

CS105

LAB - 1

Extra exercises
Ş. Görkem Okur



This document is prepared for students who want to repeat lab one or the students who could not be able to attend to class.

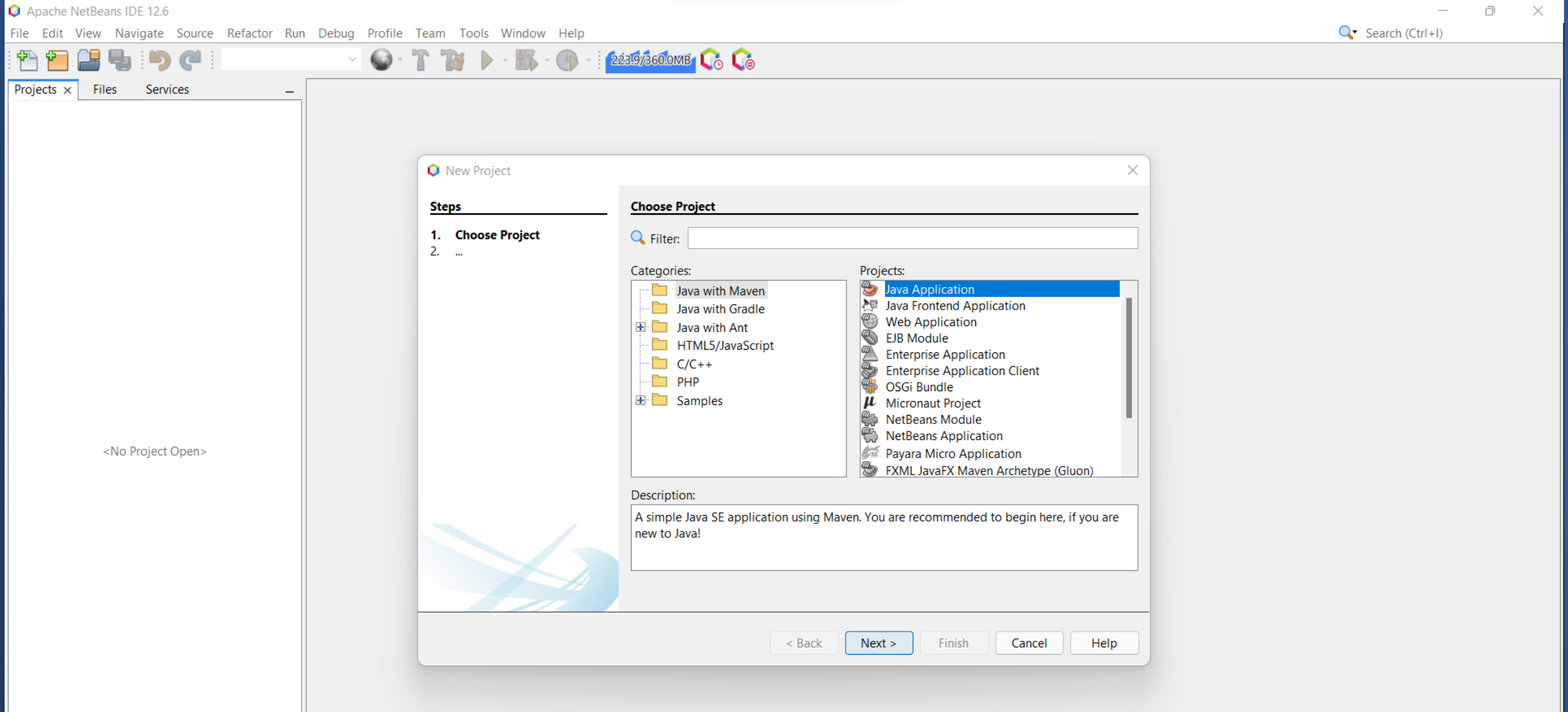
To read this document at least once is highly recommended, before second lab. 😊

