

CPS 161 – An Intro to Programming with Java

In this course, students are introduced to the Java programming language. Looping, conditional logic and string manipulation are some of the basic programming concepts covered. Object-oriented concepts are covered such as constructors, polymorphism, abstract classes, interfaces and exceptions. Graphical user interface (GUI) topics are minimally covered. CPS 261 will cover these topics in depth. Prior programming experience is recommended. Students who have no programming experience should consider taking CPS 120.

1: Java Fundamentals

Java Historical Roots- (25:34)

https://www.youtube.com/watch?v=uVQK_S3psl0&index=62&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu

Java Characteristics- (22:44)

<https://www.youtube.com/watch?v=io5nlcxRUVI&index=63&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Java Development Environment- (20:50)

<https://www.youtube.com/watch?v=JiNBSusqUDI&index=45&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Basic Hello world Comments- (18:08)

<https://www.youtube.com/watch?v=NovUsawOitQ>

Basic Simple Arithmetic- (25:20)

<https://www.youtube.com/watch?v=WskhK1-I9Go>

Basic Other Primitives- (14:32)

<https://www.youtube.com/watch?v=3UvUWxtyYGs>

Basic Variables- (20:00)

<https://www.youtube.com/watch?v=MvKSPgdglxE&feature=youtu.be>

JH1 Help- Jar/Make Change Help- 5:44)

<https://www.youtube.com/watch?v=twFS293AxJQ&index=70&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

2: Arithmetic, Strings

Arithmetic Precedence Mixed Arithmetic- (16:50)

<https://www.youtube.com/watch?v=bbCQbPJoOb8&index=58&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Arithmetic Primitive Sizes, Casting, Shortcuts (JPHB)- (31:23)

<https://www.youtube.com/watch?v=qZLHJ3htw9I&index=56&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Strings Scanners Classes Objects (JPHC)- (32:23)

<https://www.youtube.com/watch?v=pyZ29UiCLMw&index=57&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Scanning & formatting- (30:28)

<https://www.youtube.com/watch?v=7wx1W-64Ny8&feature=youtu.be>

Command Line Java Development Environment(12:15)

<https://www.youtube.com/watch?v=JiNBSusqUDI&index=45&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

3: Simple Logic Part 1

Simple If Statements- (20:44)

<https://www.youtube.com/watch?v=HbrvS6ZO5rg&index=55&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

If Statement Examples- (32:10)

<https://www.youtube.com/watch?v=6G1G3pgbqBw&index=54&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

While Loops- (31:11)

<https://www.youtube.com/watch?v=t6bnmglacsQ&index=53&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

While Loops Examples- (22:40)

<https://www.youtube.com/watch?v=DLuc0RmImNM&index=52&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

String Equals Comparison (JPHF)- (17:32)

<https://www.youtube.com/watch?v=Udt-lzIO7e0&index=51&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Switch Examples- (17:32)

<https://www.youtube.com/watch?v=w0jHWm9Ov6c&index=48&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

JH2 Help on Factorial- (16:50)

<https://www.youtube.com/watch?v=fWoDoSi8-PE&index=69&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

4: Simple Logic Part 2

For Loops- (24:06)

<https://www.youtube.com/watch?v=pO4zrKG6giw&index=49&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

For Loop Examples (JPHH)- (40:43)

<https://www.youtube.com/watch?v=5WhbrGWvsH8&index=50&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

More Boolean Concepts (JPHI)- (36:44)

<https://www.youtube.com/watch?v=6WaS1G0-IvM&index=47&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

String Methods (JPHJ)- (43:09)

<https://www.youtube.com/watch?v=VLAobU9rPXM&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=22>

Defining Classes 1 (JPHK)- (36:35)

<https://www.youtube.com/watch?v=24M9bYLgs2Q&index=44&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

JH3 Newton Help and Fibonacci Problem- (11:49)

<https://www.youtube.com/watch?v=bvc5faMnzlk>

JH3 String Methods Help- (10:34)

<https://www.youtube.com/watch?v=xg7bQX6uVzE>

5: Basics of Classes Part 1

Defining Classes 2: Rectangle- (42:50)

<https://www.youtube.com/watch?v=24M9bYLgs2Q&index=44&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Author's Date Sixth Try- (31:00)

<https://www.youtube.com/watch?v=GOpt340z9WM&index=43&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Classes 3: Summary, Constructors (JHPN)- (40:23)

<https://www.youtube.com/watch?v=24M9bYLgs2Q&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=44>

Defining Classes 4: Miscellaneous (JPHN)- (33:42)

<https://www.youtube.com/watch?v=Xh2-bIQDLaY&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=41>

6: Basics of Classes Part 2

Static Things- (45:00)

<https://www.youtube.com/watch?v=owpvdju44U8&index=40&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Eclipse Debugger- (18:25)

<https://www.youtube.com/watch?v=HdLu0kZIRj0&index=1&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Jing: Tool for Making a Video- (7:53)

<https://www.youtube.com/watch?v=YvIxOOMMO5A>

Help for JH4- (38:00)

https://www.youtube.com/watch?v=DXdtEqWP9_g&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=42

JH4 Help- Hangman- (7:00)

https://www.youtube.com/watch?v=vKb0EIdv_nA&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=21

7: Midterm Hints, Miscellaneous Entries

Wrapper Classes (JPHO)- (26:47)

