Java Basics

@RishalHurbans

entelect

everything is possible

Language Basics

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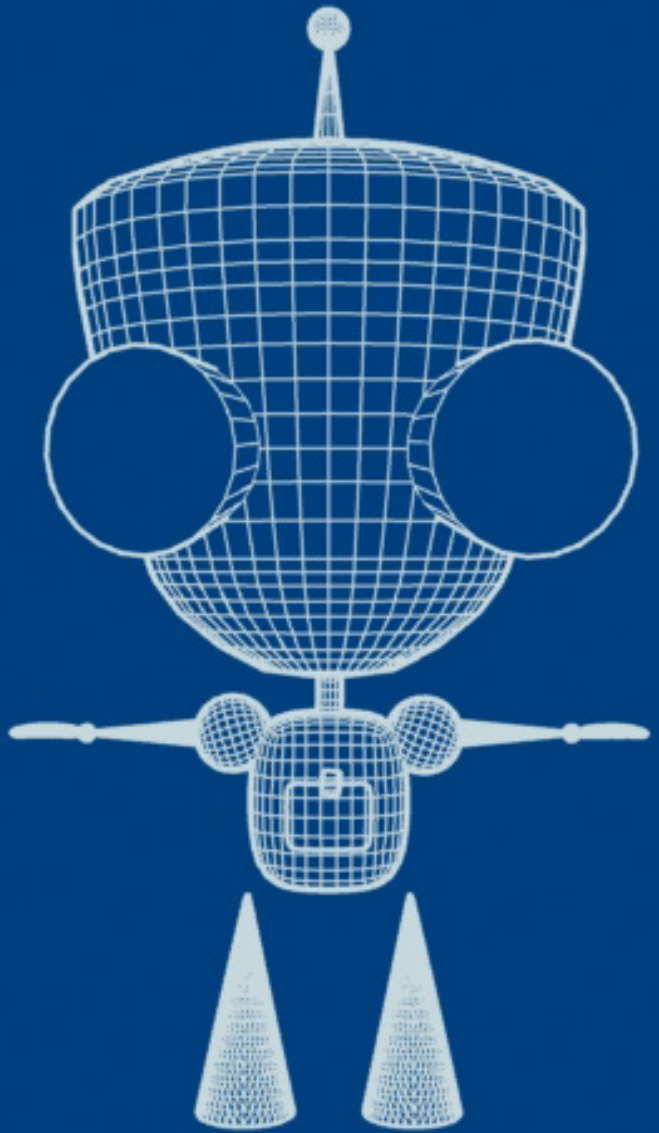

```
public class Robot {
}
```

short

0101 1101 0101 1101

-37 768

-2^{15}

32 767

$2^{15} - 1$

`int`

0101 1101 0101 1101 0101 1101 0101 1101

-2 147 483 648

-2^{31}

2 147 483 647

$2^{31} - 1$

`long`

0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101

-9 223 372 036 854 775 808

-2^{63}

9 223 372 036 854 775 807

$2^{63} - 1$

double

0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101 0101 1101

4.9E-324

1.7976931348623157E308

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boolean

0

false

true

All bits are spiritual successors of the first zero and the first one. The first nothing and the first everything.

-miloir

char

b

0

65 535

```
public class Robot {
    private Processor processor;
    private MoodOptimizer optimizer;
    private SplineReticulator splineReticulator;
    private Geostabilizer geostabilizer;

    // todo implement 3 laws of robotics IMPORTANT
}
```


communicate with
.illuminate()
.indicate(object)
.inspect(item)

```
public class Robot {
    private Processor processor;
    private MoodOptimizer optimizer;
    private SplineReticulator splineReticulator;
    private Geostabilizer geostabilizer;

    // todo implement 3 laws of robotics IMPORTANT

    public void process() { … }
    public boolean reticulateSplines() { … }
}
```

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inheritance

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Favour composition over inheritance.

