|  |  |
| --- | --- |
| **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.

|  |
| --- |
| **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. |

|  |  |
| --- | --- |
| **Key Terms:** | |
| Interpreted Language | Text files that sit on a computer and are called up or read by an interpreter. EX: Python Fast and huge in web development. |
| Compiled Language | Translates the source code into machine code EX: |
| Low Level Language | Programming language that provides little or no abstraction from a computer. Usually machine code. EX: |
| High Level Language | A programing language that are closer to human languages and further from machines languages. EX: |
| Execute | To carry out of put into effect |
| Identifiers | sequence of characters used to identify or refer to a program or an element, such as a variable or a set of data, within it. |
| Declare Variables | It gives a variable a name or it identifies it |
| Initialize Variables | sequence of characters used to identify or refer to a program or an element, such as a variable or a set of data, within it. |
| Assign Variables |  |

|  |
| --- |
| **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 | To control statements to determine the flow of a program | boolean var, boolean var=booleanvalue | | byte | 8 bits | -128 | 127 | na | byte var  byte = value | | char | 16 bits | na | na | Stores letters and symbols in Unicode formatting. | char var  char var=value | | color | 32 bits | 0 | 255 | Stores colors | Na | | double | 64 bits | na | na | For storing larger data type numbers than float | double var  double var= value | | float | 32 bits | -3.40282347E+38 | 3.40282347E+38 | Used for storing small numbers | float var  float var= value | | int | 32 | 2,147,483,647 | -2,147,483,647 | Used for whole number varables | int var  int var= value | | long | 32 | -9223372036854775808 | -9223372036854775808 | Data base for large interagers | Long var  long var= value | | String | na | na | na | Methods for examining individual characters | sting(data)  sting(data, offset, length) | | XML | na | na | na | A representation of an MXL object, able to prse XML code |  | | Array | na | 0 | na | A list of data | Datatype[] var  var[element]=value  Var. length | | ArrayList | na | na | na | An array List stores a variable number of objects. | ArrayList<Type>()  ArrayList<Type>(initial capacity) | | Table | na | na | na | a talbe stores dat with multiple rows and columns | Table()  Table(rows) |   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):

|  |
| --- |
|  |