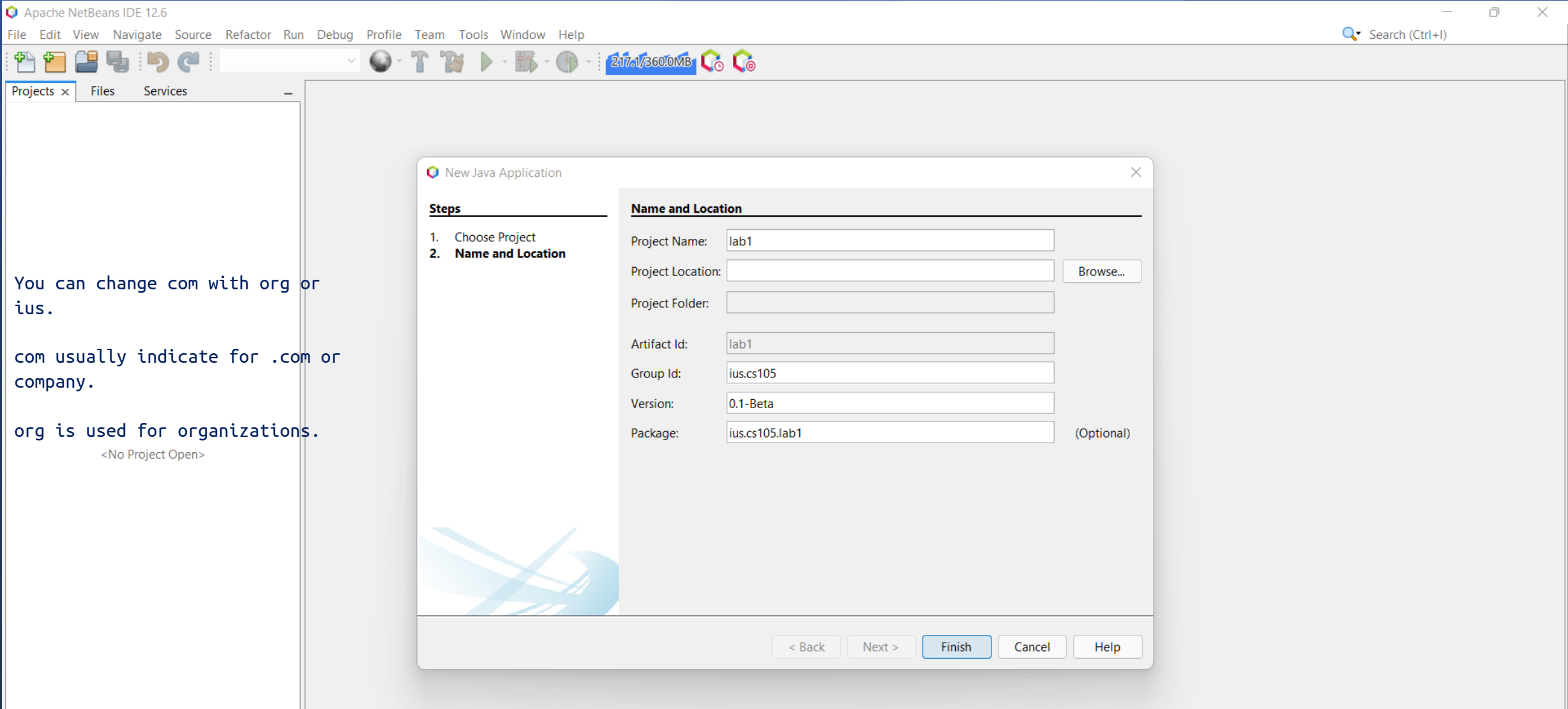
Apache NetBeans IDE 12.6

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

- New Project... Ctrl+Shift+N
- New File... Ctrl+N
- Open Project... Ctrl+Shift+O
 - Open Recent Project >
 - Close Project
 - Close Other Projects
 - Close All Projects
 - Open File...
 - Open Recent File >
- Project Groups...
- Project Properties
- Import Project >
- Export Project >
- Save Ctrl+S
- Save As...
- Save All Ctrl+Shift+S
- Page Setup...
- Print... Ctrl+Alt+Shift+P
- Print to HTML...
- Exit

