

Write a Java program to create an abstract class Person with abstract methods eat() and exercise(). Create subclasses Athlete and LazyPerson that extend the Person class and implement the respective methods to describe how each person eats and exercises.

Sample Solution:

Java Code:

```
//Person.java
// Define an abstract class named Person
abstract class Person {
    // Declare an abstract method eat
    public abstract void eat();

    // Declare an abstract method exercise
    public abstract void exercise();
}
```

```
//Athlete.java
// Define a class named Athlete that extends the Person class
class Athlete extends Person {
    // Override the eat method from the Person class
    @Override
    public void eat() {
        // Print a message about the athlete's diet
        System.out.println("Athlete: Include foods full of calcium, iron, potas");
    }

    // Override the exercise method from the Person class
    @Override
    public void exercise() {
        // Print a message about the athlete's training
        System.out.println("Athlete: Training allows the body to gradually build");
    }
}
```

```
//LazyPerson.java
// Define a class named LazyPerson that extends the Person class
class LazyPerson extends Person {
    // Override the eat method from the Person class
```

```

@Override
public void eat() {
    // Print a message about the lazy person's eating habits
    System.out.println("Couch Potato: Eating while watching TV also prolongs life");
}

// Override the exercise method from the Person class
@Override
public void exercise() {
    // Print a message about the lazy person's exercise habits
    System.out.println("Couch Potato: Rarely exercising or being physically active");
}
}

```

```

//Main.java
// Define the Main class
public class Main {
    // The main method, the entry point of the program
    public static void main(String[] args) {
        // Create an instance of Athlete as a Person
        Person athlete = new Athlete();
        // Create an instance of LazyPerson as a Person
        Person lazyPerson = new LazyPerson();

        // Call the eat method on the athlete object
        athlete.eat();
        // Call the exercise method on the athlete object
        athlete.exercise();

        // Call the eat method on the lazyPerson object
        lazyPerson.eat();
        // Call the exercise method on the lazyPerson object
        lazyPerson.exercise();
    }
}

```

Output:

Athlete: Include foods full of calcium, iron, potassium, and fiber.
 Athlete: Training allows the body to gradually build up strength and endurance,

Couch Potato: Eating while watching TV also prolongs the time period that we're
Couch Potato: Rarely exercising or being physically active.

Explanation:

