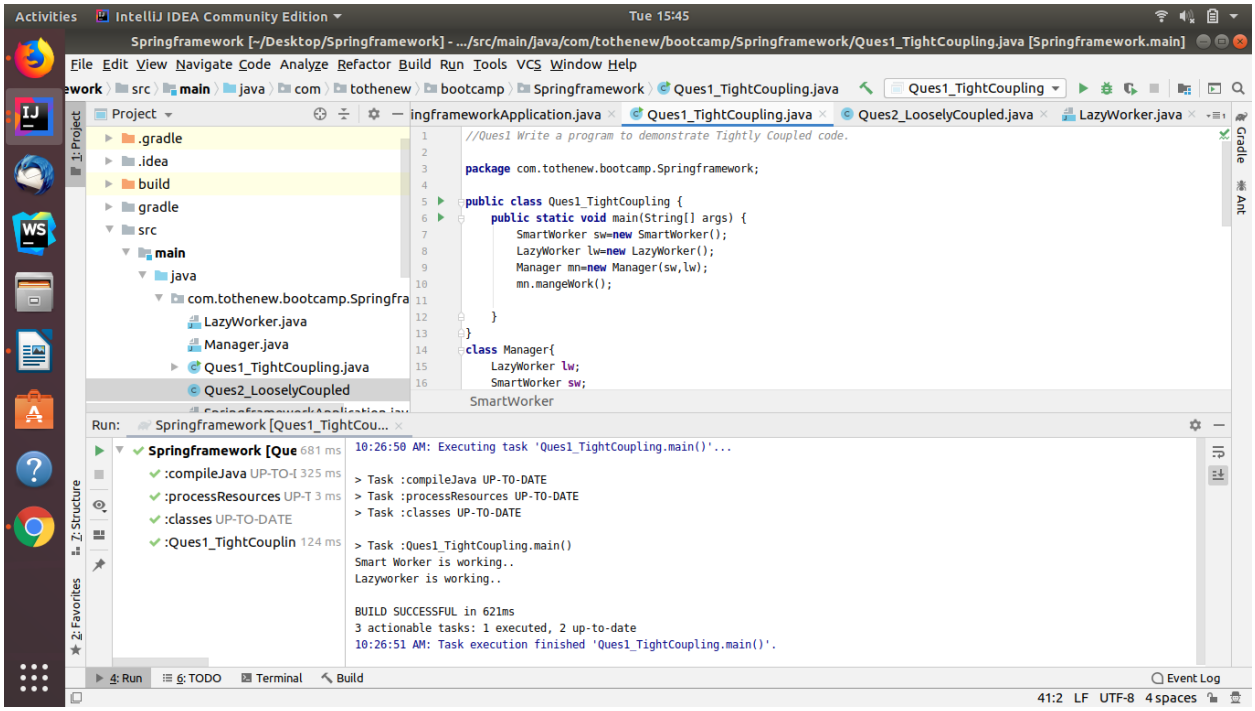
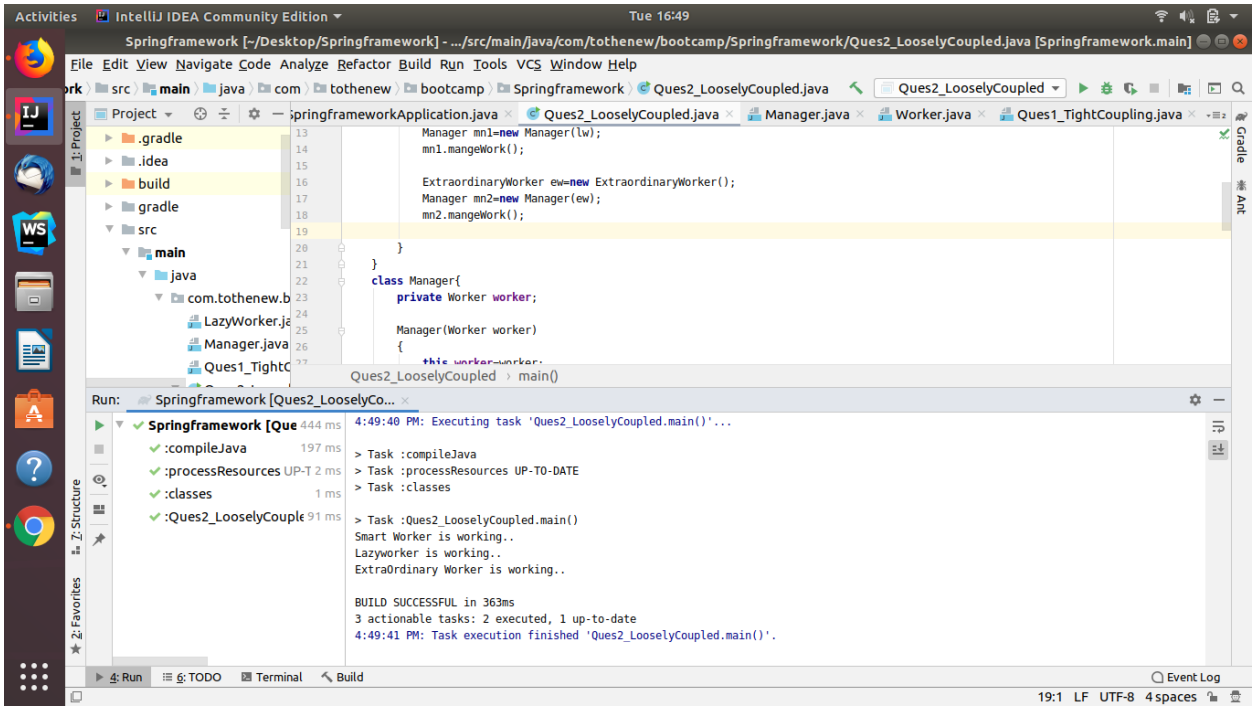
```java
//Ques1 Write a program to demonstrate Tightly Coupled code.

package com.tothenew.bootcamp.Springframework;

public class Ques1_TightCoupling {
  public static void main(String[] args) {
     SmartWorker sw=new SmartWorker();
     LazyWorker lw=new LazyWorker();
     Manager mn=new Manager(sw,lw);
     mn.mangeWork();

  }
}
class Manager{
  LazyWorker lw;
  SmartWorker sw;

  Manager(SmartWorker sw,LazyWorker lw)
  {
     this.sw=sw;
     this.lw=lw;
  }
  public void mangeWork()
  {
     sw.Work();
     lw.Work();
  }
}

class LazyWorker{
  public void Work(){
     System.out.println("Lazyworker is working..");
  }
}

class SmartWorker{
  public void Work(){
     System.out.println("Smart Worker is working..");
  }

}
```


Activities
IntelliJ IDEA Community Edition
Tue 15:45
Springframework [~/Desktop/Springframework] - .../src/main/Java/com/tothenew/bootcamp/Springframework/Ques1_TightCoupling.java [Springframework.main]
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Project
.gradle
.idea
build
gradle
src
main
java
com.tothenew.bootcamp.Springfra
LazyWorker.java
Manager.java
Ques1_TightCoupling.java
Ques2_LooselyCoupled
ingframeworkApplication.java
Ques1_TightCoupling.java
Ques2_LooselyCoupled.java
LazyWorker.java
//Ques1 Write a program to demonstrate Tightly Coupled code.
package com.tothenew.bootcamp.Springframework;
public class Ques1_TightCoupling {
public static void main(String[] args) {
SmartWorker sw=new SmartWorker();
LazyWorker lw=new LazyWorker();
Manager mn=new Manager(sw,lw);
mn.mangeWork();
}
}
class Manager{
LazyWorker lw;
SmartWorker sw;
SmartWorker
Run:
Springframework [Ques1_TightCou...
Springframework [Que 681 ms
:compileJava UP-TO-[325 ms
:processResources UP-T 3 ms
:classes UP-TO-DATE
:Ques1_TightCouplin 124 ms
10:26:50 AM: Executing task 'Ques1_TightCoupling.main()'...
> Task :compileJava UP-TO-DATE
> Task :processResources UP-TO-DATE
> Task :classes UP-TO-DATE
> Task :Ques1_TightCoupling.main()
Smart Worker is working..
Lazyworker is working..
BUILD SUCCESSFUL in 621ms
3 actionable tasks: 1 executed, 2 up-to-date
10:26:51 AM: Task execution finished 'Ques1_TightCoupling.main()'.
4: Run
6: TODO
Terminal
Build
Event Log
41:2 LF UTF-8 4 spaces

```java
//(2) Write a program to demonstrate Loosely Coupled code.

package com.tothenew.bootcamp.Springframework;

public class Ques2_LooselyCoupled {

    public static void main(String[]args){
        SmartWorker sw = new SmartWorker();
        Manager mn = new Manager(sw);
        mn.mangeWork();

        LazyWorker lw=new LazyWorker();
        Manager mn1=new Manager(lw);
        mn1.mangeWork();

        ExtraordinaryWorker ew=new ExtraordinaryWorker();
        Manager mn2=new Manager(ew);
        mn2.mangeWork();

    }
}



class Manager{
    private Worker worker;

    Manager(Worker worker)
    {
        this.worker=worker;
    }
    public void mangeWork()
    {
        worker.Work();
    }
}
interface Worker{
void Work();
}

class LazyWorker implements Worker{
    @Override
    public void Work(){
        System.out.println("Lazyworker is working..");
    }
}

class SmartWorker implements Worker {
    @Override
```

```java
public void Work() {
    System.out.println("Smart Worker is working..");
}
}

class ExtraordinaryWorker implements Worker {
    @Override
    public void Work() {
        System.out.println("ExtraOrdinary Worker is working..");
    }

}
```



//(3) Use @Compenent and @Autowired annotations to in Loosely Coupled code for dependency management

File=Manager.java

```
package com.tothenew.bootcamp.Springframework.Ques3;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Component;

@Component
class Manager{

  @Autowired
  private Worker worker;

  Manager(Worker worker)
  {
     this.worker=worker;
  }
  public void mangeWork()
  {
     worker.Work();
  }
}
```

File=LazyWorker.java

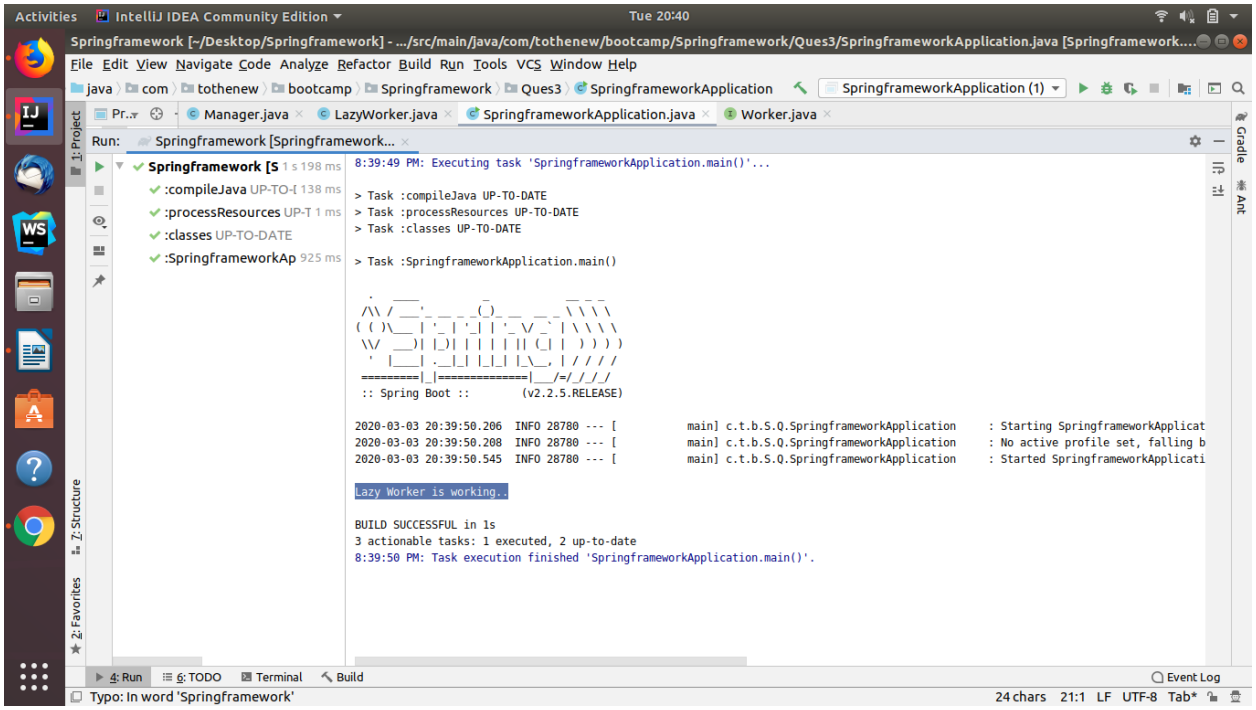
```
package com.tothenew.bootcamp.Springframework.Ques3;

import org.springframework.stereotype.Component;

@Component
public class LazyWorker implements Worker{
  @Override
  public void Work(){
     System.out.println();
     System.out.println("Lazy Worker is working..");
  }

}
```

File=Worker.java

```
package com.tothenew.bootcamp.Springframework.Ques3;

interface Worker {
  public void Work();
}
```

File=SpringframeworkApplication

```
package com.tothenew.bootcamp.Springframework.Ques3;
//package com.tothenew.bootcamp.Springframework;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.ApplicationContext;

@SpringBootApplication
public class SpringframeworkApplication {

  public static void main(String[] args) {

    ApplicationContext applicationContext=SpringApplication.run(SpringframeworkApplication.class, args);
    Manager manager=applicationContext.getBean(Manager.class);
    manager.mangeWork();


  }
}
```


Activities
IntelliJ IDEA Community Edition
Tue 20:40
Springframework [~/Desktop/Springframework] - .../src/main/java/com/tothenew/bootcamp/Springframework/Ques3/SpringframeworkApplication.java [Springframework....
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
java com tothenew bootcamp Springframework Ques3 SpringframeworkApplication
SpringframeworkApplication (1)
Manager.java
LazyWorker.java
SpringframeworkApplication.java
Worker.java
Run:
Springframework [Springframework...
Springframework [S 1 s 198 ms
:compileJava UP-TO-[138 ms
:processResources UP-T 1 ms
:classes UP-TO-DATE
:SpringframeworkAp 925 ms
8:39:49 PM: Executing task 'SpringframeworkApplication.main()'...
> Task :compileJava UP-TO-DATE
> Task :processResources UP-TO-DATE
> Task :classes UP-TO-DATE
> Task :SpringframeworkApplication.main()
:: Spring Boot :: (v2.2.5.RELEASE)
2020-03-03 20:39:50.206 INFO 28780 --- [main] c.t.b.S.Q.SpringframeworkApplication : Starting SpringframeworkApplicat
2020-03-03 20:39:50.208 INFO 28780 --- [main] c.t.b.S.Q.SpringframeworkApplication : No active profile set, falling b
2020-03-03 20:39:50.545 INFO 28780 --- [main] c.t.b.S.Q.SpringframeworkApplication : Started SpringframeworkApplicati
Lazy Worker is working..
BUILD SUCCESSFUL in 1s
3 actionable tasks: 1 executed, 2 up-to-date
8:39:50 PM: Task execution finished 'SpringframeworkApplication.main()'.
4: Run
6: TODO
Terminal
Build
Event Log
Typo: In word 'Springframework'
24 chars 21:1 LF UTF-8 Tab*

//(4) Get a Spring Bean from application context and display its properties.

File=Manager.java

```
package com.tothenew.bootcamp.Springframework.Ques3;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Component;

@Component
class Manager{

  @Autowired
  private Worker worker;

  Manager(Worker worker)
  {
     this.worker=worker;
  }
  public void mangeWork()
  {
     worker.Work();
  }
}
```

File=SmartWorker.java

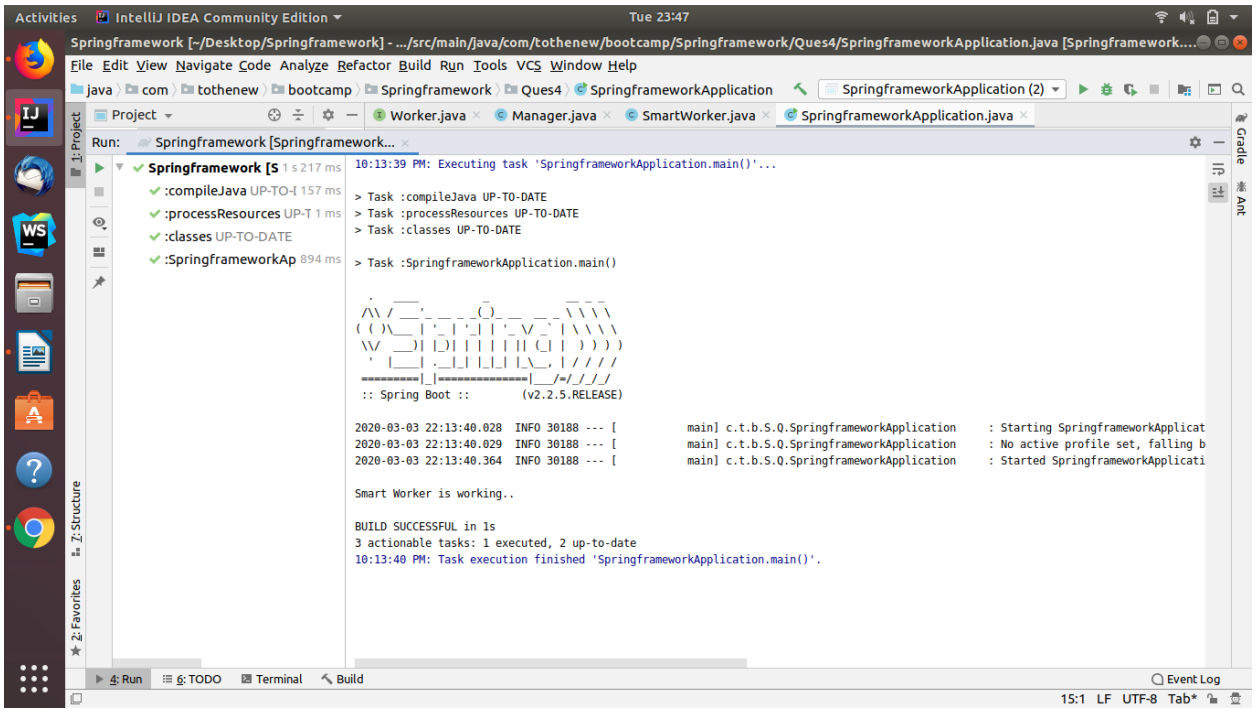
```
package com.tothenew.bootcamp.Springframework.Ques3;

import org.springframework.stereotype.Component;

@Component
public class SmartWorker implements Worker{
  @Override
  public void Work(){
     System.out.println();
     System.out.println("Smart Worker is working..");
  }

}
```

File=Worker.java

```
package com.tothenew.bootcamp.Springframework.Ques3;

interface Worker {
  public void Work();
}
```

File=SpringframeworkApplication

```
package com.tothenew.bootcamp.Springframework.Ques3;
//package com.tothenew.bootcamp.Springframework;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.ApplicationContext;

@SpringBootApplication
public class SpringframeworkApplication {

  public static void main(String[] args) {

    ApplicationContext applicationContext=SpringApplication.run(SpringframeworkApplication.class, args);
    Manager manager=applicationContext.getBean(Manager.class);
    manager.mangeWork();


  }
}
```



//(5) Demonstrate how you will resolve ambiguity while autowiring bean (Hint : @Primary)

File=Manager.java

```
package com.tothenew.bootcamp.Springframework.Ques5;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Component;

@Component
class Manager{

  @Autowired
  private Worker worker;

  Manager(Worker worker)
  {
     this.worker=worker;
  }
  public void mangeWork()
  {
     worker.Work();
  }
}
```

File=SmartWorker.java

```
package com.tothenew.bootcamp.Springframework.Ques5;

import org.springframework.context.annotation.Primary;
import org.springframework.stereotype.Component;

@Component
@Primary
public class SmartWorker implements Worker {
  @Override
  public void Work(){
     System.out.println();
     System.out.println("Smart Worker is working..");
  }

}
```

File=LazyWorker.java

```
package com.tothenew.bootcamp.Springframework.Ques5;

import org.springframework.stereotype.Component;
```

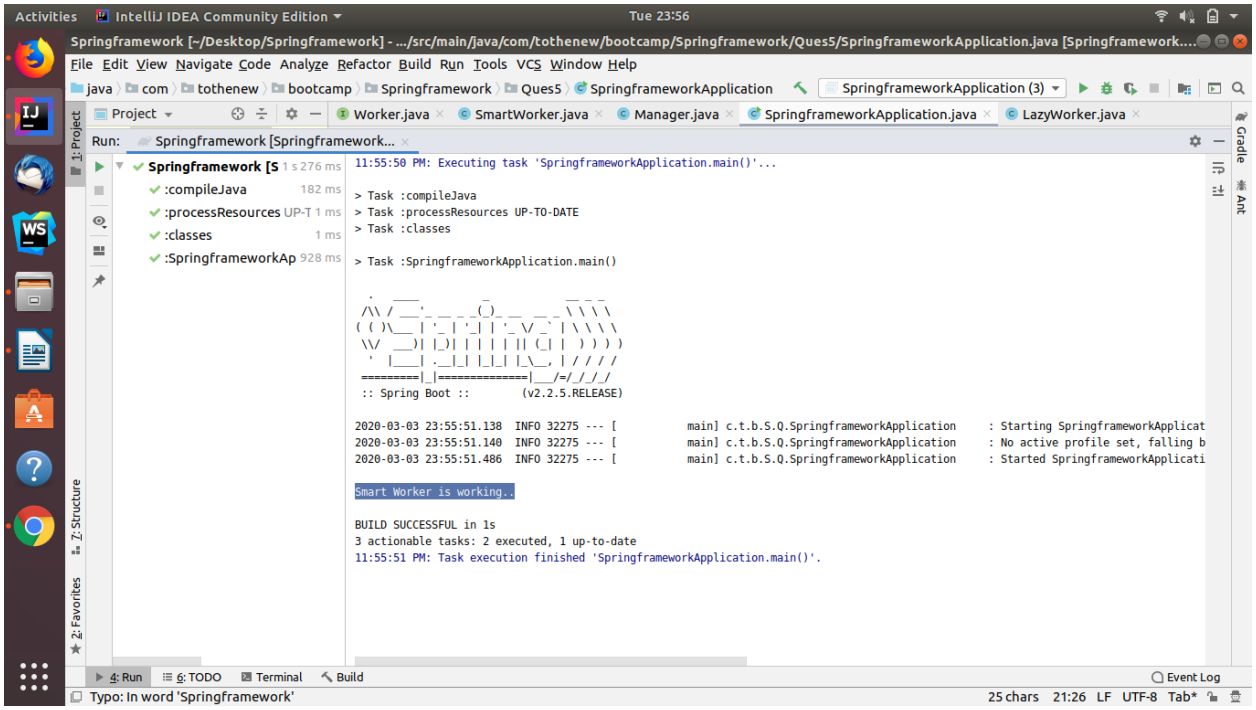
```java
@Component
public class LazyWorker implements Worker {
  @Override
  public void Work() {
     System.out.println("LazyWorker is working..");
  }
}
```

File=Worker.java

```java
package com.tothenew.bootcamp.Springframework.Ques5;

public interface Worker {
     void Work();
}
```