308.0/360.0MB





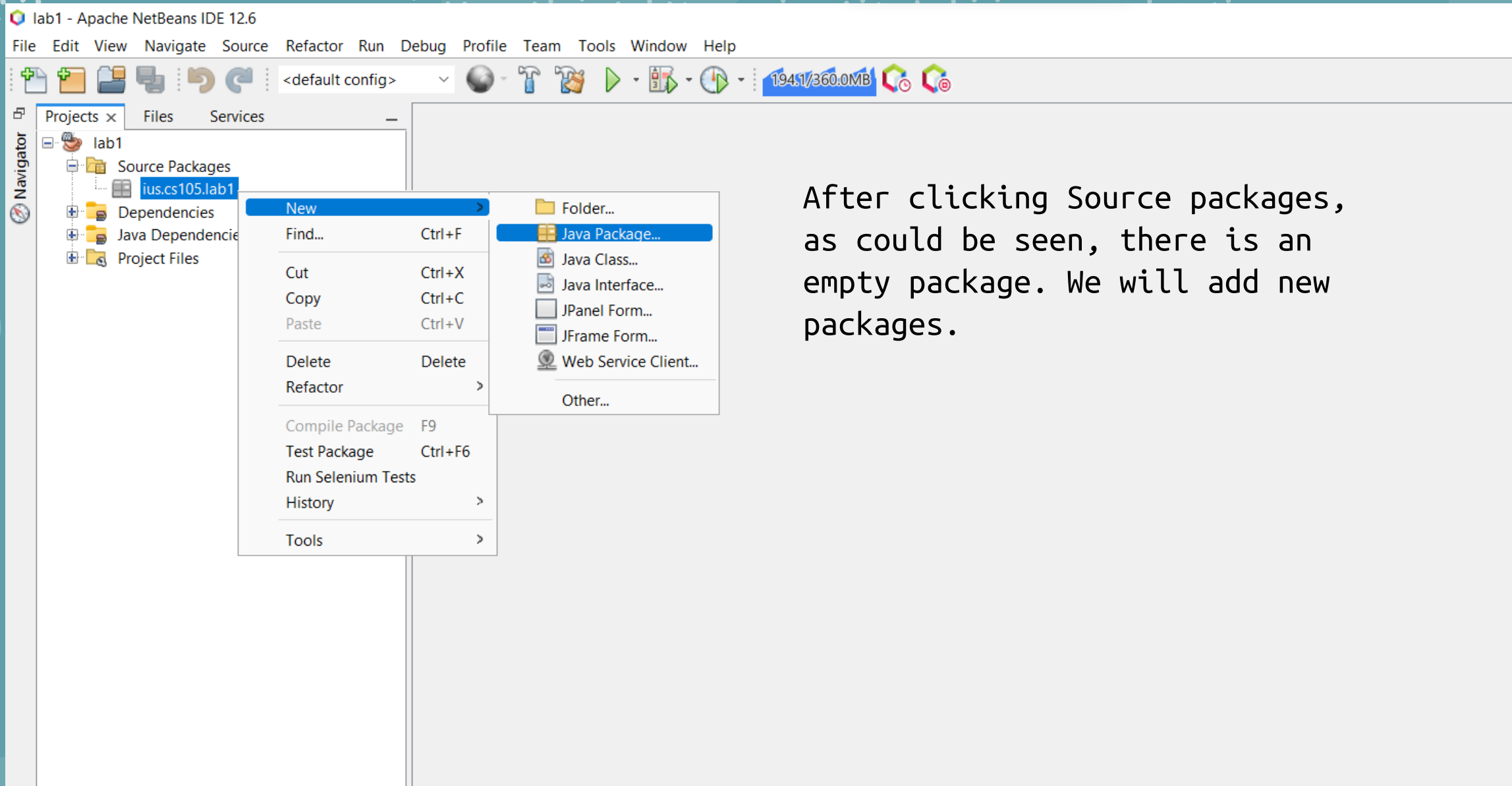
You can change com with org or ius.

com usually indicate for .com or company.

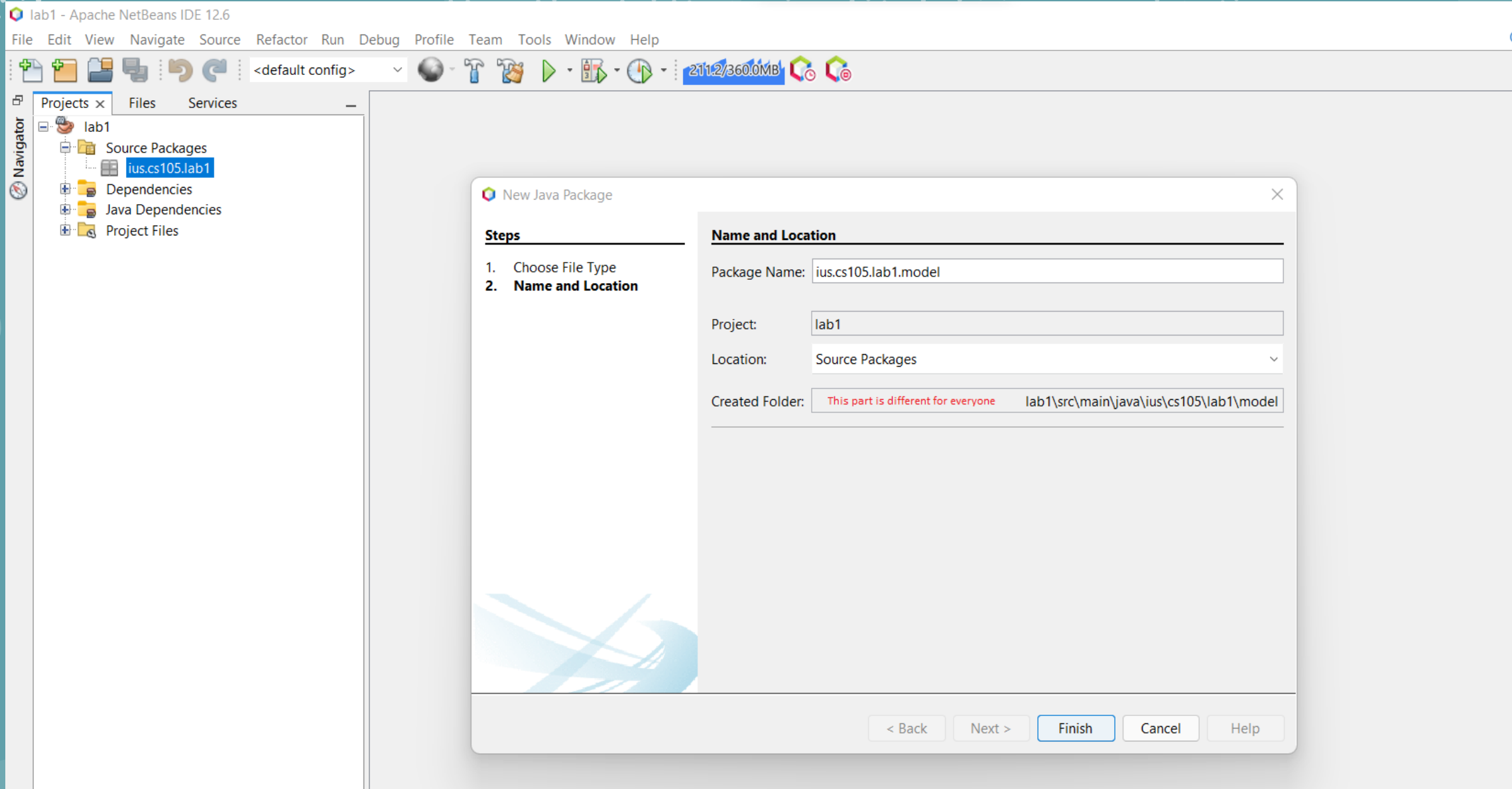
org is used for organizations.

