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| **Program 01** |
| **Output** |
| ===== RESTART: /Users/biniamlemma/Desktop/CSCI\_2061/Assn\_03/assn03\_01.py =====  Select a medium:  1. Air  2. Water  3. Steel  Enter your choice: 2  Enter the distance in feet: 1000  A sound wave takes 0.20408163265306123 seconds to travel 1000 feet through water.  >>>  ===== RESTART: /Users/biniamlemma/Desktop/CSCI\_2061/Assn\_03/assn03\_01.py =====  Select a medium:  1. Air  2. Water  3. Steel  Enter your choice: 2  Enter the distance in feet: 0  Distance must be greater than zero.  >>>  ===== RESTART: /Users/biniamlemma/Desktop/CSCI\_2061/Assn\_03/assn03\_01.py =====  Select a medium:  1. Air  2. Water  3. Steel  Enter your choice: 4  Please choose between 1 and 3  Enter your choice: |
| **Source Code** |
| #Assn03part01.cpp, Biniam Lemma, 09/08/16  #This program calculates how long it takes sound to travel  #through air, water or steel.  def main():    #ask the user to select a medium and distance in feet  print("Select a medium: \n\n1. Air\n2. Water\n3. Steel\n")  x = input("Enter your choice: ")  x = int(x)  # 0 validation  while x < 1:  print ("Please choose between 1 and 3")  x = input("Enter your choice: ")  x = int(x)  while x > 3:  print ("Please choose between 1 and 3")  x = input("Enter your choice: ")  x = int(x)  #ask the user to enter the distance  dist = input( "Enter the distance in feet: ")  dist = int(dist)  #conditonals to calculate the distance for each choice  if x == 1:  if dist == 0:  print("\nDistance must be greater than zero.\n\n")  else:  print("\nA sound wave takes", (dist/1100), "seconds to travel ",  dist, " feet through air.\n\n")  elif x == 2:  if dist == 0:  print("\nDistance must be greater than zero.\n\n")  else:  print("\nA sound wave takes", (dist/4900), "seconds to travel ",  dist, " feet through water.\n\n")  elif x == 3:  if dist == 0:  print("\nDistance must be greater than zero.\n\n")  else:  print("\nA sound wave takes", (dist/16400), "seconds to travel ",  dist," feet through water.\n\n")        if \_\_name\_\_ == "\_\_main\_\_":  main() |

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| **Program 02** |
| **Output** |
| ===== RESTART: /Users/biniamlemma/Desktop/CSCI\_2061/Assn\_03/assn03\_02.py =====  Enter the number of students: 3  Enter the number of tests: 3  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Test 1 Scores\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Enter the score for test 1 for the student 1: 100  Enter the score for test 1 for the student 2: 90  Enter the score for test 1 for the student 3: 80  Average for test 3 was 90.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Test 2 Scores\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Enter the score for test 2 for the student 1: 90  Enter the score for test 2 for the student 2: 80  Enter the score for test 2 for the student 3: 70  Average for test 3 was 80.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Test 3 Scores\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Enter the score for test 3 for the student 1: 80  Enter the score for test 3 for the student 2: 70  Enter the score for test 3 for the student 3: 60  Average for test 3 was 70.0  Average for all three tests was 80.0  >>> |
| **Source Code** |
| #Assn3.part2, Biniam Lemma, 09/08/2016  #This program prompts the user for the number of students  #and number of tests per student, then it calculates the  #average for all three tests.  def main():  a = input("Enter the number of students: ")  b = input("Enter the number of tests: ")  a = int(a)  b = int(b)  x = 0  totalav = 0    while (x < b):  total = 0.0  av = 0.0  print("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Test {} Scores\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n".format(x+1))  y = 0  z = 0  scores=[]  while (y < a):  var = input("Enter the score for test {} for the student {}: ".format(x+1, y+1))  scores.append(var)  y=y+1  while (z < a):  total = total + float(scores[z])  z = z+1  av = total/a  totalav = totalav+av  print("Average for test {} was ".format(b), av)    x=x+1  overalav = totalav/b  print ("\nAverage for all three tests was ", overalav)    if \_\_name\_\_ == "\_\_main\_\_":  main() |

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| **Program 03** |
| **Output** |
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| **Source Code** |
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| **Program 04** |
| **Output** |
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| **Source Code** |
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| **Program 05** |
| **Output** |
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| **Source Code** |
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