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| **Date Assigned: 1/29/16** | **Date Due: 2/2/16** |
| **Unit:** Language Basics | **Turn In List:** **1. This document** |
| *“I will understand and implement date/time features of my language.”* | |

**Title: It’s a Date**

**Content Objectives:** Students will properly use their language date/time features to make comparisons and calculations.

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| **Starter Activity** |
| How do you print the current full date and time in your language?  Date date = new Date();  System.out.println(date); |

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| **Assignment:** |
| Students will use the following websites and internet searches to complete the table below:  Java: <http://www.tutorialspoint.com/java/java_date_time.htm> Note the use of millis!  C++: <http://www.tutorialspoint.com/cplusplus/cpp_date_time.htm>  Python: <http://www.tutorialspoint.com/python/python_date_time.htm>  C#: <https://msdn.microsoft.com/en-us/library/system.datetime.now(v=vs.110).aspx>  C++ and Python: note the use of a struct to handle individual elements of the date/time! |

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| **Include Sample Code or Explanation for the following Concepts Below (copy and paste lines from editor)** | |
| Code to print current time only: | Date date = new Date();  SimpleDateFormat s = new SimpleDateFormat("hh:mm:ss");  System.out.println(s.format(date)); |
| Code to print current date as: Day Month Year | Date date = new Date();  SimpleDateFormat s = new SimpleDateFormat("dd MM yyyy");  System.out.println(s.format(date)); |
| Code to format date as: YYYY/MM/DD | Date date = new Date();  SimpleDateFormat s = new SimpleDateFormat("yyyy\\MM \\dd");  System.out.println(s.format(date)); |
| Code to convert (cast)current date/time to string | SimpleDateFormat s = new SimpleDateFormat("yyyy MM dd");  String string = date.toString(); |

Psuedocode an app that asks for the user’s birthdate and calculates the age in millenniums, centuries, decades, years, months, days, hours, minutes, seconds.

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| User input birthday with Scanner. Find current age. |

Code the app that calculates the above psuedocode (note: depending on your language, you may need to ask for day, month and year separately and set each value to a global variable…) Consider adding functionality to ask for two dates and calculate the difference between them.

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| import java.util.\*;  import java.text.SimpleDateFormat;  import java.text.SimpleDateFormat;  public class Age {  public static void main(String[] args) {  Scanner input = new Scanner(System.in);  Date date = new Date();  int Bmonth, Bday, Byear, day, month, year;  float yAge, dAge, mAge, dec, cent, mil, hrs, mins, secs;  SimpleDateFormat s;  System.out.println("Input your Birthday in the form Month/Day/Year: ");  String i = input.nextLine();  String[] birth = i.split("/");  Bmonth = Integer.valueOf(birth[0]);  Bday = Integer.valueOf(birth[1]);  Byear = Integer.valueOf(birth[2]);  s = new SimpleDateFormat("MM");  month = Integer.valueOf(s.format(date));  s = new SimpleDateFormat("dd");  day = Integer.valueOf(s.format(date));  s = new SimpleDateFormat("yyyy");  year = Integer.valueOf(s.format(date));  yAge = year-Byear;  mAge = month-Bmonth;  dAge = day-Bday;  if (mAge<0) {  yAge--;  }  mAge = yAge\*12;  if (dAge<0) {  mAge--;  }  dAge = yAge\*365;  dec = yAge/10;  cent = yAge/100;  mil = cent/10;  hrs = dAge\*24;  mins = hrs\*60;  secs = mins\*60;    System.out.println("Millenia: "+mil);  System.out.println("Centuries: "+cent);  System.out.println("Decades: "+dec);  System.out.println("Years: "+yAge);  System.out.println("Months: "+mAge);  System.out.println("Days: "+dAge);  System.out.println("Hours: "+hrs);  System.out.println("Minutes: "+mins);  System.out.println("Seconds: "+secs);  }  } |