

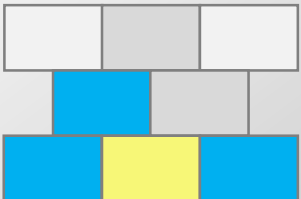
PACKAGES

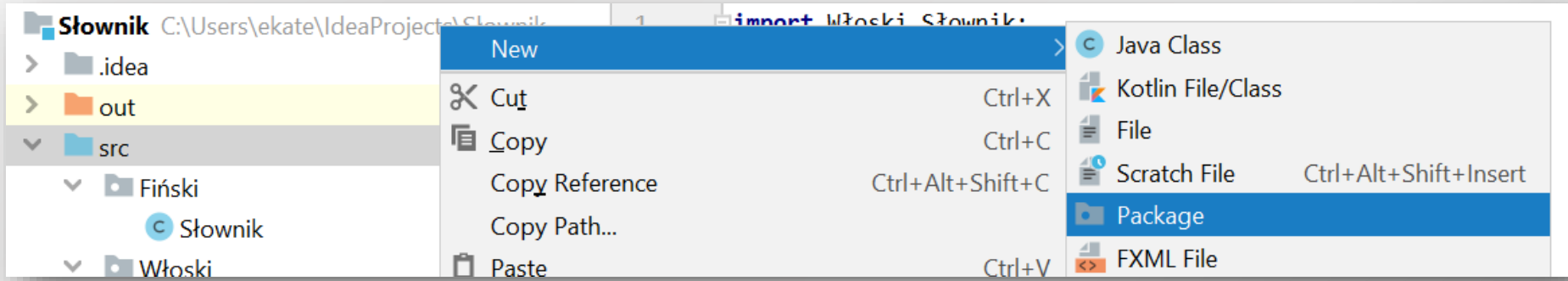
HOW TO CREATE A PACKAGE?

HOW TO USE CLASSES FROM A PACKAGE?

CLASSES WITH THE SAME NAME,
BUT FROM DIFFERENT PACKAGES

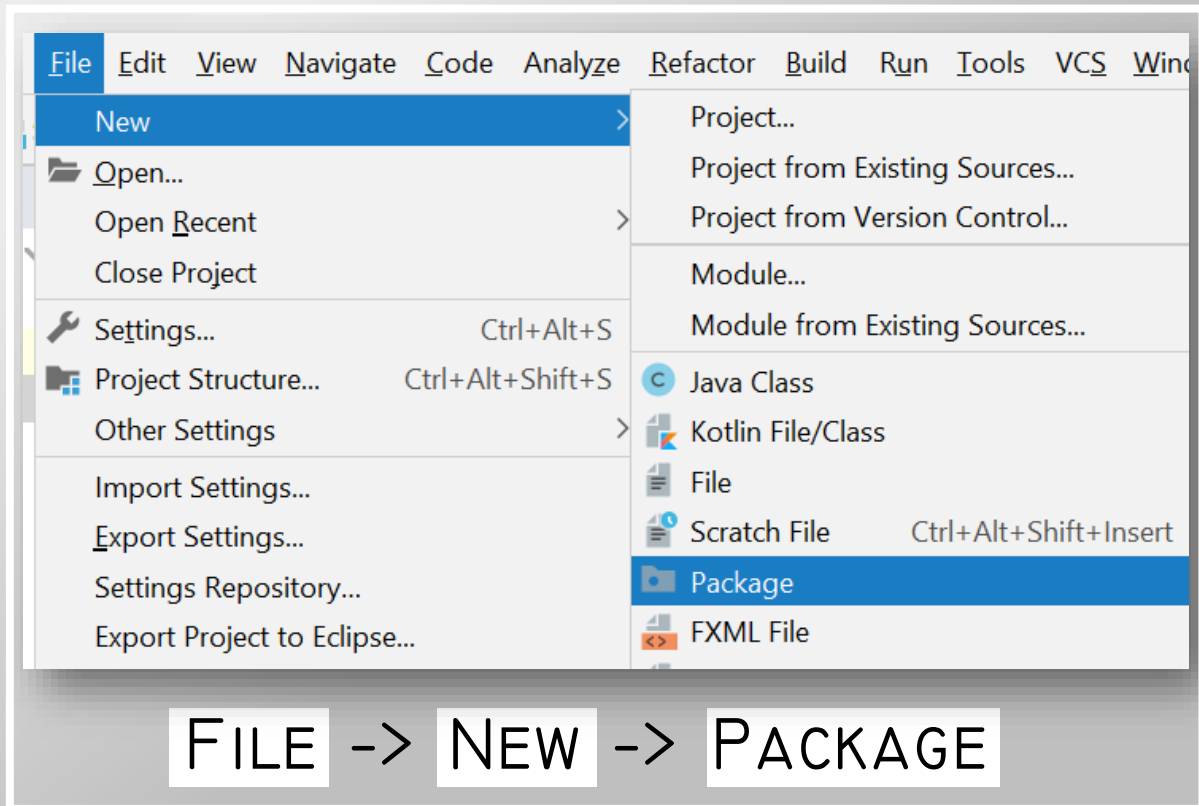
ACCESS SPECIFIERS





RIGHT-CLICK ON THE <SRC> FOLDER -> NEW -> PACKAGE

OR



FILE -> NEW -> PACKAGE

! Take a look at this video: *SłownikApp1.mp4*

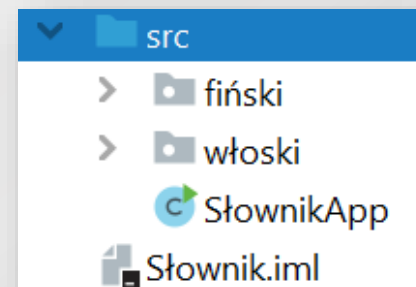
□ IN THE <src> FOLDER CREATE A PACKAGE CALLED <włoski>.