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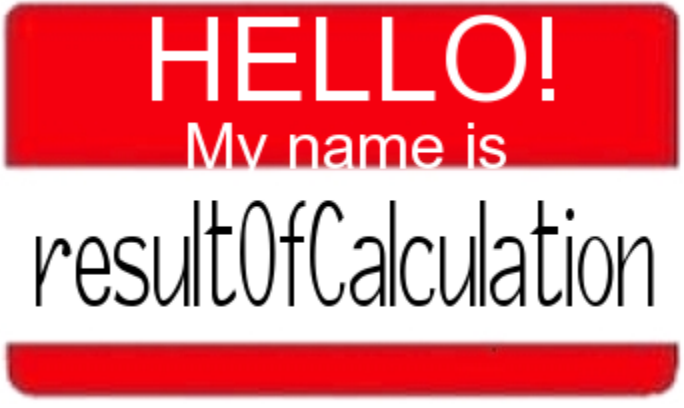
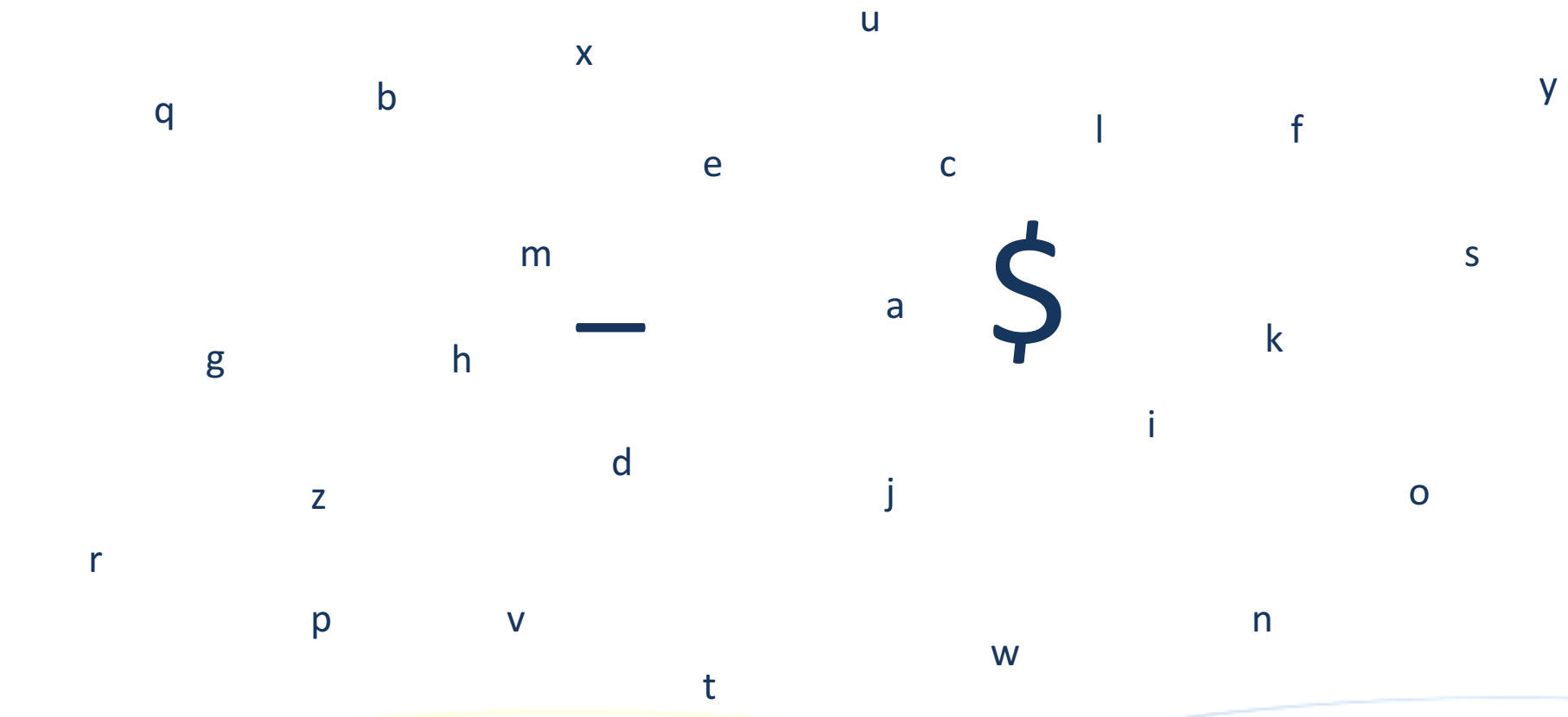
pass by reference

