

Fundamentals of Programming

Laboratory 2

NetBeans IDE

Programming Exercises



NetBeans IDE



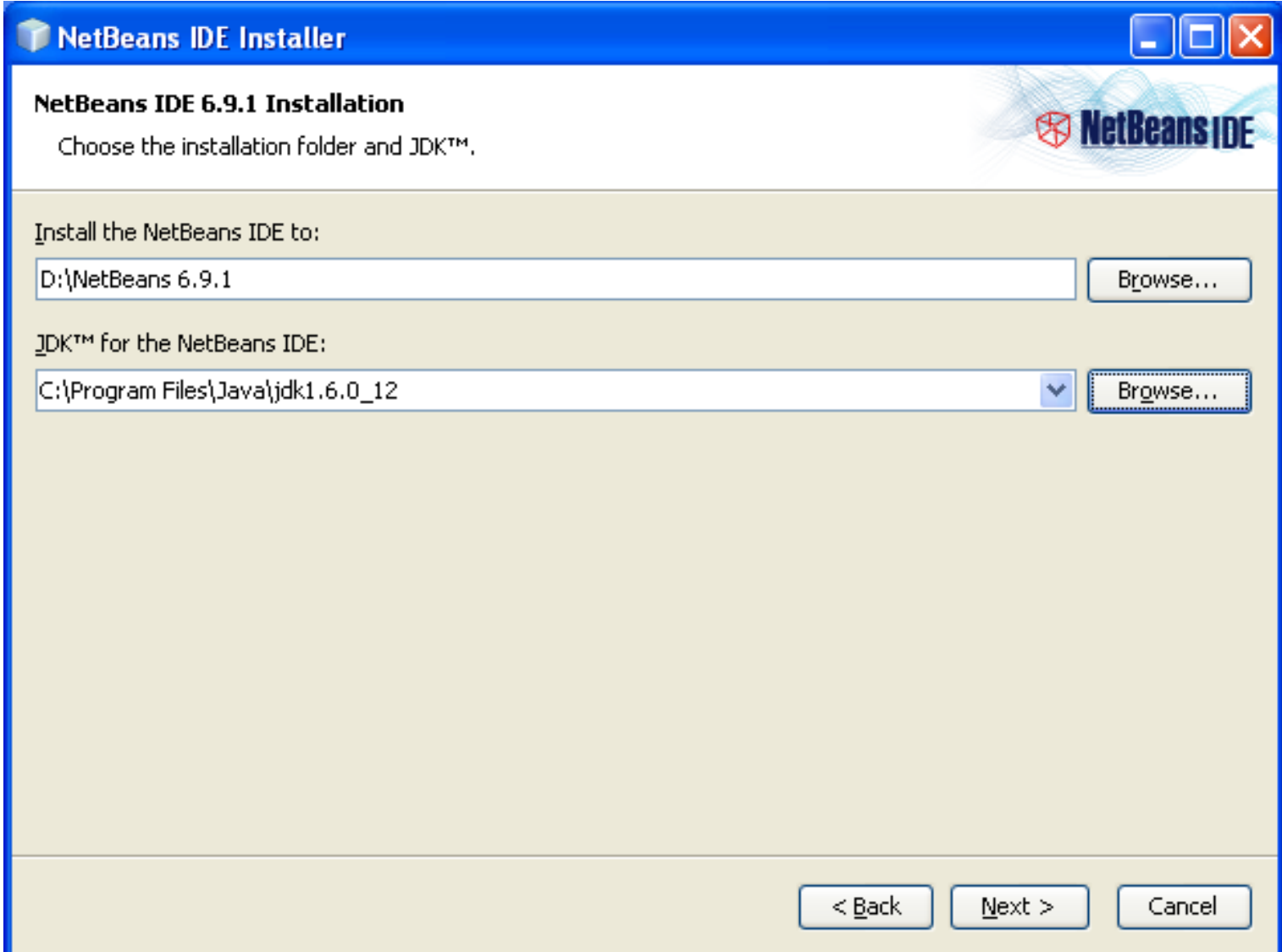
Integrated Development Environment (IDE)