File=SpringframeworkApplication

```java
package com.tothenew.bootcamp.Springframework.Ques5;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.ApplicationContext;

@SpringBootApplication
public class SpringframeworkApplication {

  public static void main(String[] args) {

    ApplicationContext applicationContext=SpringApplication.run(SpringframeworkApplication.class, args);
    Manager manager=applicationContext.getBean(Manager.class);
    manager.mangeWork();

  }
}
```


Activities
IntelliJ IDEA Community Edition
Tue 23:56
Springframework [~/Desktop/Springframework] - .../src/main/java/com/tothenew/bootcamp/Springframework/Ques5/SpringframeworkApplication.java [Springframework....
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
java com tothenew bootcamp Springframework Ques5 SpringframeworkApplication
SpringframeworkApplication (3)
Project
Worker.java
SmartWorker.java
Manager.java
SpringframeworkApplication.java
LazyWorker.java
Run:
Springframework [Springframework...
Springframework [S 1 s 276 ms
:compileJava 182 ms
:processResources UP-T 1 ms
:classes 1 ms
:SpringframeworkAp 928 ms
11:55:50 PM: Executing task 'SpringframeworkApplication.main()'...
> Task :compileJava
> Task :processResources UP-TO-DATE
> Task :classes
> Task :SpringframeworkApplication.main()
:: Spring Boot :: (v2.2.5.RELEASE)
2020-03-03 23:55:51.138 INFO 32275 --- [main] c.t.b.S.Q.SpringframeworkApplication : Starting SpringframeworkApplicat
2020-03-03 23:55:51.140 INFO 32275 --- [main] c.t.b.S.Q.SpringframeworkApplication : No active profile set, falling b
2020-03-03 23:55:51.486 INFO 32275 --- [main] c.t.b.S.Q.SpringframeworkApplication : Started SpringframeworkApplicati
Smart Worker is working..
BUILD SUCCESSFUL in 1s
3 actionable tasks: 2 executed, 1 up-to-date
11:55:51 PM: Task execution finished 'SpringframeworkApplication.main()'.
1: Project
7: Structure
2: Favorites
Gradle
Ant
4: Run
6: TODO
Terminal
Build
Event Log
Typo: In word 'Springframework'
25 chars 21:26 LF UTF-8 Tab*

```
//(6) Perform Constructor Injection in a Spring Bean
```

File=Injector.java

```
package com.tothenew.bootcamp.Springframework.Ques6;

import org.springframework.beans.factory.annotation.Autowired;

public class Injector {
  @Autowired
  public Something something;

  // Method 1 using Constructor

  @Autowired
  Injector(Something something)
  {
    this.something=something;
  }

  // Using Setters

  @Autowired
  void setSomething(Something something)

  {
    this.something=something;
  }


  public void showmsg()

  {
    something.show();
  }
}
```