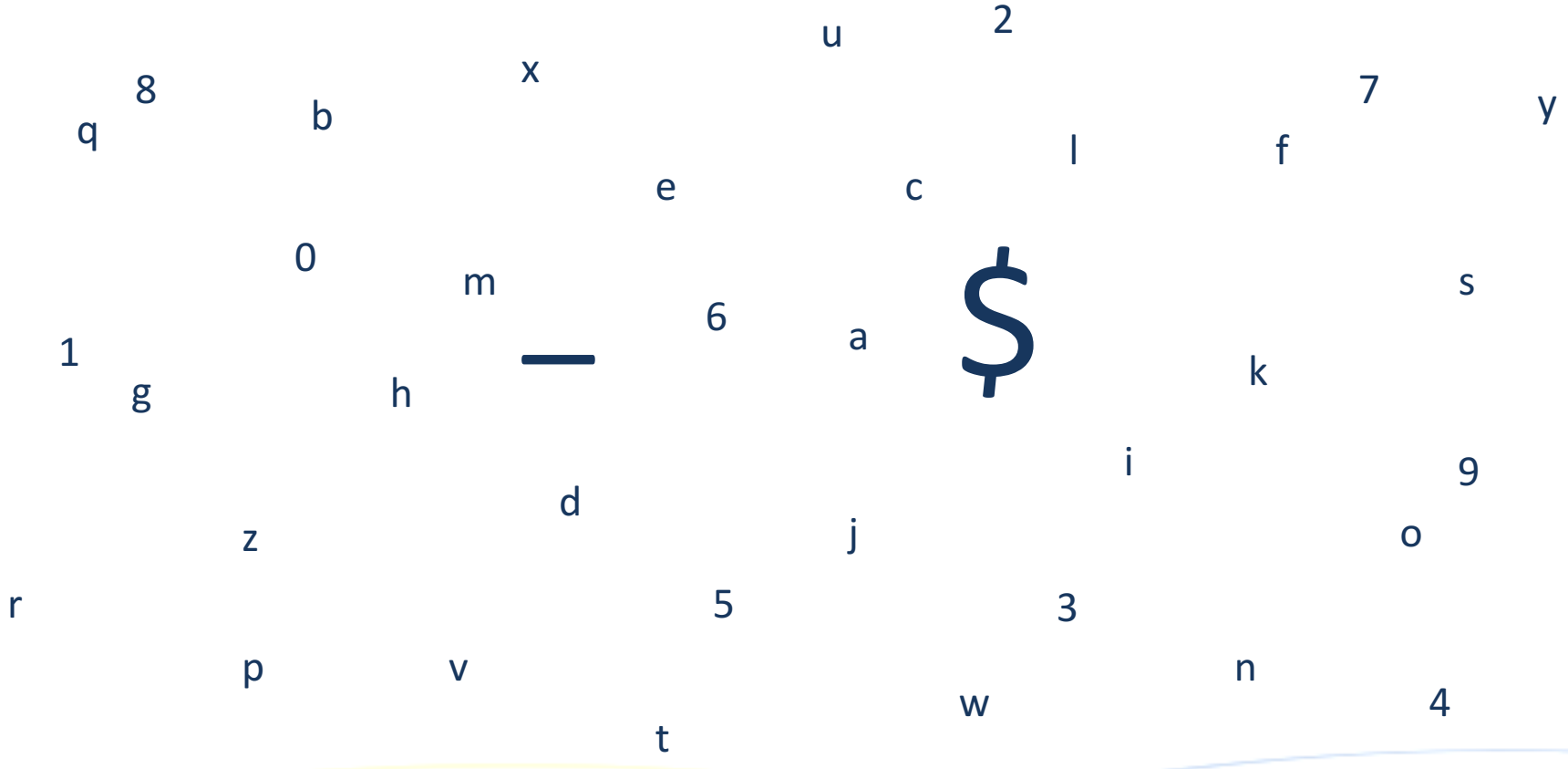

HELLO!
My name is
ر


HELLO!
My name is
resultOfCalculation

Legal Identifiers



Legal Identifiers



Java Keywords

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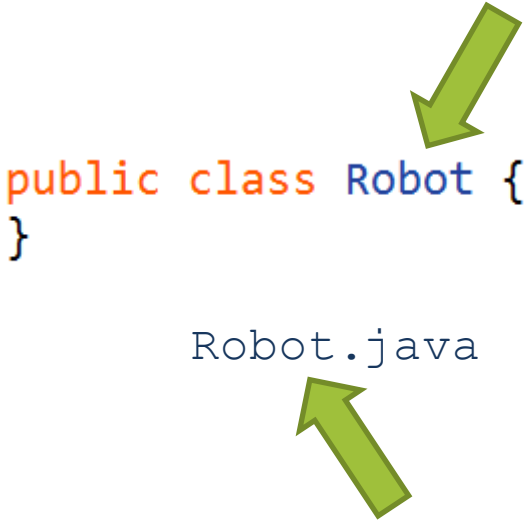
abstract	boolean	break	byte	case	catch
char	class	const	continue	default	do
double	else	extends	final	finally	float
for	goto	if	implements	import	instanceof
int	interface	long	native	new	package
private	protected	public	return	short	static
strictfp	super	switch	synchronized	this	throw
throws	transient	try	void	volatile	while
assert	enum				


