Java Reflection

Q 1 :What is API ?

Ans : An application program interface (**API**) is a set of routines, protocols, and tools for building software applications. Basically, an **API** specifies how software components should interact. Additionally, **APIs** are used when programming graphical user interface (GUI) components.

Like Google Maps API , YouTube APIs

Source :https://www.webopedia.com/TERM/A/API.html

Q 2 : What is reflection ?

Ans :Reflection is an API which is used to examine or modify the behavior of methods, classes, interfaces at runtime

Source : https://www.geeksforgeeks.org/reflection-in-java/

Q 3 :Why need reflection ?

Ans : Advantages of Using Reflection:

- Extensibility Features: An application may make use of external, user-defined classes by creating instances of extensibility objects using their fully-qualified names.
- Debugging and testing tools: Debuggers use the property of reflection to examine private members on classes.

Source :https://www.geeksforgeeks.org/reflection-in-java/

Q 5: What are the disadvantage of reflection ?Drawbacks:

- Performance Overhead: Reflective operations have slower performance than their non-reflective counterparts, and should be avoided in sections of code which are called frequently in performance-sensitive applications.
- Exposure of Internals: Reflective code breaks abstractions and therefore may change behavior with upgrades of the platform.

Source :https://www.geeksforgeeks.org/reflection-in-java/

Q 6 : What is meta data ?

Ans : Metadata is a set of descriptive, structural and administrative data about a group of computer data (for example such as a database schema),

Source: http://entrance-exam.net/forum/general-discussion/what-metadata-java-108253.html#ixzz586A9W85q

Q 7 : Why reflection is slow ?

Ans : The compiler can do no optimization whatsoever as it can have no real idea about what you are doing. This probably goes for the `JIT` as well

- Everything being invoked/created has to be *discovered* (i.e. classes looked up by name, methods looked at for matches etc)
- Arguments need to be dressed up via boxing/unboxing, packing into arrays, `Exceptions` wrapped in `InvocationTargetException`s and re-thrown etc.

Source :https://stackoverflow.com/questions/1392351/java-reflection-why-is-it-so-slow

reflection has to do:

- Check that there's a parameterless constructor
- Check the accessibility of the parameterless constructor
- Check that the caller has access to use reflection at all
- Work out (at execution time) how much space needs to be allocated
- Call into the constructor code (because it won't know beforehand that the constructor is empty)

Source :https://stackoverflow.com/questions/1392351/java-reflection-why-is-it-so-slow/1392379#1392379

Q 8: Why reflection is security less ?

Ans : It can be access all the private field , private method , private getter/setter method , private class and object and all the meta data by using reflection , so it is security less .

Q 9 : How information can be get by reflection ?

Ans : Method call : aclass.getMethods()

Constractor call : aClass.gerConstructor() ,

Class call : aClass.class() , aclass.forNmae () ,

Object : aClass.getName()

field : aClass.getField()

Q 10 : What is the parameter list of getdeclard Method ?

Ans public Method[] getDeclaredMethods() , no parameter list

Sorece :https://www.javatpoint.com/java-reflection