W1 COMPUTER PROGRAMMINING 2019 SPRING

Grading:

Class exercises : %30

Homework exercises %20

Final exam (written in class exam) open book %50

Books: http://www.turhancoban.com/kitap/COMPUTER%20PROGRAMMING.pdf

Java How to Program, 11/e (Early Objects) Deitel 2018 ISBN 0-13-474335-0

CLASS EXERCISES

Class exercises will be completed and graded in class

Eksersiz programları yazılacak ve çalıştırılacak, sınıf hocasına gösterilecektir.

EX 1

```
class program1
{   public static void main(String arg[])
                { System.out.println("Welcome to Java");}
}
```

```
import javax.swing.JOptionPane;
class program1A
{   public static void main(String arg[])
    { JOptionPane.showMessageDialog(null,"Welcome to Java");}
}
```

```
import javax.swing.JOptionPane;
class program1B
{   public static void print(String s)
    { JOptionPane.showMessageDialog(null,s);}

     public static void main(String arg[])
    {print("java programına hoş geldiniz"); }
}
```

EX2

```
class program2
{public static void main(String arg[])
 {   double x=1.23456;
     double y=2.5;
    System.out.println(x*y);}
}
```

```
class program2A
{public static void main(String arg[])
 {   int x=25;
     int y=5;
     System.out.println("z = "+x*y);}
}
```

```
import javax.swing.JOptionPane;

class program2B
{public static void main(String arg[])
 {   int x=25;
     int y=5;
     String s="z = "+x*y;
     System.out.println(s);}
}
```

```
import javax.swing.JOptionPane;

class program2C
{  public static void print(String s)
   { System.out.println(s);}

 public static void main(String arg[])
 {   int x=5;
```

```
    int y=2;
    String s="x/y = "+(x/y)+"\n"+"x%y = "+(x%y);
    print(s);
 }
}
```

```
import javax.swing.JOptionPane;

class program2D
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}

 public static void main(String arg[])
 {   double x=Double.parseDouble(JOptionPane.showInputDialog("x="));
     double y=Double.parseDouble(JOptionPane.showInputDialog("y="));;
     String s="x/y = "+(x/y);
     print(s);}
}
```

```
import javax.swing.JOptionPane;

class program2E
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}
  public static double input(String s)
  {double x=Double.parseDouble(JOptionPane.showInputDialog(s));
  return x;
  }
 public static void main(String arg[])
 {   double x=input("x=");
     double y=input("y=");;
     String s="x/y = "+(x/y);
                print(s);
 }
}
```

```
import javax.swing.JOptionPane;

class program2F
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}
  public static int input(String s)
  {int x=Integer.parseInt(JOptionPane.showInputDialog(s));
   return x;
  }
 public static void main(String arg[])
 {   int x=input("x=");
     int y=input("y=");
     String s="x/y = "+(x/y)+"\n"+"x%y = "+(x%y);
                print(s);
 }
}
```

```
import javax.swing.JOptionPane;

class program2G
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}
  public static double input(String s)
  {double x=Double.parseDouble(JOptionPane.showInputDialog(s));
  return x;
  }
 public static void main(String arg[])
 {   double x=input("x=");
     double y=x*x-2.3*x+5.2;
     String s="x="+x+"y = "+y;
     print(s);
 }
}
```

```
import javax.swing.JOptionPane;
```

```
class program2H
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}
  public static double input(String s)
  {double x=Double.parseDouble(JOptionPane.showInputDialog(s));
  return x;
  }
  public static double f(double x)
  {return x*x-2.3*x+5.2;}
 public static void main(String arg[])
 {   double x=input("x=");
     double y=f(x);
     String s="x="+x+"\ny = "+y;
                print(s);
 }
}
```

```
import java.util.Scanner;
import javax.swing.*;

class program2I
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}

  public static double input(String s)
  {     // create Scanner to obtain input from command window
        Scanner input = new Scanner( System.in );
        System.out.print(s);
        double x=Double.parseDouble(input.next());
        return x;
  }
  public static double f(double x)
  {return x*x-2.3*x+5.2;}
 public static void main(String arg[])
 {   double x=input("x = ");
     double y=f(x);
     String s="x="+x+"\ny = "+y;
     System.out.println(s);
                print(s);
 }
}
```

EX3

```
 import javax.swing.JOptionPane;

class program3
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}
  public static String input(String s)
  {String x=JOptionPane.showInputDialog(s);
  return x;
  }

 public static void main(String arg[])
 {   String name=input("enter your name =");

     String s=name+" is a nice name";
     print(s);
 }
}
```

```
import javax.swing.JOptionPane;

class program3a
{ public static void print(String s)
  {JOptionPane.showMessageDialog(null,s);}
  public static String input(String s)
  {String x=JOptionPane.showInputDialog(s);
  return x;
  }

 public static void main(String arg[])
 {   String name=input("enter your name =");
```

```
    String last_name=input("enter your last name =");
    String id=input("enter your student id# =");
     String s="Your identification : \nname : "+name+" "+last_name+"\n Student id# : "+id;
     print(s);
 }
}
```

```
import java.util.Scanner;

class program3b
{ public static void print(String s)
  {System.out.println(s);}
  public static String input(String s)
  {     // create Scanner to obtain input from command window
        Scanner input = new Scanner( System.in );
        System.out.print(s);
        String x=input.next();
        return x;
  }


 public static void main(String arg[])
 {   String name=input("enter your name =");
    String last_name=input("enter your last name =");
    String id=input("enter your student id# =");
     String s="Your identification : \nname : "+name+" "+last_name+"\n Student id# : "+id;
     print(s);
 }
}
```