- Compiler, interpreter, debugger
- Code editor with hints, wizards, macros, references and real-time verification
- User interface management
- Data access management
- Support for multiple languages: Java, C/C++, Ruby, PHP, Python
- Open source

Download and install

- <http://netbeans.org/downloads/index.html>
- Download the Java SE (standard edition) version
- An instalation file (e.g. netbeans-6.9.1-ml-javase-windows.exe) also located in **Z:\NetBeans**

Install to D: drive



The image shows a screenshot of the NetBeans IDE 6.9.1 Installer window. The window has a blue title bar with the text "NetBeans IDE Installer" and standard Windows window controls (minimize, maximize, close). Below the title bar, the main window has a white header area with the text "NetBeans IDE 6.9.1 Installation" and "Choose the installation folder and JDK™." To the right of this text is the NetBeans IDE logo. The main content area has a light beige background. It contains two sections: "Install the NetBeans IDE to:" with a text box containing "D:\NetBeans 6.9.1" and a "Browse..." button; and "JDK™ for the NetBeans IDE:" with a text box containing "C:\Program Files\Java\jdk1.6.0_12" and a "Browse..." button. At the bottom of the window are three buttons: "< Back", "Next >", and "Cancel".

NetBeans IDE Installer

NetBeans IDE 6.9.1 Installation
Choose the installation folder and JDK™.

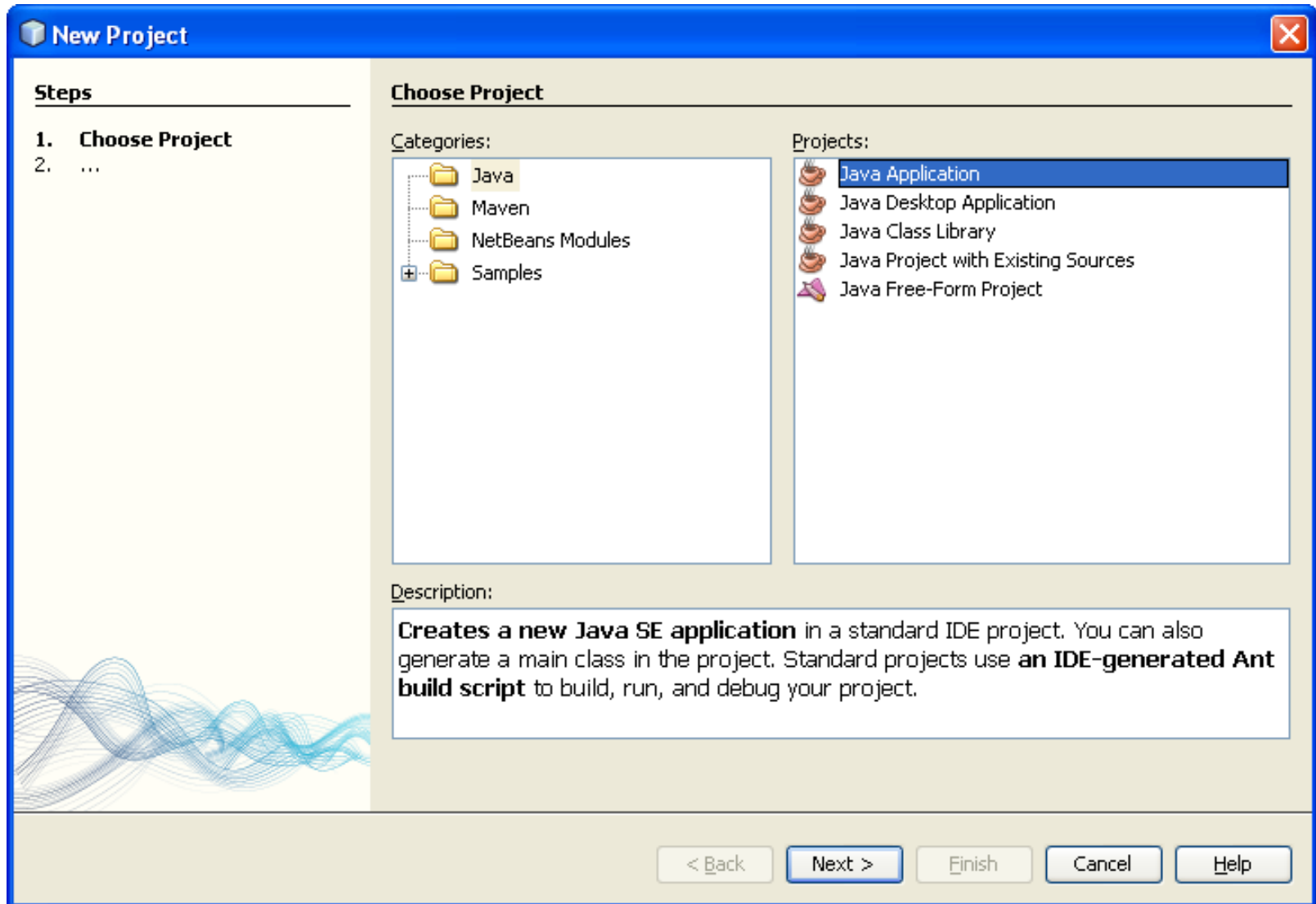
Install the NetBeans IDE to:

D:\NetBeans 6.9.1

JDK™ for the NetBeans IDE:

C:\Program Files\Java\jdk1.6.0_12

Create a new project (1)



Create a new project (2)

New Java Application

Steps

1. Choose Project
2. **Name and Location**

Name and Location

Project Name:

Project Location:

Project Folder:

☐ Use Dedicated Folder for Storing Libraries

Libraries Folder:

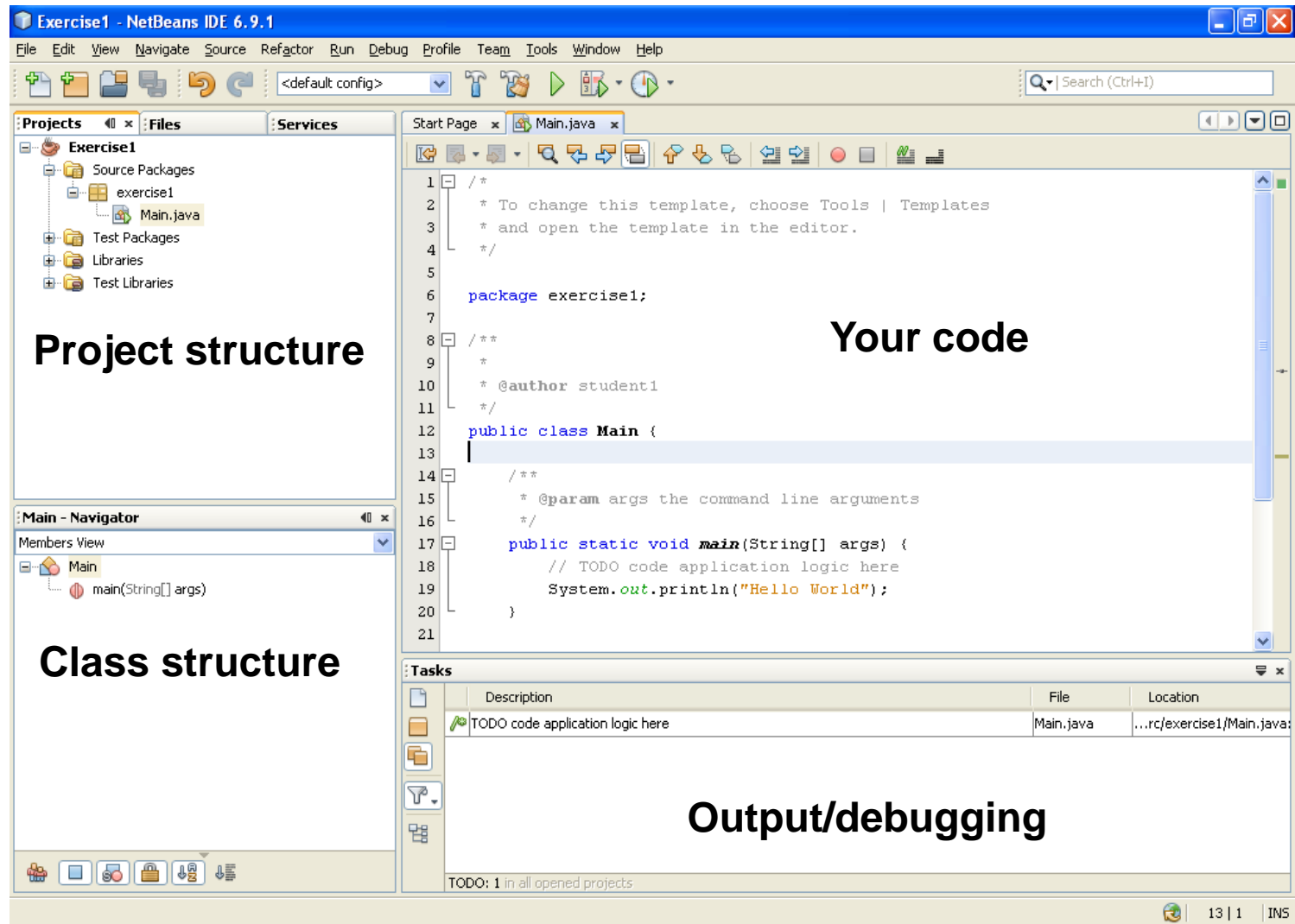
Different users and projects can share the same compilation libraries (see Help for details).