<No Project Open>

if the package name begins with a digit or other character that is illegal to use as the beginning of a Java name, or if the package name contains a reserved Java keyword (Oracle Official Java Tutorial).



After clicking Source packages, as could be seen, there is an empty package. We will add new packages.



lab1 - Apache NetBeans IDE 12.6

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config> 277.0/360.0MB

Projects x Files Services

lab1
Source Packages
ius.cs105.lab1.model
Dependencies
Java Dependencies
Project Files

New

Find... Ctrl+F

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Delete Delete

Refactor

Compile Package F9

Test Package Ctrl+F6

Run Selenium Tests

History

Tools

Folder...

Java Package...

Java Class...

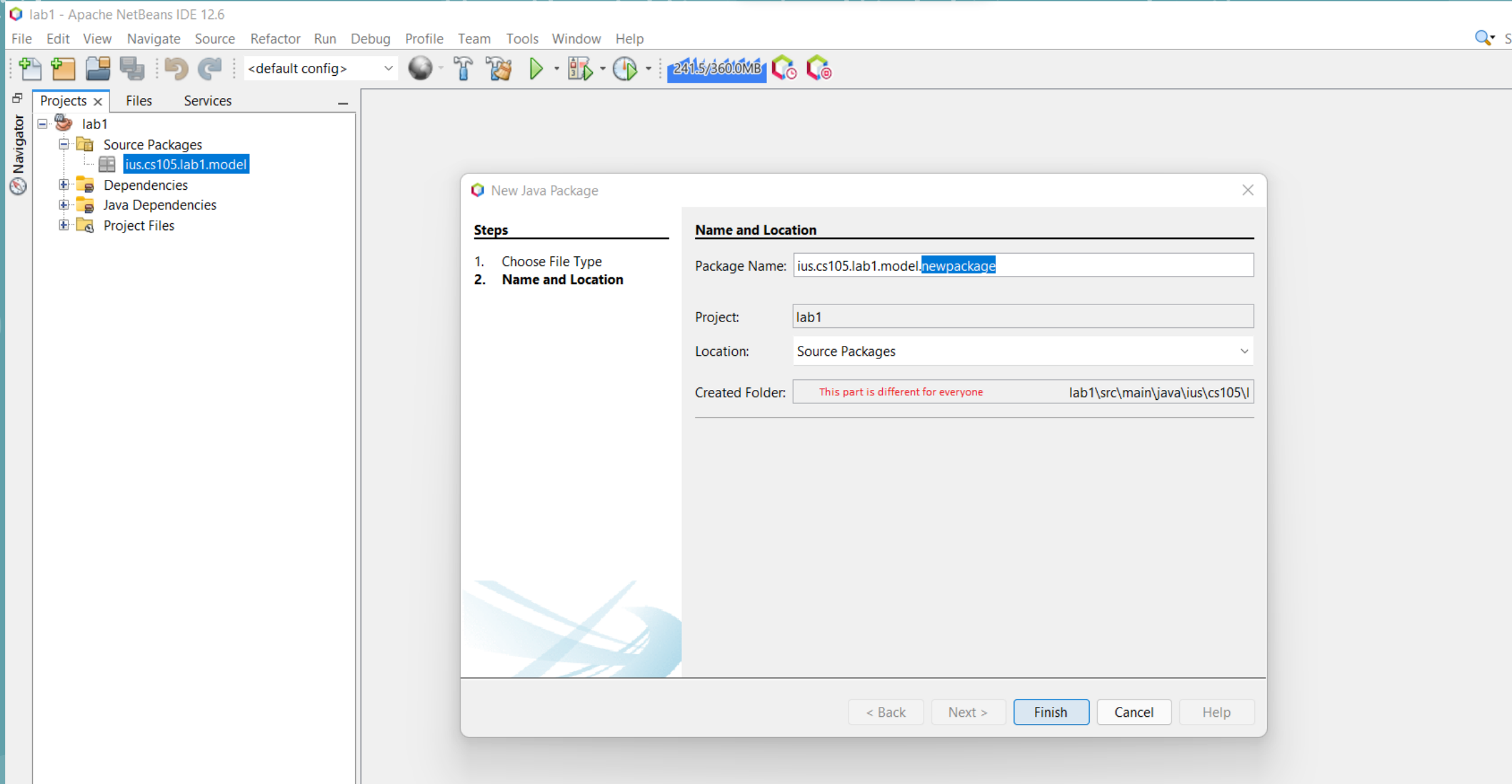
Java Interface...