public class Robot {
}
Robot.java

```
public class RDaneelOlivaw {
}
```

```
public class GIR {
}
```

```
public class Robot {
}
```

```
public class HAL9001 {
}
```

```
public class T1000 {
}
```

```
public class Brobot {
}
```

```
public class RobbieTheRobot {
}
```


FRAGILE
Size 1
3.11
1517
1517
4.8

entelect.co.za

za.co.entelect

za.co.entelect.robots


za.co.entelect.robots
evil
good

za.co.entelect.robots.evil

```
package za.co.entelect.robots.evil;

public class HAL9001 {
}
```

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naming

```
EvilRobotControllerFocusedOnSupremeDomination
```

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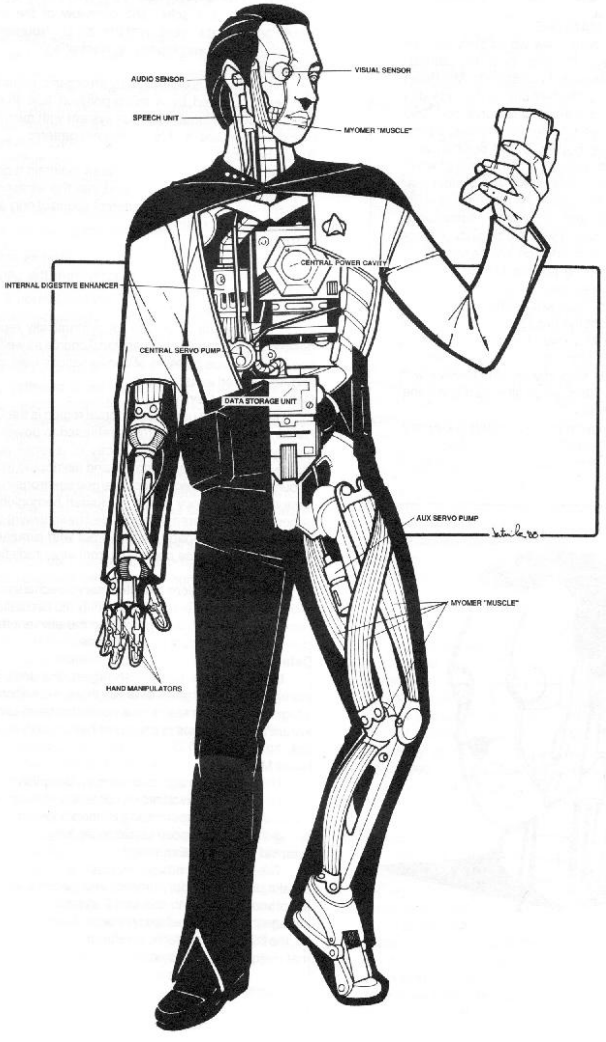
naming

za.co.entelect.robots.evil.controller

`SupremeDomination`



putting it all together

```
import java.util.List
```

Visibility	Public	Protected	*Default*	Private
From the same class	Yes	Yes	Yes	Yes
From any class in the same package	Yes	Yes	Yes	No
From a subclass in the same package	Yes	Yes	Yes	No
From a subclass outside the same package	Yes	Yes, *through inheritance*	No	No
From any non-subclass class outside the package	Yes	No	No	No

Flow Control

- **Branching**
  - Switch Statements

```
switch (x) {
    case (a) : …
        break;
    case (b) : …
        break;
    default: …
}
```

  - If-else

```
if (x) {
    …
} else {
    …
}
```

```
if (x) {
    …
} else {
    if (y)
        …
}
```

```
if (x) {
    …
} else if (y) {
    …
}
```

Loops and Iterators

- **For loop**

```
for(int i = 0; i < x; i++) {
    …
}
```

```
myloop:
for(int i = 0; i < x; i++) {
    …
}
```

- **While loop**

```
while (x) {
    …
}
```

- **Do loop**

```
do {
    …
} while(x)
```

Java Virtual Machine (JVM)