File=Something.java

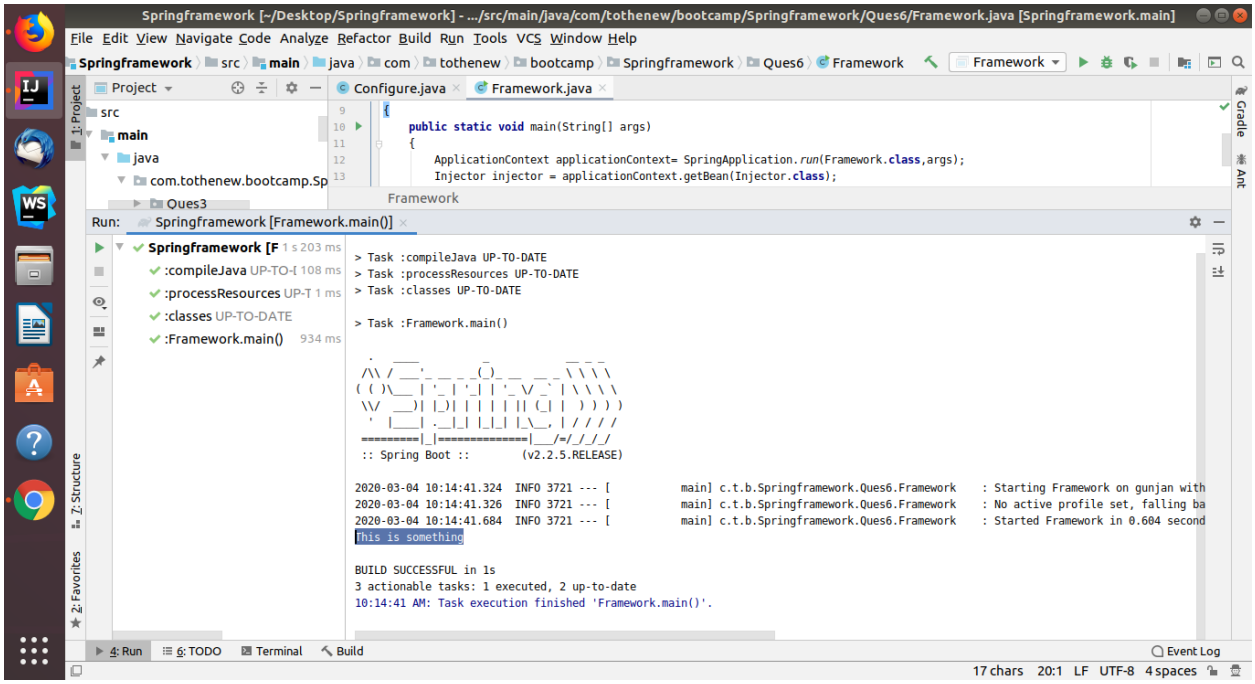
```
package com.tothenew.bootcamp.Springframework.Ques6;

public class Something {
  void show()
  {
    System.out.println("This is something");
  }
}

package com.tothenew.bootcamp.Springframework.Ques6;
```

File=Framework.java

```
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.ApplicationContext;

@SpringBootApplication
public class Framework
{
  public static void main(String[] args)
  {
     ApplicationContext applicationContext= SpringApplication.run(Framework.class,args);
     Injector injector = applicationContext.getBean(Injector.class);
     injector.showmsg();

  }
}
```

File=Configure.java

```
package com.tothenew.bootcamp.Springframework.Ques6;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;

@Configuration
public class Configure {

  @Autowired
  Something something;
  @Bean
  Injector injector () {
     return new Injector(something);
  }

  @Bean
  Something something () {
     return new Something();
  }

}
```


Springframework [~/Desktop/Springframework] - .../src/main/java/com/tothenew/bootcamp/Springframework/Ques6/Framework.java [Springframework.main]
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Springframework src main java com tothenew bootcamp Springframework Ques6 Framework
Framework
Project
src
main
java
com.tothenew.bootcamp.Sp
Ques3
Configure.java
Framework.java
{
public static void main(String[] args)
{
ApplicationContext applicationContext= SpringApplication.run(Framework.class,args);
Injector injector = applicationContext.getBean(Injector.class);
Framework
Run:
Springframework [Framework.main()]
Springframework [F 1 s 203 ms
:compileJava UP-TO-[108 ms
:processResources UP-T 1 ms
:classes UP-TO-DATE
:Framework.main() 934 ms
> Task :compileJava UP-TO-DATE
> Task :processResources UP-TO-DATE
> Task :classes UP-TO-DATE
> Task :Framework.main()
:: Spring Boot :: (v2.2.5.RELEASE)
2020-03-04 10:14:41.324 INFO 3721 --- [main] c.t.b.Springframework.Ques6.Framework : Starting Framework on gunjan with
2020-03-04 10:14:41.326 INFO 3721 --- [main] c.t.b.Springframework.Ques6.Framework : No active profile set, falling ba
2020-03-04 10:14:41.684 INFO 3721 --- [main] c.t.b.Springframework.Ques6.Framework : Started Framework in 0.604 second
this is something
BUILD SUCCESSFUL in 1s
3 actionable tasks: 1 executed, 2 up-to-date
10:14:41 AM: Task execution finished 'Framework.main()'.
4: Run
6: TODO
Terminal
Build
Event Log
17 chars 20:1 LF UTF-8 4 spaces