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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 the interpreter |
| Compiled Language | Translates raw text files into machine text code |
| Low Level Language |  |
| High Level Language |  |
| Execute | Means to run |
| Identifiers | Name of a variable within an application |
| Declare Variables | First line in code |
| Initialize Variables | Second line in code |
| Assign Variables |  |

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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 | N/A | N/A | N/A | For values true and false | Boolean var | | byte | 8 bytes | -128 | 127 | For storeing numerical values from 127-128 | Byte var | | char | N/A | N/A | N/A | Data type for characters and symbols | Char var | | color | N/A | N/A | N/A | Data type for storing color values | N/A | | double | N/A | N/A | N/A | Data type for floating-point numbers | Double var | | float | N/A | N/A | N/A | Data type for floating numbers with a decimal | Float var | | int |  |  |  |  |  | | long |  |  |  |  |  | | String |  |  |  |  |  | | XML |  |  |  |  |  | | Array |  |  |  |  |  | | ArrayList |  |  |  |  |  | | 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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