

## Laboratory 2

### Ap1.

Create a new class: **Lab\_02\_1\_surname\_name**

Read three pairs of points  $(x_i, y_i)$  from the keyboard.

- Check if the three pairs of points  $(x_i, y_i)$  form a triangle.
- Check if it is a rectangular, isosceles or equilateral triangle.
- Calculate the area of the triangle if it is possible.

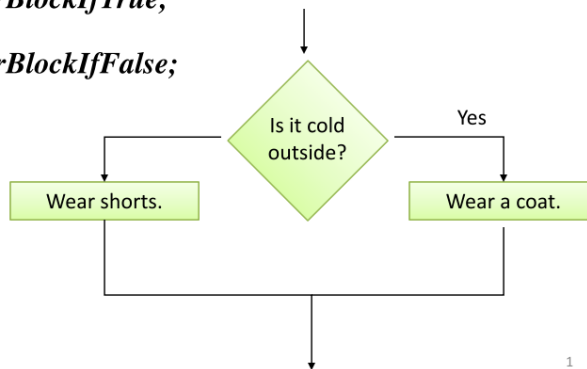
$$Area = \frac{\det \begin{bmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{bmatrix}}{2}$$

# Conditional instruction

## if-else Statements

The if-else statement adds the ability to conditionally execute code when the if condition is false.

```
if (boolean expression is true)  
    statementOrBlockIfTrue;  
else  
    statementOrBlockIfFalse;
```



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## if-else Statements

```
if (coldOutside)  
    wearCoat();  
else  
    wearShorts();
```

```
if (coldOutside) {  
    wearCoat();  
}  
else {  
    wearShorts();  
}
```

```
if (coldOutside)  
{  
    wearCoat();  
}  
else  
{  
    wearShorts();  
}
```

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## Boolean Expression

Is an mathematical expression or a variable whose result can be **true** or **false**

```
boolean b;
b = a>b;
b = false;
```

In logical expressions can be used:

- Numerical operators
- Relational operators
- Logical operators.

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Relational Operator	Meaning
>	is greater than
<	is less than
>=	is greater than or equal to
<=	is less than or equal to
==	is equal to
!=	is not equal to

Logical Operator	Meaning
!	Negation - reverses the truth of a boolean expression
&&	AND - Both expressions must be true for the overall expression to be true.
	OR - One or both expressions must be true for the overall expression to be true

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