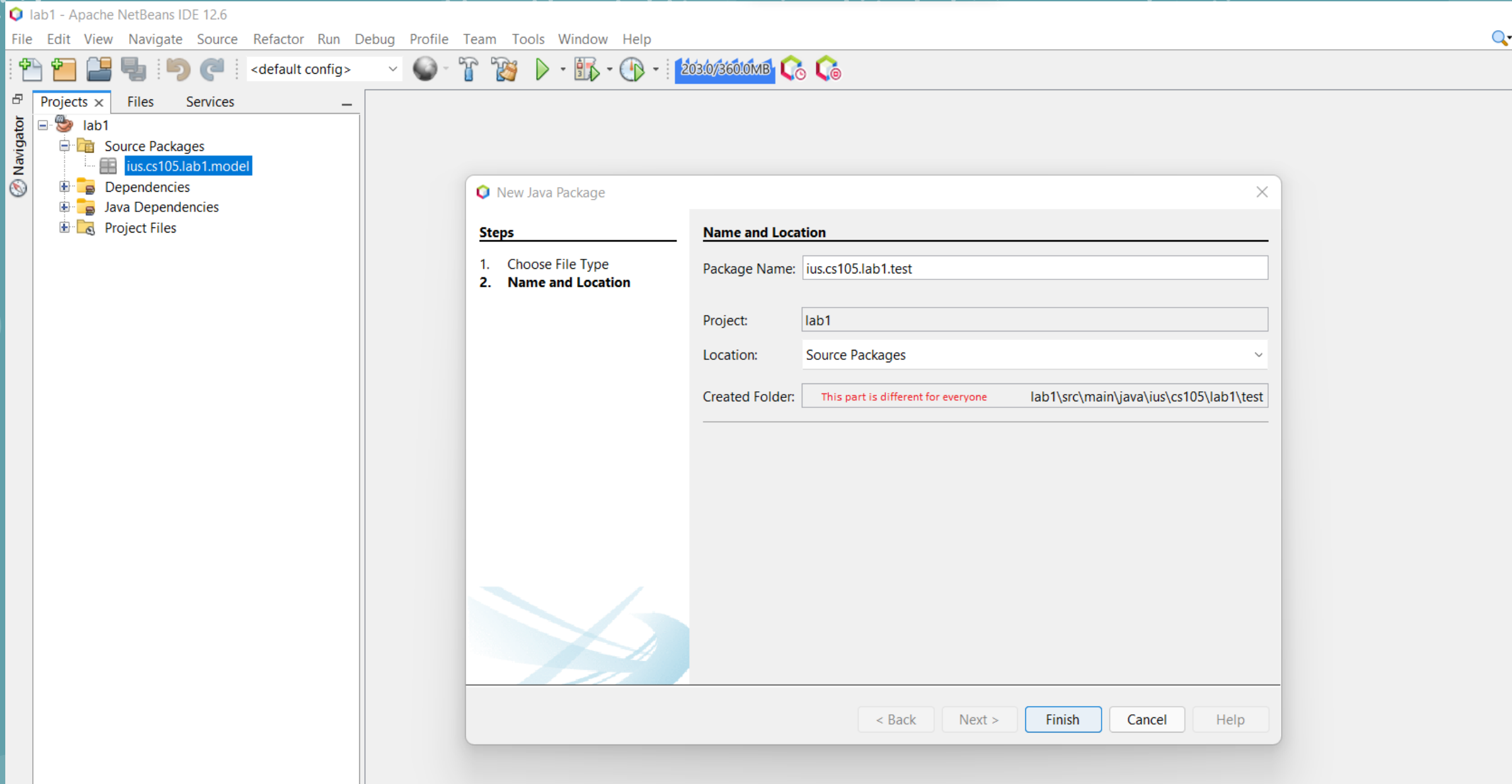
JPanel Form...

JFrame Form...

Web Service Client...

