

7. The next code snippet exemplifies the usage of the method:

```java
```

**Example**

```java
Event e;
if(e.getAttrs().containsKey(attributeName)) {
    String uriString=new String(e.get(attributeName));
    URI uri=URI.create(uriString);
    // uri -> uri to parse
    // defaultCharset().name() -> encoding to use while parsing the query
    URLEncodedUtils.parse(uri, defaultCharset().name());
}
```

Considering this code example, answer the following questions:

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Please, justify your answers.

**Code Examples for Apache HttpClient**

8. The next code snippet exemplifies the usage of the method:

```java
```

```
Example
1 ClientConnectionManager conman;
2 if (conman == null)
3 {
4 SchemeRegistry schemeRegistry=new SchemeRegistry();
5 // configureScheme() -> the scheme to register
6 schemeRegistry.register(configureScheme());
7 }
```

Considering this code example, answer the following questions:

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Please, justify your answers.
Code Examples for Apache HttpClient

9. The next code snippet exemplifies the usage of the method:

```java
org.apache.http.conn.scheme.Scheme.Scheme(java.lang.String,
    int,org.apache.http.conn.scheme.SchemeSocketFactory)
```

Example

```java
boolean enableSSL=false;
SSLSocketFactory sslSocketFactory;
boolean relaxedSSLSettings=false;
int port=5984;
if(enableSSL)
{
    try
    {
        if(sslSocketFactory == null)
        {
            SSLContext context=SSLContext.getInstance("TLS");
            SSLSocketFactory=relaxedSSLSettings ? new SSLSocketFactory(context,
                SSLSocketFactory.ALLOW_ALL_HOSTNAME_VERIFIER) : new SSLSocketFactory
        }
        // "https" -> the scheme name, for example "http". The name will be co
        // port -> the default port for this scheme
        // sslSocketFactory -> the factory for creating sockets for communicat
        new Scheme("https",port,sslSocketFactory);
    }
}
```

Considering this code example, answer the following questions:

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Please, justify your answers.
Code Examples for Apache HttpClient

10. The next code snippet exemplifies the usage of the method:

```java
    final HttpContext context;
    AuthState authState=(AuthState)context.getAttribute(ClientContext.TARGET_STATE);
    CredentialsProvider credsProvider=(CredentialsProvider)context.getAttribute(HttpHost.TARGET_HOST);
    HttpHost targetHost=(HttpHost)context.getAttribute(ExecutionContext.HTTP_HOST);
    if(authState.getAuthScheme() == null)
    {
        AuthScope authScope=new AuthScope(targetHost.getHost Name(),targetHost.PORT);
        Credentials creds=credsProvider.getCredentials(authScope);
        if(creds != null)
        {
            authState.setAuthScheme(new BasicScheme());
            // creds -> User credentials
            authState.setCredentials(creds);
        }
    }
```

Considering this code example, answer the following questions:

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Please, justify your answers.
The next code snippet exemplifies the usage of the method:

```java
org.apache.http.client.CredentialsProvider.setCredentials(
    org.apache.http.auth.AuthScope,
```

### Example

```java
String host = "localhost";
int port = 5984;
String username;
String password;
HttpParams params = new BasicHttpParams();
DefaultHttpClient client = new DefaultHttpClient(configureConnectionManager
    // newAuthScope(host, port, AuthScope.AUTH_REALM) -> the AuthScope authen
    // newUsernamePasswordCredentials(username, password) -> the authentica
    // the given scope.
client.getCredentialsProvider().setCredentials(new AuthScope(host, port
    new UsernamePasswordCredentials(username, password));
```

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### Comments

1. Do you have any further comments on the code examples presented in this survey?
2. Your opinion is important to us. Please, share your email address if we can contact you to follow up on any of your responses.