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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 | A programming language where instructions are executed directly text files need to be interpreted (python) |
| Compiled Language | Compiling of a source code, translates code to machine code |
| Low Level Language | Machine code, java, platform spesific |
| High Level Language | Python, SQL, |
| Execute | Run a file |
| Identifiers | Name of a variable in an aplication |
| Declare Variables | Assign a name |
| Initialize Variables | Assigning a value |
| 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 | 1 bit | true | false | Control statement | Boolean a=false; | | byte | 8 bits | -128 | 127 | many | Byte var=value | | char | 2 bytes/16 bits | N/A | N/A | characters | Char var=value | | color | 4 bytes/ 32 bits | 0 | 255 | color | Color c1=… | | double | 8 bytes/ 64 bits | - 3.40282347^38 | 3.40282347^38 | N/A | Double var = value | | float | 4 byte/ 32 bit | -3.40282347^38 | 3.40282347^38 | Rounded integers | Float var = value | | int | 4 bytes/ 32 bits | -2,147,483,648 | 2,147,483,648 | integers | Int var = value | | long | 8 bytes/ 64 bits | -9,223.372.036,854,775,807 | 9,223,372,036,854,775,807 | integers | Long var = value | | String |  |  |  | words | String(data, offset, length | | XML |  |  |  | files | XML(name) | | 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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