Other...





lab1 - Apache NetBeans IDE 12.6

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config> 251.6/360.0MB

Projects x Files Services

lab1
Source Packages
ius.cs105.lab1.model
ius.cs105.lab1.test
Dependencies
Java Dependencies
Project Files

New

Find... Ctrl+F

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Delete Delete

Refactor >

Compile Package F9

Test Package Ctrl+F6

Run Selenium Tests

History >

Tools >

Folder...

Java Package...

Java Class...

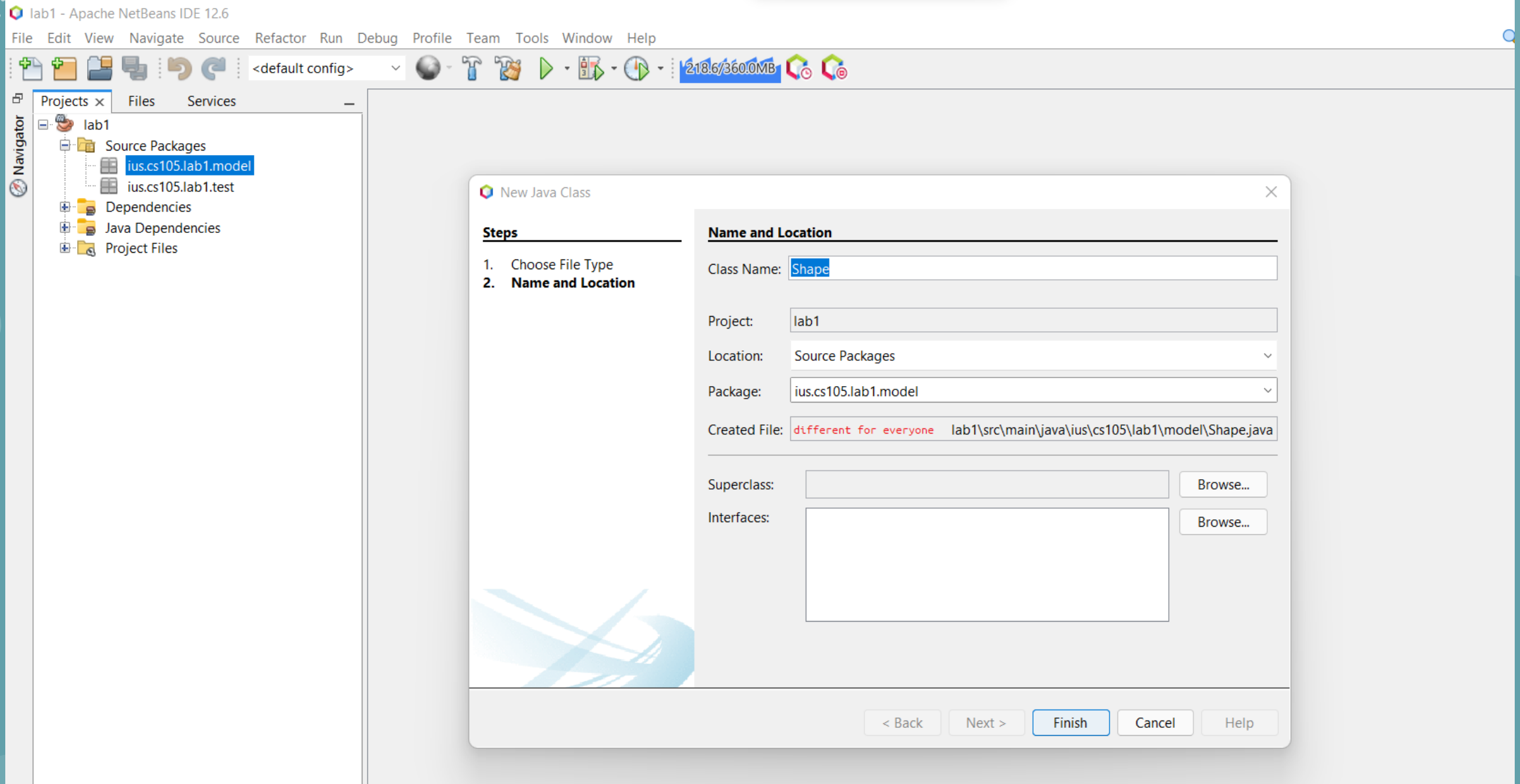
Java Interface...

JPanel Form...

JFrame Form...

Web Service Client...

Other...



lab1 - Apache NetBeans IDE 12.6

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config> 272.2/360.0MB

Projects x Files Services

lab1
Source Packages
ius.cs105.lab1.model
Shape.java
ius.cs105.lab1.test
Dependencies
Java Dependencies
Project Files

New

Find... Ctrl+F

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Delete Delete

Refactor

Compile Package F9

Test Package Ctrl+F6

Run Selenium Tests

History

Tools

Folder...

Java Class...

Java Package...

