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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?  int main() {  time\_t now = time(0);  char\* dt = ctime(&now);  std::cout << "date and time is: " << dt << std::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: | //Nick Duval 1/31/17  #include <iostream>  #include <ctime>  #include <stdlib.h>  using namespace std;  int main() {  time\_t now = time(0);    tm \* ltm = localtime(&now);  cout << "time:" << ltm -> tm\_hour << ":";  cout << ltm -> tm\_min << ":";  cout << ltm -> tm\_sec << endl;  } |
| Code to print current date as: Day Month Year | //Nick Duval 1/31/17  #include <iostream>  #include <ctime>  #include <stdlib.h>  using namespace std;  int main() {  time\_t now = time(0);  char \* dt = ctime(&now);  tm \* ltm = localtime(&now);  cout << "time:" << ltm -> tm\_mday << "/";  cout << ltm -> tm\_mon << "/";  cout << ltm -> tm\_year << endl;  } |
| Code to format date as: YYYY/MM/DD | int main() {  cout << "yyyy/mm/dd" << endl;  } |
| Code to convert (cast)current date/time to string |  |

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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| Find exact 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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| //Nick Duval 1/31/17  #include <iostream>  #include <ctime>  #include <stdlib.h>  using namespace std;  int main() {  char y[4];  char mon[2];  char d[2];  char h[2];  char min[2];  cout << "birth date year month day hour min (if you dont know just say 12:00):" << <<endl;  cin >> y >> mon >> d >> h >> min >> endl;  for(int i = 0; i<y; i++){  time\_t now = time(0);  char \* dt = ctime(&now);  tm \* ltm = localtime(&now);  }  for(int i = 0; i<mon; i++){  time\_t now = time(0);  char \* dt = ctime(&now);  tm \* ltm = localtime(&now);  }  for(int i = 0; i<d; i++){  time\_t now = time(0);  char \* dt = ctime(&now);  tm \* ltm = localtime(&now);  }  for(int i = 0; i<h; i++){  time\_t now = time(0);  char \* dt = ctime(&now);  tm \* ltm = localtime(&now);  }  for(int i = 0; i<min; i++){  time\_t now = time(0);  char \* dt = ctime(&now);  tm \* ltm = localtime(&now);  }  cout << "you are " << y << mon << d << h << min << "old" << endl;  } |