

```
1  public interface SentenceBuilder{
2      void buildSubject();
3      void buildVerb();
4      void buildObject();
5      void extendSentence();
6      void whenSentence();
7  }
```

Figure 1: Source code for/src/SentenceBuilder.java

```
1  public class PastSentenceBuilder implements SentenceBuilder{
2      private String subject, verb, object,sentence;
3
4      public PastSentenceBuilder(String subject, String verb, String object) {
5          super();
6          this.subject = subject;
7          this.verb = verb;
8          this.object = object;
9          reset();
10     }
11
12     @Override
13     public void buildSubject() {
14         sentence += "the " + subject + " ";
15     }
16
17     @Override
18     public void buildVerb() {
19         sentence += verb + "ed ";
20     }
21
22     @Override
23     public void buildObject() {
24         sentence += object;
25     }
26
27     @Override
28     public void extendSentence() {
29         sentence += "Yesterday, ";
30     }
31     @Override
32     public void whenSentence() {
33         sentence += "When did ";
34     }
35     public String getResult() {
36         return sentence;
37     }
38     public void reset() {
39         sentence = "";
40     }
41 }
```

Figure 2: Source code for/src/PastSentenceBuilder.java

```

1  public class PresentSentenceBuilder implements SentenceBuilder{
2      private String subject, verb, object, sentence;
3
4      public PresentSentenceBuilder(String subject, String verb, String object) {
5          super();
6          this.subject = subject;
7          this.verb = verb;
8          this.object = object;
9          reset();
10     }
11
12     @Override
13     public void buildSubject() {
14         sentence += "the " + subject + " ";
15     }
16     @Override
17     public void buildVerb() {
18         sentence += verb + "s ";
19     }
20     @Override
21     public void buildObject() {
22         sentence += object+ " ";
23     }
24     @Override
25     public void extendSentence() {
26         sentence += "Everyday, ";
27     }
28     @Override
29     public void whenSentence() {
30         sentence += "When does ";
31     }
32     public String getResult() {
33         return sentence;
34     }
35     public void reset() {
36         sentence = "";
37     }
38 }
```

Figure 3: Source code for/src/PresentSentenceBuilder.java

```

1  public class SimpleSentaceDirector {
2      private SentenceBuilder builder;
3
4      public SimpleSentaceDirector(SentenceBuilder builder) {
5          this.builder = builder;
6      }
7      public void Counsrtuct() {
8          builder.extendSentence();
9          builder.buildSubject() ;
10         builder.buildVerb() ;
11         builder.buildObject();
12     }
13 }
14 }
```

Figure 4: Source code for/src/SimpleSentaceDirector.java

```

1  public class WhenSentaceDirector {
2      private SentenceBuilder builder;
3
4      public WhenSentaceDirector(SentenceBuilder builder) {
5          this.builder = builder;
6      }
7      public void Counsrtuct() {
8          builder.whenSentence();
9          builder.buildSubject();
10         builder.buildVerb();
11         builder.buildObject();
12     }
13 }
14 }
```

Figure 5: Source code for/src/WhenSentaceDirector.java

```

1 import java.util.Random;
2
3 public class Main {
4     public static void main(String[] args) {
5         Random rand = new Random();
6         String[] subjects =
7             {"cow", "chicken", "boy", "girl", "baker", "man"};
8         String[] verbs =
9             {"walk", "attack", "play", "answer", "cook", "park"};
10        String[] objects =
11            {"on the grass", "the puppy", "with the ball", "the question", "the meat", "the car"};
12
13        PresentSentenceBuilder curPresentBuilder = new PresentSentenceBuilder(
14            subjects[rand.nextInt(subjects.length)],
15            verbs[rand.nextInt(verbs.length)],
16            objects[rand.nextInt(objects.length)]);
17        );
18        PastSentenceBuilder curPastBuilder = new PastSentenceBuilder(
19            subjects[rand.nextInt(subjects.length)],
20            verbs[rand.nextInt(verbs.length)],
21            objects[rand.nextInt(objects.length)])
22        );
23
24
25        (new SimpleSentenceDirector(curPresentBuilder)).Construct();
26        System.out.println(curPresentBuilder.getResult());
27        (new SimpleSentenceDirector(curPastBuilder)).Construct();
28        System.out.println(curPastBuilder.getResult());
29
30        curPresentBuilder.reset();
31        curPastBuilder.reset();
32        (new WhenSentenceDirector(curPresentBuilder)).Construct();
33        System.out.println(curPresentBuilder.getResult());
34        (new WhenSentenceDirector(curPastBuilder)).Construct();
35        System.out.println(curPastBuilder.getResult());
36
37
38    }
39}
40

```

Figure 6: Source code for .../src/Main.java