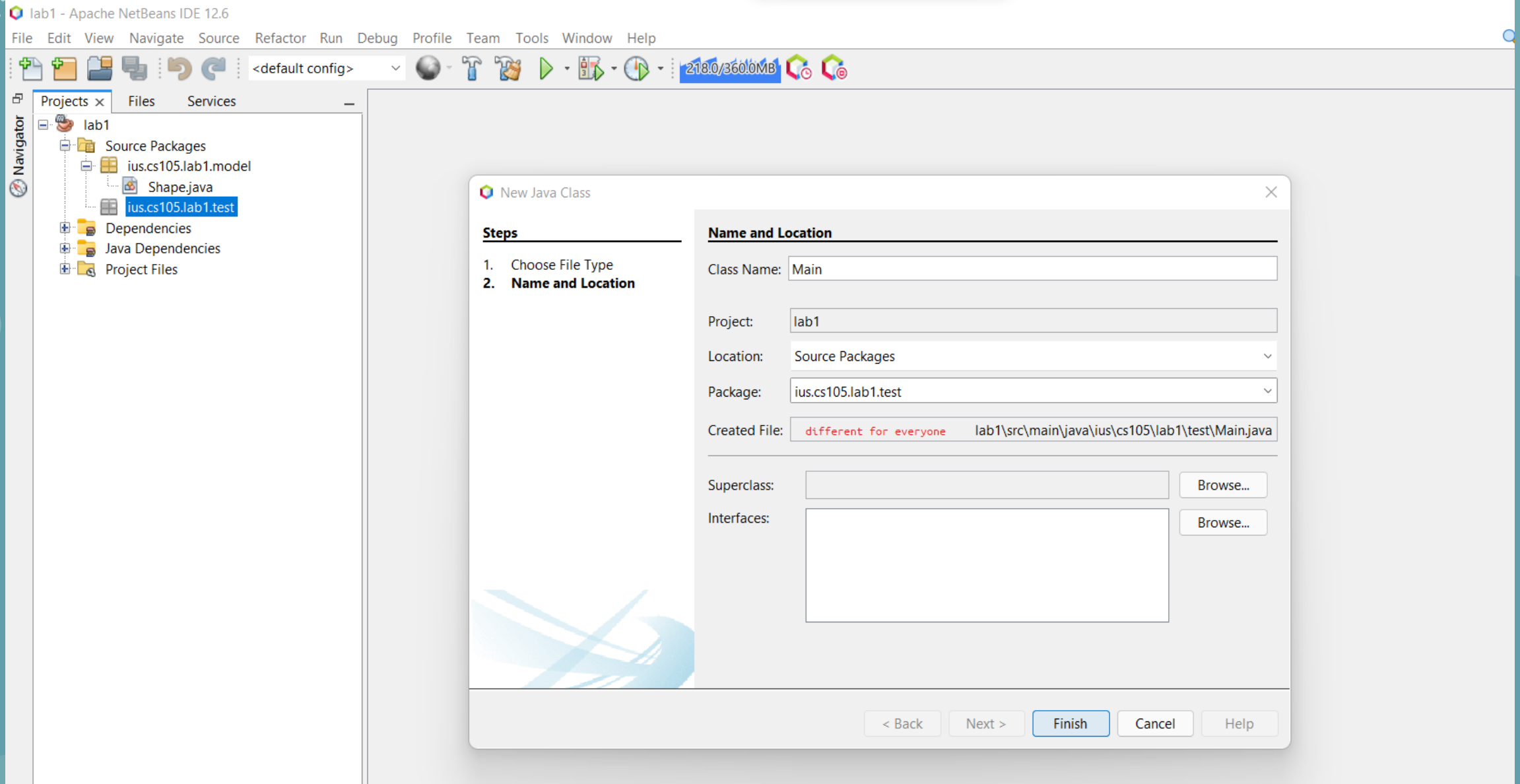
Java Interface...

JPanel Form...

JFrame Form...

Web Service Client...

Other...



lab1 - Apache NetBeans IDE 12.6

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Search (Ctrl+I)

<default config> 263.5/33510MB

Projects Files Services

lab1

- Source Packages
 - ius.cs105.lab1.model
 - Shape.java
 - ius.cs105.lab1.test
 - Main.java
- Test Packages
- Dependencies
- Java Dependencies
- Project Files

Main.java x

Source History

```
1 package ius.cs105.lab1.test;
2
3 import java.util.*;
4
5 /**
6  *
7  * @author Ş. Görkem Okur
8  */
9
10 public class Main {
11
12     public static void main(String[] args) {
13         System.out.println("Hello World");
14     }
15
16 }
17
```

ius.cs105.lab1.test.Main >

Output - Run (lab1) x

Changes detected - recompiling the module!
Compiling 2 source files to C:\Users\gorke\Documents\NetBeansProjects\lab1\target\classes

