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| **Date Assigned: 9/19/16** | **Date Due: 9/21/16** |
| **Unit:** Methodology | **Turn In List:** **1. Terms, 2. Post timeline, and 3. Grid** |
| *“I can create and use many data types in a simple computer program.”* | |

**Data Types and Variables: A look at the major data types for modern languages**

**Content Objectives:** Students will be able to declare, initialize and assign variable for a program.

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| **Starter Activity** |
| // Consider Mr Kapptie’s grading system where numbers  // are turned into letters. Fill in the blanks in the  // following code to complete the boolean expression.  float grade = random(0,100);  if (\_\_\_\_\_\_\_) {  println("Assign letter grade A.");  } else if (\_\_\_\_\_\_\_\_) { // In one conditional statement, you can only ever have one if and one else. However, you can have as many else if's as you like!  println (\_\_\_\_\_\_\_\_);  } else if (\_\_\_\_\_\_\_\_) {  println (\_\_\_\_\_\_\_\_);  } else if (\_\_\_\_\_\_\_\_) {  println (\_\_\_\_\_\_\_\_);  } else {  println (\_\_\_\_\_\_\_\_);  }  // Create a method to use in an app to display letter grade based on the  // position of mouseX on a line. |

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| **Key Terms:** | |
| Interpreted Language | Text files that are read by an interpreter (not changed) that sit on a computer and are read by the interpreter itself. |
| Compiled Language | Source code that runs through a compiler (gets changed to machine code) |
| Low Level Language | Written for any platform |
| High Level Language | Written for a specific platform |
| Execute | To be runnable or to run |
| Identifiers | (ID) The name of a variable in an application |
| Declare Variables | Reserving in memory what a variable is and giving it a number |
| Initialize Variables | Stating what a declared variable’s value is |
| Assign Variables | Assigning a variable to a line(s) of code |

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| **Assignment:** |
| For each data type give the following information. Use the Processing reference as an aid (note that all data types follow the java standard.) You may write N/A where applicable.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **Memory Used** | **Possible Values (Min)** | **Possible Values (Max)** | **Purpose** | **Syntax** | | boolean | 1 bit | False | True | Control Statements | Boolean a = false; | | byte | 8 bits | -128 | 127 | Storing numerical values from 127 to -128 (reserving one of 8 bits to apply a positive or negative value) | byte a = 128; | | char | 2 bytes (16 bits) | 0 | 255 | Stores letters and symbols in the Unicode format | char m;  m = ‘A’ ;  int n = ‘&’ ; | | color |  |  |  |  |  | | double |  |  |  |  |  | | float |  |  |  |  |  | | int |  |  |  |  |  | | long |  |  |  |  |  | | String |  |  |  |  |  | | XML |  |  |  |  |  | | Array |  |  |  |  |  | | ArrayList |  |  |  |  |  | | Table |  |  |  | To store data with multiple rows and columns, like a spreadsheet | Table table; |   Create a new processing project with a medium gray canvas size of 1000 x 1000 pixels and draw a black grid on the first made up of lines at every 100 pixels vertically and horizontally. Provide text labels (100, 200, etc.) on the left margin and top margin. |

Notes (Points of interest, mistakes, lessons learned, web resources, and thoughts):

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