□ IN THIS PACKAGE CREATE A CLASS CALLED <Słownik> THAT HAS TWO FIELDS OF THE <String[]> CLASS <słowaWł> AND <słowaPl>. THE FIRST ARRAY CONTAINS {"uno", "due", "tre"}, THE SECOND - {"jeden", "dwa", "trzy"}.

□ ADD TWO METHODS sprawdźWł() AND sprawdźPl():

- sprawdźWł() CHECKS IF A USER CORRECTLY TRANSLATED A WORD FROM <słowaPl> TO ITALIAN.
- sprawdźPl() CHECKS IF A USER CORRECTLY TRANSLATED A WORD FROM <słowaWł> TO POLISH.

□ IN THE `<src>` FOLDER (NOT IN THE `<włoski>` PACKAGE) CREATE A CLASS CALLED `<SłownikApp>` THAT CONTAINS THE `main()` METHOD.



□ `IMPORT PACKAGE <włoski>` TO `<SłownikApp>`.

`import włoski.Słownik;`

□ IN THE MAIN PROGRAM ASK A USER TO TRANSLATE FROM POLISH TO ITALIAN WORDS `"jeden"`, `"dwa"` | `"trzy"` ONE BY ONE. CHECK IF THE TRANSLATION IS CORRECT USING THE `sprawdźWł()` METHOD.

□ THEN, ASK A USER TO TRANSLATE FROM ITALIAN TO POLISH WORDS `"uno"`, `"due"` | `"tre"`. CHECK IF THE TRANSLATION IS CORRECT USING `sprawdźPl()`.

! Take a look at this video: *SłownikApp2.mp4*

8-10

- CREATE A PACKAGE <fiński> IN THE <scr> FOLDER
- IN THIS PACKAGE CREATE A CLASS <Słownik> THAT HAS TWO STRING ARRAYS <słowaFi> AND <słowaPl>. THE FIRST ONE CONTAINS {"yksi", "kaksi", "kolme"}, THE SECOND - {"jeden", "dwa", "trzy"}.
- ADD TWO METHODS sprawdzFi() AND sprawdzPl() :
 - sprawdzFi() CHECKS IF A USER CORRECTLY TRANSLATED A WORD FROM <słowaPl> TO FINNISH.
 - sprawdzPl() CHECKS IF A USER CORRECTLY TRANSLATED A WORD FROM <słowaFi> TO POLISH.

- IMPORT PACKAGE <fiński> TO <SłownikApp>.
- IN THE MAIN PROGRAM ASK A USER TO CHOOSE ITALIAN OR FINNISH. THEN, ASK THE USER TO TRANSLATE WORDS "jeden", "dwa" | "trzy" TO ITALIAN / FINNISH. CHECK IF THE TRANSLATION IS CORRECT USING THE sprawdzWł() / sprawdzFi() METHOD.

What is wrong?

```
import Włoski.Słownik;  
import Fiński.Słownik;  
import java.util.Scanner;
```

'Włoski.Słownik' is already defined in a single-type import

What is wrong?

```
import Włoski.Słownik;  
import Fiński.Słownik;  
import java.util.Scanner;
```

'Włoski.Słownik' is already defined in a single-type import

In the main program we created an object of class **<Słownik>** from the **<włoski>** package. Now, we try to create an object of class **<Słownik>** from the **<fiński>** package.

The compiler complains because it is confused. The compiler does not know whether we want to create an object of the **<Słownik>** class from the **<włoski>** package OR an object of the **<Słownik>** class from the **<fiński>** package. Who wouldn't complain in such situation 😊

```
import Włoski.Słownik;  
//import Fiński.Słownik;  
import java.util.Scanner;  
  
public class SłownikApp {  
    public static void main(String[] args) {  
        Słownik słownikWł = new Słownik();  
        Fiński.Słownik słownikFi = new Fiński.Słownik();
```

- an object of class **<Słownik>** from the **<włoski>** package
- an object of class **<Słownik>** from the **<fiński>** package.

class/constructor/variable/method is accessible ...

private

... within the
class

default

... within the
class

... within the
package

```
package fiński;
```

```
class Słownik {
```



~~default~~

```
class Słownik {
```

Modifier 'default' not allowed here

protected

... within the
class

... within the
package

... within the
package &
outside through
its *child* class

public

... within the
class

... within the
package

... within the
package &
outside through
its *child* class

... within &
outside the
class, within &
outside the
package

☐ CHANGE THE ACCESS MODIFIER OF THE <Słownik> CLASS (IN THE <fiński>/<włoski> PACKAGE) FROM PUBLIC TO DEFAULT.

```
package fiński;
```

```
public class Słownik {
```

```
package fiński;
```

```
class Słownik {
```

☐ WHAT ERROR DID YOU GET? WHY?

YOUR ANSWER: _____

☐ HOW TO ACCESS PRIVATE VARIABLES OF A PUBLIC CLASS OUTSIDE OF THIS CLASS?

YOUR ANSWER: _____