☒ Create Main Class

☒ Set as Main Project

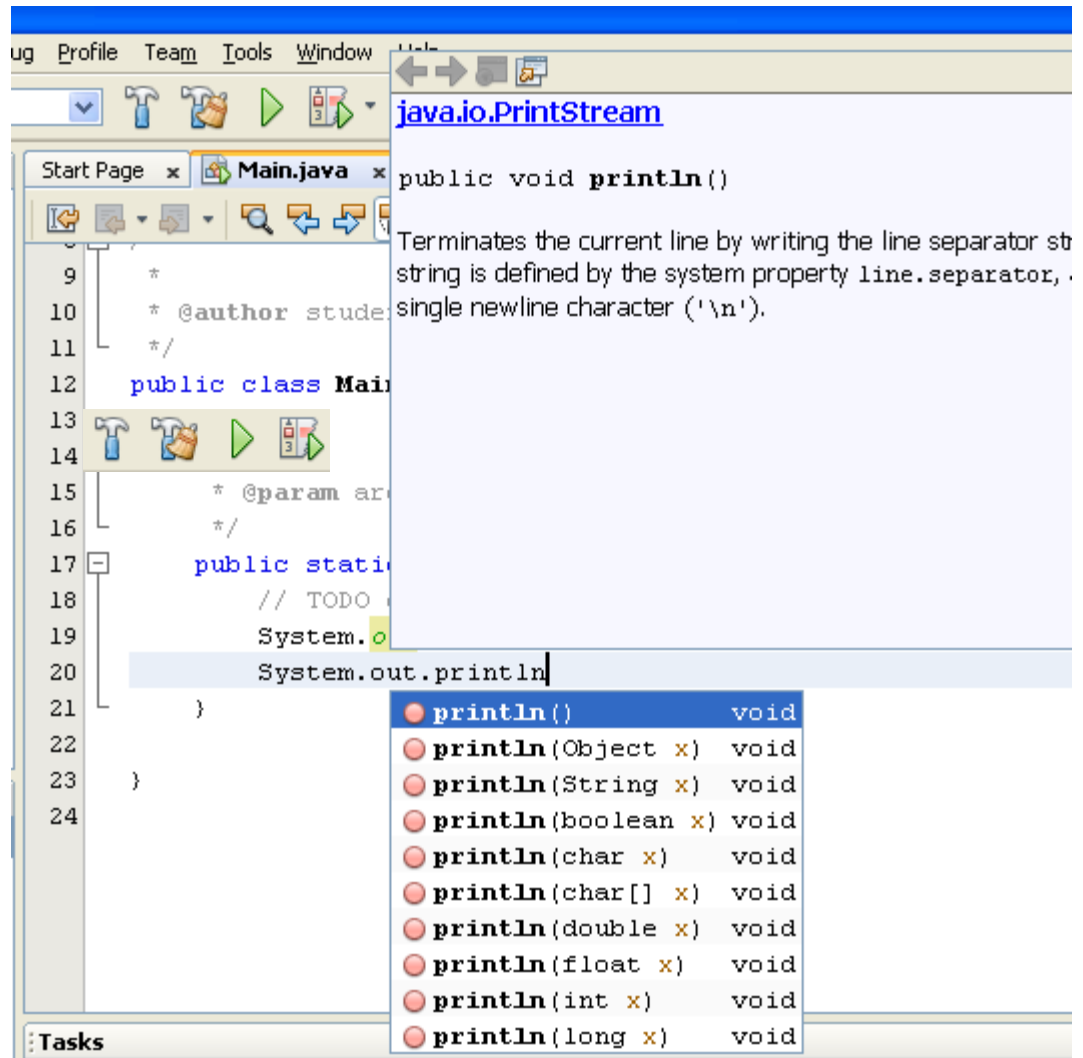
Your main sourcefile should be located in:
D:\Java\Exercise1\src\exercise1