<https://www.youtube.com/watch?v=nvg6ECIKWeM&index=39&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Parameters References (JPHP)- (46:40)

<https://www.youtube.com/watch?v=S4MWDGuTtLo&index=38&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Packages, Access Levels- (18:00)

https://www.youtube.com/watch?v=ctva_H4EVLo&index=37&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu

Eclipse Goodies- (9:54)

<https://www.youtube.com/watch?v=RX7eWOAgFEQ&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=72>

Advanced Web Features- (8:48)

<https://www.youtube.com/watch?v=DQMfU7QI7KM&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=65>

How to be a good Programmer- (25:47)

<https://www.youtube.com/watch?v=ACrfjssOwsk&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=71>

8: Arrays Part 1

Array Fundamentals 1- (42:50)

<https://www.youtube.com/watch?v=JVNEX-rvE5M&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=36>

Array Example Standard Deviation- (7:26)

<https://www.youtube.com/watch?v=X2TvnTcwJrw&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=33>

Array Initialization & Method Parameters (33:50)

<https://www.youtube.com/watch?v=UsxpKDEhN3I&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=35>

Array Miscellaneous (JPHQ)- (42:01)

<https://www.youtube.com/watch?v=IzSgpMitIa8&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=34>

Array Example: Common Birthday (Integer Date)- (15:29)

<https://www.youtube.com/watch?v=6DUUCGDBgx0&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=32>

Array Example: Common Birthday (using date class)- (12:00)

<https://www.youtube.com/watch?v=swd9os8Ty6s&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=28>

Array Example: Unique Numbers- (20:00)

<https://www.youtube.com/watch?v=9AIKYdEUES4&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=31>

JH5 Fraction Help- (30:43)

<https://www.youtube.com/watch?v=fQXzyA6zv1g&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=66>

9: Arrays Part 2

Select Sort- (12:30)

<https://www.youtube.com/watch?v=qLZLbdINPSg&index=30&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>

Arrays Part 2 Miscellaneous- (29:50)

<https://www.youtube.com/watch?v=-Pm2EuCO78M&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=29>

Array Multi-Dimensions- (18:00)

<https://www.youtube.com/watch?v=7c3DpMRfQIE&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=27>

GradeBook and Fantasy Football (JPHR)- (20:23)

<https://www.youtube.com/watch?v=LmGWWjl49ak&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=25>

Bubble Sort- (34:50)

https://www.youtube.com/watch?v=gvnACKiC_K0&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=26

Matching Game- (36:00)

<https://www.youtube.com/watch?v=e4yUdQPVdrY&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=24>

Game Of Life- (42:50)

<https://www.youtube.com/watch?v=gr9YPkV3j4w&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=23>

10: Inheritance

Inheritance: Introduction- (46:00)

<https://www.youtube.com/watch?v=oo6uYH6AF3c&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=20>

Inheritance Odds and Ends- (41:50)

<https://www.youtube.com/watch?v=808-vhr8l6s&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=19>

JH6 Inheritance More Examples- (24:50)

<https://www.youtube.com/watch?v=aqBD3P01NaU&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=18>

Inheritance More Examples- (28:00)

<https://www.youtube.com/watch?v=cK96lpLLRtU&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=17>

11: Inheritance / Polymorphism

Inheritance Object Class- (35:00)

https://www.youtube.com/watch?v=d6WZQ_4UhcE&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=16

Polymorphism: Shapes (JPHS)- (52:22)

<https://www.youtube.com/watch?v=5DdTqI2yRZk&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=15>

More Polymorphic Examples- (24:00)

<https://www.youtube.com/watch?v=MDue990PiF4&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=14>

Polymorphism Book Examples- (22:00)

<https://www.youtube.com/watch?v=A2OQU5wujdU&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=13>

12: Polymorphism / Basics of Drawing and Exceptions

Inheritance/polymorphism Chess Game- (45:00)

<https://www.youtube.com/watch?v=5DdTqI2yRZk&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=15>

Drawing Basics- (32:50)

<https://www.youtube.com/watch?v=Yk2jmCPUKvY&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=11>

Exceptions Basics- (49:50)

<https://www.youtube.com/watch?v=IND032bbsYc&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=10>

13: Exceptions, Interfaces

Exception Hierarchy and Strategy (47:50)

<https://www.youtube.com/watch?v=2S8o3EiO170&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=9>

Checked Exceptions, Input/Output- (37:00)

<https://www.youtube.com/watch?v=7U2Ve5PStu0&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=8>

Mouse Interfaces: Spots Painting- (38:50)

https://www.youtube.com/watch?v=m_4ETRQIZew&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=7

Mouse Interfaces: Drawing Program- (41:00)

<https://www.youtube.com/watch?v=JKikzDDQHus&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=6>

14: Miscellaneous Fun Extras (not on Final)

Word Search- Problem Solving- (42:50)

https://www.youtube.com/watch?v=h7PucFZsH_Y&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=5

Simple GUI Components- (24:00)

<https://www.youtube.com/watch?v=HehGbokXmaM&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=4>

Tic Tac Toe GUI- (35:00)

<https://www.youtube.com/watch?v=rx8fkIP84ss&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu&index=3>

Polymorphic Game of Life- (33:50)

<https://www.youtube.com/watch?v=HdLu0kZIRj0&index=1&list=PLYCnr23oAKDm6x8q1ObSZJk7i2xa5DUvu>