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| **Date Assigned: 9/22/15** | **Date Due: 9/24/15** |
| **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 |  |
| Compiled Language | Binary, hex, machine code |
| Low Level Language | Low abstraction, closer to machine code |
| High Level Language | High abstraction, written closer to English |
| Execute | A file an OS can run |
| Identifiers | Identifies a variable |
| Declare Variables |  |
| Initialize Variables | Give a variable its first value |
| Assign Variables | Changing a value |

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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 |  |  | Determining if something is true or false |  | | byte | 1 bit |  |  | Unt of storage |  | | char | 16 bit |  |  |  |  | | color |  |  |  |  |  | | double | 32 |  |  |  |  | | float | 32 |  |  |  |  | | int | 32 |  |  |  |  | | long | 64 |  |  |  |  | | String | 2 |  |  |  |  | | XML |  |  |  |  |  | | Array | Depends on data type |  |  |  |  | | ArrayList | Depends on data type |  |  |  |  | | Table | File size |  |  |  |  |   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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