NetBeans layout



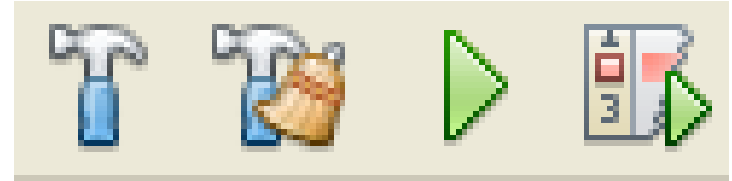
NetBeans auto-complete

As you type in commands, NetBeans will list their short descriptions and possible parameters.



Compiling a program

- ⑩ Building (compiling)
 - ⑩ Running (interpreting)
 - ⑩ Debugging (interpreting with pausing at breakpoints)
-
- ⑩ Errors (if any) will be listed in the output window and underlined in the code



EXERCISE 1

Write a program named `Exercise1` that declares three integer variables: **a**, **b**, **sum**.

In the next statements assign the value 2 to **a**, the value 2 to **b**, then add **a** to **b** and store the result to **sum**. Output **sum** to the user.



EXERCISE 2

Expand the program below to define variables for all primitive data types and print a sample value (**byte**, **short**, **int**, **long**, **char**, **float**, **double**, and **boolean**):

```
class Exercise2
{
    public static void main(String[] args)
    {
        boolean t = true;
        int i = 1;
        System.out.println("boolean " + t);
        System.out.println("integer " + i);
        //add more output lines here
    }
}
```



EXERCISE 3

The maximum value of an integer is 2147483647. Write a program that stores this value to a variable, then increments it by 1. Output the new value. Can you explain what happened?

Try incrementing the original value by 2 or multiplying it by 2.

Repeat same steps for negative numbers.



Bonus mini-lecture: Binary system



„There are 10 types of people in the world those who understand binary and those who don't”

10^3	10^2	10^1	10^0
1000	100	10	1

2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
128	64	32	16	8	4	2	1

EXERCISE 4

Modify the program from Exercise 1 ($a+b=\text{sum}$) to obtain the values from user input. To be able to read keyboard input:

```
//write this right after the package definition
```

```
import java.util.Scanner ;
```

```
//write this just once at start of main method
```

```
Scanner input = new Scanner (System.in) ;
```

```
//this is how you get data from the user
```

```
System.out.println("Please input a: ") ;
```

```
int a = input.nextInt() ;
```

```
System.out.println("Please input b: ") ;
```

```
int b = input.nextInt() ;
```



HOMEWORK

Write a Java program called **Circle** that asks a user for a **radius**, then outputs a circle's **circumference** and **area**. Create a variable **pi**, of type **double**, to store a precise value to be used in calculations.

Email a screenshot of the executed program (YourName.jpg).

JAVA - Group XX – Homework 2



HOMEWORK
EXERCISE