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

|  |
| --- |
| **Starter Activity** |
| //Grade Scale  //Tyler Proffitt  void setup() {  size (200, 200);  }  void draw() {  background(255);  stroke(0);  strokeWeight(2);  line(0, 150, width, 150);  stroke(255, 0, 0);  strokeWeight(5);  point(mouseX, 150);  displayGrade(mouseX/2);  }  void displayGrade(float grade) {  fill(0);  if (grade>=89) {  text("Assign letter grade A." + grade, 50, 50);  } else if (grade<88 && grade >=80) {  text("Assign letter grade B+." + grade, 50, 50);  } else if (grade<79 && grade >=70) {  text("Assign letter grade C+." + grade, 50, 50);  } else if (grade<69&& grade >=60) {  text("Assign letter grade D+." + grade, 50, 50);      } else { //catch all  text("Assignment letter F." + grade, 50, 50);  }  } |

|  |  |
| --- | --- |
| **Key Terms:** | |
| Interpreted Language | Language for which most of its implementations execute instructions directly. without previously compiling a program into machine-language instructions. |
| Compiled Language | Takes source code and makes it machine code |
| Low Level Language | Referring to amount of low amount of abstractions |
| High Level Language | A ton of abstraction |
| Execute | What we tell computers to do. |
| Identifiers | Any name for a variable represented in data |
| Declare Variables | Receiving its first value |
| Initialize Variables | Give data its first value |
| Assign Variables | Any time you make an assignment to a variable, you can change throughout the life cycle of the program. |

|  |
| --- |
| **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 | 1byte | false | true | Shrink code | Boolean variable | | byte | 1 byte | none | none | Converts any value of a primitive data type | byte var | | char | 2 bytes | none | none | Converts any value of a primitive data type | none | | color | 32bit |  |  |  |  | | double | 64 |  |  |  |  | | float | 32 |  |  |  |  | | int | 32 |  |  |  |  | | long | 64 bits |  |  |  |  | | String | 1 byte per character |  |  |  |  | | XML | File size |  |  |  |  | | Array | Depends on data types |  |  |  |  | | ArrayList | Same as array |  |  |  |  | | Table | Depends on 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):

|  |
| --- |
|  |