HOMEWORK EXERCISES

Homework exercises will be done at home and will bring to next Thursday class printed no late exercises will be excepted. Each code should include student name id#, code plus results should be given. Homeworks will be accepted in written format plus a computer copy in pdf format will be sent to computer_programming@turhancoban.com adress your file name should be "group"+"week#"+studentname+studentid#.pdf

A_W1_turhan_coban_0101333.pdf

B_W3_ali_veli_02335646.pdf

W1HW1

y=f(x)=3.1x^2-1.23x+13.8 function is given. Write a program to calculate values for x=1.25,2.3 and 5.6 input and output should be graphic form-GUI (JOptionPane.showInputDialog, JOptionPane.showMessageDialog)

```
import javax.swing.*;
public class W1HW1
{ public static double y(double x)
  {return 3.1*x*x-1.23*x+13.8;}
  public static void main(String arg[])
  { double x1=Double.parseDouble(JOptionPane.showInputDialog("x1="));
    String s="x="+x1+" y="+y(x1)+"\n";
    double x2=Double.parseDouble(JOptionPane.showInputDialog("x2="));
    s+="x="+x2+" y="+y(x2)+"\n";
    double x3=Double.parseDouble(JOptionPane.showInputDialog("x2="));
    s+="x="+x3+" y="+y(x3)+"\n";
    JOptionPane.showMessageDialog(null,s);
  }
}
```

W1HW2

y=f(x)=3.1x^2-1.23x+13.8 function is given. Write a program to calculate values for x=1.25,2.3 and 5.6 input should be from console screen form (Scanner, input.next, System.out.println)

```
import java.util.Scanner;

public class W1HW2
```

```
{ public static double y(double x)
  {return 3.1*x*x-1.23*x+13.8;}
  public static void main(String arg[])
  { Scanner input = new Scanner( System.in );
    System.out.print("x1=");
    double x1=Double.parseDouble(input.next());

    String s="x="+x1+" y="+y(x1)+"\n";
    System.out.print("x2=");
    double x2=Double.parseDouble(input.next());
    s+="x="+x2+" y="+y(x2)+"\n";
    System.out.print("x3=");
    double x3=Double.parseDouble(input.next());
    s+="x="+x3+" y="+y(x3)+"\n";
    System.out.println(s);
  }

}
```

W1HW3

Enter your name from the screen as input by using graphic form and write "welcome to java"+your name as output

Example: Welcome to java Turhan

```
import javax.swing.*;
public class W1HW3
{ public static void main(String arg[])
  {String s=JOptionPane.showInputDialog("what is your name = ");
   s="Welcome to java "+s;
   JOptionPane.showMessageDialog(null,s);
  }

}
```

W1HW4

Enter your name from the screen as input by using console screen form (Scanner, input.next) and write "welcome to java"+your name as output

Example: Welcome to java Turhan

```
import java.util.Scanner;
public class W1HW4
{ public static void main(String arg[])
  {  Scanner input = new Scanner( System.in );
  System.out.print("what is your name = ");
  String s=input.next();
  s="Welcome to java "+s;
  System.out.println(s);
  }
}
```

Summary of Java Statements

Console Input	**GUI Input Dialog**
Scanner input = **new** Scanner(System.in); **int** intValue = input.nextInt(); **long** longValue = input.nextLong(); **double** doubleValue = input.nextDouble(); **float** floatValue = input.nextFloat(); String string = input.next(); **Console Output** System.out.println(anyValue);	String string = JOptionPane.showInputDialog("Enter input"); **int** intValue = Integer.parseInt(string); **double** doubleValue = Double.parseDouble(string); **Message Dialog** JOptionPane.showMessageDialog(**null**, "Enter input");

Primitive Data Types	**Arithmetic Operators**	**Assignment Operators**
byte 8 bits (from -128 to 127) **short** 16 bits (From -32768 to 32767) **int** 32 bits (From -2157483648 to 2147483647) **long** 64 bits (From -9223372036854775808 to 9223372036854775808) **float** 32 bits (From -3.40292347e+38 to 3.40292347e+38) **double** 64 bits (From 1.7976931348623157e+308 to	+ addition - subtraction ***** multiplication / division **%** remainder **++var** preincrement	= assignment **+=** addition assignment **-=** subtraction assignment ***=** multiplication assignment

1.7976931348623157e+308) **char** 16 bits (Unicode) **boolean** 1 bit (true/false)	**--var** predecrement **var++** postincrement **var--** postdecrement	/= division assignment **%=** remainder assignment

Relational Operators < less than <= less than or equal to > greater than >= greater than or equal to == equal to **!=** not equal	**Logical Operators** **&&** short circuit AND **||** short circuit OR **!** NOT ^ exclusive OR	**if** (condition1) {statements;} **else if** (condition2) {statements;} **else if** (condition3) {statements;} …… **else** {statements;}

switch Statements
switch (intExpression) {
case value1:
statements;
break;
...
case valuen:
statements;
break;
default:
statements;
}
	While and do-while loop Statements
	
	while (condition) {
	statements;
	}
	
	do {
	statements;
	} **while** (condition);
		For loop statements
		
		for (init; condition;adjustment)
		{
		statements;
		}

Frequently Used Static Constants/Methods Math.PI Math.exp() Math.random() Math.pow(a, b) System.currentTimeMillis() System.out.println(anyValue) JOptionPane.showMessageDialog(**null**, message) JOptionPane.showInputDialog(prompt-message) Integer.parseInt(string) Double.parseDouble(string) Arrays.sort(type[] list) Arrays.binarySearch(type[] list, type key)	**Array/Length/Initializer** **int**[] list = **new int**[10]; list.length; **int**[] list = {1, 2, 3, 4}; **Multidimensional Array/Length/Initializer** **int**[][] list = new **int**[10][10]; list.length; list[0].length; **int**[][] list = {{1, 2}, {3, 4}};