

CISC 1115 Course Syllabus and Homework Assignments
Text: Starting Out With Java From Control Structures through Data Structures, 4th ed.
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- Topic 1: First Java Program
- computer concepts (hardware, software, programs) (pp. 1-6)
 - sample Java programs (pp. 6-21)
 - the Java programming language (pp. 27-32)
 - structure of a simple Java program (pp. 39)
 - the declaration statement (pp. 39)
 - the assignment statement (pp. 44-54)
 - primitive data types (pp. 33-41)
 - the println() and print() methods (pp. 54-57)
 - arithmetic operators (arithmetic expressions) (pp. 113-114)
 - relational operators (boolean expressions)
 - A complete Java program
 - iterative operations
 - for loops (for statements) (pp. 207-216)
 - increments and decrements (pp. 189-193)
- [HW1: Topic 1 Program: Print 1 to 100](#)
- Topic 2: Evaluating an Expression
- real numbers (pp. 47-49)
 - data types float and double (pp. 47-49)
 - writing complex arithmetic expressions
 - arithmetic operator precedence and associativity (pp. 57-59)
 - if statement (pp. 111-121)
 - printing real numbers (pp. 164-178)
 - creating a readable table (pp. 164-178)
 - formatted output (precision, width, justification, tabs) (pp. 164-178)
 - escape sequences (pp. 36-38)
 - combined assignment operators (pp. 63-64)
 - operator precedence (arithmetic, relational, assignment) (pp. 144)
 - mixed mode arithmetic (pp. 65-68)
 - Math class methods (pp. 62-63)
 - data type char (pp. 50-52)
 - the String class (pp. 70-75)
 - program debugging
 - files (pp. 230-237)
 - output files using PrintWriter (or PrintStream) objects (pp. 230-237)
- [HW2: Topic 2 Programming Assignment: Formula](#)
- Topic 3: Reading a Set of Data
- while loop (while statement) (pp. 193-203)
 - using a sentinel (pp. 216-221)
 - interactive data entry (pp. 84-98)
 - the Scanner class (Scanner class methods) (pp. 84-91)
 - dialog boxes (pp. 92-98)
 - methods for converting strings to numbers (pp. 95-98)
 - String.format() method (pp. 175-177)
 - if-else statement (pp. 121-123)
 - the conditional operator (pp. 152-154)
 - input files (pp. 237-248)
- [HW3: Topic 3 Program: Exam Statistics](#)

Topic 4: Summation, Constants, Nested Loops	
- summation loop	(pp.216-220)
- declaring a loop index	(pp. 211-212)
- named constants	(pp. 69-70)
- user controlled for loop	(pp. 212-213)
- nested for loops	(pp. 221-229)
Topic 5; Methods (Member Functions)	(pp. 269-306)
- value-return methods	
- local variables	
- void methods	
- parameterless methods	
- pass by value	
- pass by reference of non-primitive objects	
- file i/o within a method	
- data type boolean	(pp.50)
HW5: Topic 5 Program: Bowling Scores	
Examination #1 exam1 outline	
Topic 6: Control Structures	
- detecting the end of a data set (user response methods)	(pp. 204-206)
- do-while loops	(pp. 204-206)
- logical operators	(pp. 137-145)
- nested if statements	(pp. 124-137)
- switch statement	(pp. 154-164)
- continue and break statements	(pp. 229)
- precedence of operators	(pp.143-144)
- complex Boolean expressions	(pp. 137-144)
- generating random numbers using class Random	(pp 249-255)
HW6: Topic 6 Program: Calculator	
Topic 7: Arrays	
- one-dimensional arrays	(pp. 403-422)
- passing arrays to methods	(pp. 422-426)
- array algorithms and operations	(pp. 426-439)
- returning arrays from methods	(pp. 439-441)
- detecting the end of a file	(pp. 241-244)
- two-dimensional arrays	(pp. 450-461)
- arrays with three or more dimensions	(pp. 462)
HW7.1: Topic 7 Program: Bank Accounts	
HW7.2: Topic 7 Program: Count Zeros	
Topic 8: The String Class	
- String class objects and methods	(pp. 70-75)
- comparing String objects	(pp. 145-151)
- additional String methods	(pp. 566-579)
- the String indexOf() method	
- the StringBuilder Class	(pp. 579-589)
- StringBuilder methods	
- the Scanner nextLine() method	(pp. 86)
- reading lines from a file using the nextLine() method	(pp. 238-241)
- String arrays	(pp. 441-444)
- tokenizing Strings (using method split())	(pp. 589-593)
- character testing and conversion (Character Class)	(pp. 558-565)
HW8: Topic 8 Program: Word Count	

Lecture Notes: Number Systems

(lecture notes)

Examination #2 [exam2 outline](#)

Topic 9: Sorting and Searching

- selection sort
- bubble sort
- linear search
- binary search

[HW9: Topic 9 Program: Donations](#)

(pp. 463-466)
(lecture notes)
(pp. 447-449)
(pp. 466-468)

Topic 10: A First look at Classes

- objects and classes
- writing a simple class
- instance fields and methods
- passing objects as arguments
- StringTokenizer class
- converting Strings to numbers

(pp. 317-324)
(pp. 324-341)
(pp. 341-345)
(pp. 358-360)
(pp. 589-593)
(pp. 95-98)

Final Examination