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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?  // Chanel van Ginkel - January 31 17  #include <iostream>  #include <ctime>  using namespace std;  int main () {  time\_t now = time(0);    char \* dt = ctime (&now);  cout << "The local date and time is: " << dt << endl;  tm \* gmtm = gmtime(&now);  dt = asctime (gmtm);  cout << "The UTC date and time is: " << dt << endl;  } |

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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: | cout << "Time: "<< 1 + ltm->tm\_hour << ":";  cout << 1 + ltm->tm\_min << ":";  cout << 1 + ltm->tm\_sec << endl; |
| Code to print current date as: Day Month Year | Day = CurrentDate % 100;  Month = ( CurrentDate / 100 ) % 100;  Year = ( CurrentDate / 10000 );  std::cout << Month << " / " << Day << " / " << Year ; |
| Code to format date as: YYYY/MM/DD | #include <iostream>  #include <ctime>  int main () {  time\_t now = time(0);    tm\*ltm = localtime(&now);  std::cout << 1900 + ltm->tm\_year << "/" << 1 + ltm->tm\_mon << "/" << ltm->tm\_mday << std::endl;  } |
| Code to convert (cast)current date/time to string | strtime |

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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| Create a variable for the user’s birthdate. Ask for the user to input their birthdate. Use the current time to calculate the difference in time between their birthdate and now. |

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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