

*ITEC1620*  
*Object-Based Programming*

Lecture 7  
Programming in Java

## *Programming Basics*

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- Sequence, Branching, Looping
- Primitive datatypes
- Mathematical operations
  
- 1940's level computer
- 1940's level computation
  - Math and Engineering

## *Program 1*

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- Factorials

1	=	1
1 * 2	=	2
1 * 2 * 3	=	6
1 * 2 * 3 * 4	=	24
1 * 2 * 3 * 4 * 5	=	120

# *Programming*

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- A computer is a machine that processes data
  - What are the data?
  - What are the processes?

*Data*

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# *Processes*

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## *Program*

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```
public class Factorials
{
    public static void main (String[] args)
    {

    }
}
```

## *Program 2*

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- Fibonacci numbers

$1 + 1$	$=$	$2$
$1 + 2$	$=$	$3$
$2 + 3$	$=$	$5$
$3 + 5$	$=$	$8$
$5 + 8$	$=$	$13$



*Data*

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# *Processes*

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## *Program*

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```
public class FibonacciNumbers
{
    public static void main (String[] args)
    {

    }
}
```

## *Program 3*

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- Prime numbers

2	→	yes
3	→	yes
4	→	no
5	→	yes
6	→	no

*Data*

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# *Processes*

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## *Program*

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```
public class PrimeNumbers
{
    public static void main (String[] args)
    {

    }
}
```

## *Review*

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- A computer is a machine that processes data
  - Data
    - Every piece of information
    - Many interim pieces of data
  - Processes
    - Restricted to Sequence, Branch, Loop
    - Must learn to think in these structures



# *Readings and Assignments*

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