

1 Constructor

1.1 Constructor declaration

```
public class Klasa{  
    public Klasa(){  
    }  
    public Klasa(int p1, int p2){  
    }  
}
```

1.2 Invoking the constructor

Invoking a constructor creates the new instance of class (object)

```
Klasa k = new Klasa();  
Klasa k1 = new Klasa(1,2);
```

1.3 this

this keyword points to the actual object

```
public class Klasa{  
    int i;  
    public Klasa(){  
        this.i = 6;  
    }  
}
```

2 Initialization

2.1 Object initialization

A code that is executed during object initialization

```
public class Klasa{
```

```
{
  // Initialization
}
}
```

2.2 Static initialization

A code that is executed during class initialization

```
public class Klasa{
  static {
    //Static initialization
  }
}
```

3 Object deleting

3.1 Garbage Collector

Object lifetime is managed by Garbage Collector. There is no destructors and the object is deleted only if there is no memory for newly created objects. During cleanup objects that do not have references are destroyed.

3.2 Forcing Garbage Collector to execute

```
System.gc();
```

There is no need to manually execute Garbage Collector during normal program execution

3.3 Object finalization

finalize method is used when object allocates memory in some unusual way. Garbage collector automaticity execute this method before object destroying.

```
protected void finalize() throws Throwable{
}
}
```

4 Arrays

- `int[] t = new int[10];` //array with 10 int elements

- `int[][] t = new int[4][4];` //two-dimensional array
- `Klasa[] t = new Klasa[10];` //Object array, is contains empty references
- `int[] t = {1, 2, 3};` //array initialization

5 Zadania do wykonania

1. Use constructors with and without parameters
2. When there is default constructor available?
3. Use initialization and static initialization
4. Determine the order of constructors and initialization block execution
5. Use finalization
6. Try to generate the situation in which Garbage Collector will be automatically executed
7. What will happen when Garbage Collector is manually executed?
8. Make familiar with Object class documentation (`clone()`, `equals()`, `finalize()`, `toString()`)
9. Use basic methods from Object class
10. Create array of primitive data type and use it
11. Create array of objects and use it
12. Copy the content of an array
13. Determine the difference between shallow and deep array equality
14. Find element in array of objects
15. Sort the array of objects
16. Make familiar with Array class methods