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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?  import datetime;  now= datetime.datetime.now()  print "current time",now |

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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: | import time;  localtime = time.asctime(time.localtime(time.time() ) )  print "local current time:", localtime |
| Code to print current date as: Day Month Year | import time  t= (2017, 1, 31, 17, 3, 38, 1, 48, 0)  t= time.mktime(t)  print time. strftime(" %dst %b %y", time.gmtime(t)) |
| Code to format date as: YYYY/MM/DD | import datetime;  now= datetime.datetime.now()  print "current time",now |
| Code to convert (cast)current date/time to string | import time  t= (2017, 1, 31, 17, 3, 38, 1, 48, 0)  t= time.mktime(t)  print time. strftime(" %dst %b %y", time.gmtime(t)) |

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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| Code that shows my age in millenniums, centuries, decades, years, months, days, hours, minutes, and seconds |

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 datetime;  now = datetime.datetime.now()  userInput = raw\_input("please enter your birthday here in YYYY/MM/DD format: ")  if (len(userInput)== 10):  userDay = userInput[8:10]  userMonth = userInput[5:7]  userYear = userInput[0:4]  dage = now.day - int(userDay)  mage = now.month - int(userMonth)  yage = now.year - int(userYear)  timeDif = (yage\*365+ mage\* 30.4 +dage)  endMege = int(timeDif/365000)  endCage = int(timeDif/36500)  endDege = int(timeDif/3650)  endYage = int(timeDif/365)  endMage = int(timeDif/30.4)  endDage = int(timeDif)  endHage = int(timeDif\*24)  endMige = int(timeDif\*1440)  endSage = int(timeDif\*86400)    print 'You are', endMege,'milleniums', endCage, 'centurys', endDege, 'decades', endYage, 'years', endMage, 'months',endDage,'days', endHage, 'hours',endMige, 'minutes and', endSage, 'seconds old'  else :  print("Your input is wrong. Try again.") |