--- exec-maven-plugin:3.0.0:exec (default-cli) @ lab1 ---

Hello World

BUILD SUCCESS

```
#include <iostream>
```

```
int main(){
```

```
std::cout << "Hello World" << std::endl;  
return 0;
```

```
}
```

```
package ius.cs105.lab1.test;
```

```
import java.util.*;
```

```
/**
```

```
 * @author Ş. Görkem Okur
```

```
 */
```

```
public class Main {
```

```
    public static void main(String[] args) {
```

```
        System.out.println("Hello World");
```

```
    }
```

```
}
```

<iostream>

Standard Input / Output Streams Library

Header that defines the standard input/output stream objects: Including <iostream> automatically includes also <ios>, <streambuf>, <istream>, <ostream> and <iosfwd>.

reference: cplusplus.com

java.util

Contains the collections framework, legacy collection classes, event model, date and time facilities, internationalization, and miscellaneous utility classes (a string tokenizer, a random-number generator, and a bit array).

reference: docs.oracle.com

Projects x Files Services — Main.java x

lab1

- Source Packages
 - ius.cs105.lab1.model
 - Shape.java
 - ius.cs105.lab1.test
 - Main.java
- Test Packages
- Dependencies
- Java Dependencies
- Project Files

Source History

```
12 public static void main(String[] args) {
13
14     char first[] = {'c', 's', '1', '0', '5'};
15
16     String firstString = new String(first);
17
18     System.out.println(firstString);
19
20     System.out.println(firstString.charAt(0));
21
22     System.out.println(firstString.compareTo("0s105"));
23
24     System.out.println(firstString.compareTo(">s105"));
25
26     System.out.println(firstString.compareTo("@s105"));
27
28     System.out.println(firstString.equals("Cs105"));
29
30     System.out.println(firstString.equalsIgnoreCase("Cs105"));
31 }
32
```

ius.cs105.lab1.test.Main > main >

Output - Run (lab1) x

```
-----[ jar ]-----
--- exec-maven-plugin:3.0.0:exec (default-cli) @ lab1 ---
cs105
c
51
37
35
false
true
-----
BUILD SUCCESS
-----
```

Exercise

Get a number from user
and give an output, is it
bigger than 5 or not.

Example:

Input:

Enter a number: 9

Output:

Entered number is bigger than 5.

Exercise

Please create a class named Circle, that includes one instance variable - a radius (type int). Provide a constructor that initialize one instance variables. Provide a set and get method for each instance variable. Write a test app named Main that demonstrates class Circle 's capabilities. Please, create toString method to print Circle objects.

- ❑ Please, create in Main class a Circle object. by taking inputs by user **instantiate** created object.
- ❑ Print the created object by System.out.println() method.



Package Explorer ×

- Lab1-CircleExample
 - > JRE System Library [JavaSE-1.8]
 - src
 - model
 - > Circle.java
 - test
 - > Main.java
 - > Lab1-StudentExercise

*Main.java × Circle.java

```
1 package test;
2
3 /**
4  * @author Ş. Görkem Okur
5  */
6
7 import java.util.Scanner;
8 import model.Circle;
9
10
11 public class Main {
12
13     public static void main(String[] args) {
14
15         System.out.println("----- Area Calculator -----" + System.lineSeparator() );
16
17         System.out.print("Please, enter radius of circle: ");
18         int r = ( new Scanner(System.in) ).nextInt() ;
19
20         Circle c = new Circle(r);
21
22         System.out.println(c);
23
24     }
25
26 }
27
```



Package Explorer ×

- Lab1-CircleExample
 - JRE System Library [JavaSE-1.8]
 - src
 - model
 - Circle.java
 - test
 - Main.java
 - Lab1-StudentExercise

Circle.java ×

```
1 package model;
2
3 /**
4  * @author Ş. Görkem Okur
5  */
6
7 public class Circle {
8
9     private int r;
10
11     public Circle(int r) {
12         this.r = r;
13     }
14
15     public int getR() { return r; }
16
17     public void setR(int r) {
18         this.r = r;
19     }
20
21     public double getArea() {
22         return 3.14 * (r*r);
23     }
24
25     @Override
26     public String toString() {
27         return "Circle's diameter is: " + 2*r + System.LineSeparator() +
28             "Area: " + getArea();
29     }
30
31
32
33 }
34
```

Exercise

Please create a class named `Students`, that includes four instance variable - a first name (type `String`), a last name (type `String`), a major (type `String`), a Student ID (type `int`). Provide a constructor that initialize four instance variables. Provide a set and get method for each instance variable. Write a test app named `Main` that demonstrates class `Student`'s capabilities. Please, create `toString` method to print `Student` objects.

- ❑ Please, create in `Main` class a `Students` array that has **five** students. by taking inputs by user **instantiate** created array. (Hint: For-loop - inside for-loop, inputs are taken).
- ❑ **Search Student by name:** take a name as an input from User and print student if exist. If student not exist, then give a **plausible** output. (Hint: Searched student not found + name)