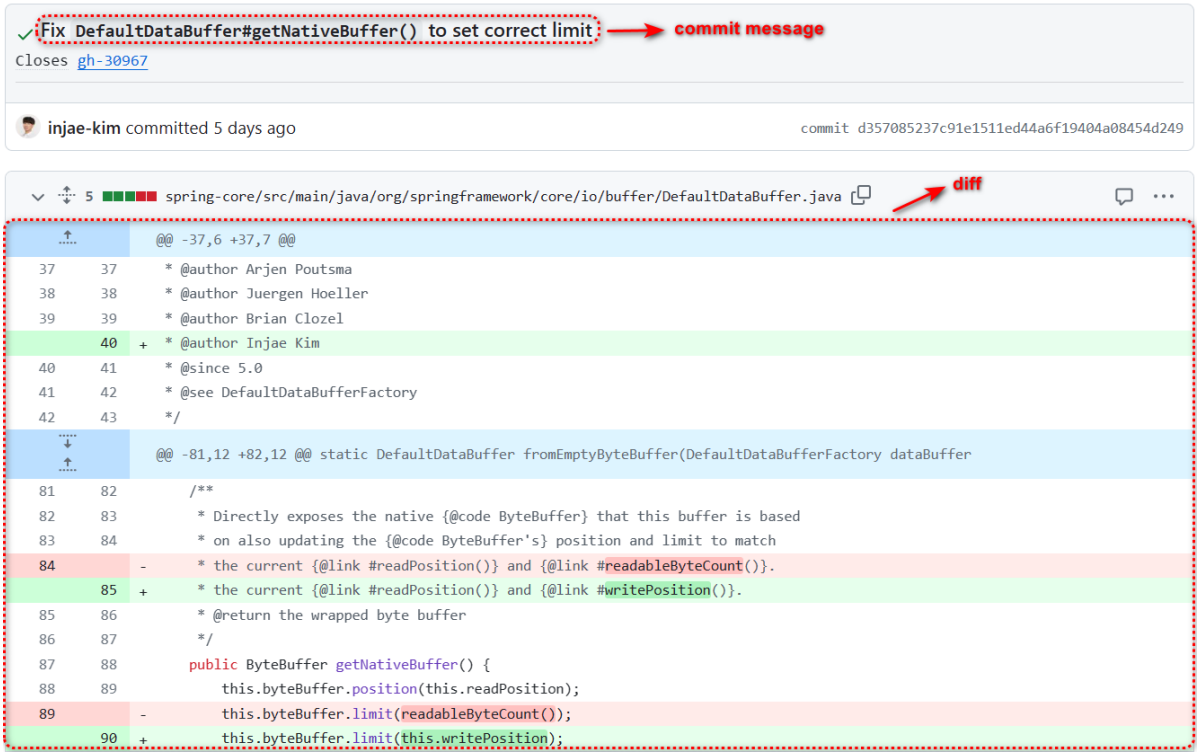
Task Description

1、Background

When you submit code changes to a code repository such as GitHub using a version control system such as Git, it gets organized into a commit with a commit message (usually a sentence or two that explains the content and intent of the commit).

After the code is successfully submitted to GitHub, you can see the commit details in your GitHub repo. In particular, diff refers to a change between a set of files or code. In GitHub, when you view the difference between two different commits, you will see the diff showing the file changes. diff shows, in rows, which rows have been added, removed, or modified.

Here's a concrete example to help you understand:



As you can see from the figure above, the text "Fix DefaultDataBuffer#getNativeBuffer() to set correct limit" at the top is the commit message, indicating the content and intent of the code changes. At the bottom is the diff, which shows the difference between the new version and the previous version, with green lines (beginning with a "+") indicating new lines of code and red lines (beginning with a "-") indicating removed lines.

2、Task Details

Each participant will label 2500 samples independently. Participants need to first read code changes and their corresponding commit messages, and then classify the commit messages based on their specific semantics (identified as explicit and implicit commit messages). Below, we give the definitions of explicit and implicit commit messages:

Explicit commit message: A superficial summary of the code changes. That is, it summarizes only the content of the code changes without taking into account the nature of the change logic or the intent behind it. This perspective of commit messages summarizing code changes is relatively partial and narrow.

Example1:

2 ...n/java/org/springframework/boot/autoconfigure/freemarker/FreeMarkerAutoConfiguration.java

```
@@ -29,6 +29,7 @@
29 29  import org.springframework.boot.context.properties.EnableConfigurationProperties;
30 30  import org.springframework.context.ApplicationContext;
31 31  import org.springframework.context.annotation.Import;
   32 + import org.springframework.context.annotation.ImportRuntimeHints;
32 33  import org.springframework.ui.freemarker.FreeMarkerConfigurationFactory;
33 34
34 35  /**
@@ -44,6 +45,7 @@
44 45  @EnableConfigurationProperties(FreeMarkerProperties.class)
45 46  @Import({ FreeMarkerServletWebConfiguration.class, FreeMarkerReactiveWebConfiguration.class,
46 47          FreeMarkerNonWebConfiguration.class })
   48 + @ImportRuntimeHints(FreeMarkerRuntimeHints.class)
47 49  public class FreeMarkerAutoConfiguration {
48 50
49 51      private static final Log logger = LogFactory.getLog(FreeMarkerAutoConfiguration.class);
```

commit message: Add runtime hints for freemarker

Implicit commit message: considering the context information of the changed code, it explains and summarizes the code changes from a relatively global perspective, which can often reflect the nature of the problem or the purpose of the code changes.

Example2:

23 ...configure/src/main/java/org/springframework/boot/autoconfigure/amqp/RabbitProperties.java

```
@@ -1127,17 +1127,20 @@ private String trimPrefix(String input) {
1127 1127          }
1128 1128
1129 1129          private String parseUsernameAndPassword(String input) {
1130      -            if (input.contains("@")) {
1131      -                String[] split = StringUtils.split(input, "@");
1132      -                String creds = split[0];
1133      -                input = split[1];
1134      -                split = StringUtils.split(creds, ":");
1135      -                this.username = split[0];
1136      -                if (split.length > 0) {
1137      -                    this.password = split[1];
1138      -                }
     1130 +            String[] splitInput = StringUtils.split(input, "@");
     1131 +            if (splitInput == null) {
     1132 +                return input;
1139 1133              }
1140      -            return input;
     1134 +            String credentials = splitInput[0];
     1135 +            String[] splitCredentials = StringUtils.split(credentials, ":");
     1136 +            if (splitCredentials == null) {
     1137 +                this.username = credentials;
     1138 +            }
     1139 +            else {
     1140 +                this.username = splitCredentials[0];
     1141 +                this.password = splitCredentials[1];
     1142 +            }
     1143 +            return splitInput[1];
```

commit message: Fix NPE in RabbitProperties if user is given but password is not

After careful analysis, if a commit message is considered to be an explicit commit message, it is labeled as 0 on "isTarget"; Otherwise, the implicit commit message is labeled as 1.