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| **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** |
| import time;  localtime = time.localtime(time.time())  print ("Local current time :"), localtime |

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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 datetime  now = datetime.datetime.now()  print (now.day)  print (now.month)  print (now.year) |
| Code to format date as: YYYY/MM/DD | from datetime import date  today = str(date.today())  print(today) |
| Code to convert (cast)current date/time to string | import datetime  t = datetime.datetime(2018, 2, 1, 0, 0)  print t.strftime('%m/%d/%Y') |

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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| You would ask the user when their birthday is, and then use a form like “Ticks” to find out how long ago they were born by using all of the “TimeTuples” to find out their age in each format of time |

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 = input("Enter your birthday 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)  endYage = int(timeDif/365)  endMage = int(timeDif - endYage\*365)-((timeDif - endYage\*365)%30.4))/30.4  endDage = int(timeDif = endYage\*365 - endMage\*30.4)  print("You are ", endYage , " years, " , endMage , " months and " , endDage , "days old")  else :  print ("Your input is wrong. Try again.") |