**Data Python Revision Document**

1. Look at the python routine written below. You may wish to copy the routine into a python IDE and run it to see what it does.

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| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30 | def showOptions():  print("Press 1 to enter width")  print("Press 2 to enter height")  print("Press 3 to enter bit depth")  print("Press 4 to calculate file size")  x = int(input(""))  return x  def showValues(w, h, bd):  print(f"Current width: {w}")  print(f"Current height: {h}")  print(f"Current bit depth: {bd}")  running = True  width = height = bd = None  while running:  showValues(width, height, bd)  choice = showOptions()  if choice == 1:  width = int(input("Enter width: "))  elif choice == 2:  height = int(input("Enter height: "))  elif choice == 3:  bd = int(input("Enter bit depth: "))  elif choice == 4:  print(f"The file size is {width\*height\*bd}b")  running = False  else:  print(f"Error: Unknown input '{choice}'")  input("Press any key") |

1. This routine makes use of iteration. What line of this routine is used to perform iteration?

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1. What is the exit condition that causes this routine to terminate?

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1. This routine makes use of subroutines. What are the names of the subroutines used?

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1. What advantage does the use of subroutines give in this routine?

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1. What happens when the user inputs “six” when prompted in this routine? Why?

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1. If you have not done so already, copy the code from the example above into python. We are going to make some edits to improve the code.
2. Add a 5th option to the routine so that the user can select the number 5 to quit the routine.
3. Modify the routine so that the user cannot calculate the file size before entering a width, height and bit depth.
4. Modify the routine to add validation so that the routine does not crash if the user supplies non-numeric data when entering the width, height or bit depth.
5. Paste your modified code into the space below.

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1. For each segment of code, write down the output and describe what the highlighted methods do.

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| **Code** | **Output** |
| data = "steve,johnson,34,RG41 8LR"  data = data.split(",")  print(f"Hello {data[0].title()}") |  |
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| data = "Hi\t Bob\nHow are you?"  data = data.replace("\n"," ")  data = data.replace("\t","")  print(data) |  |
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| names = ["Alan", "Beth", "Chris", "Dylan", "Emma"]  scores = [43, 29, 35, 40, 37]  winners = []  for i in range(len(names)):  if scores[i] > 30:  winners.append(names[i])  print(names) |  |
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| x = input("Would you like to play? (y/n)")  x = x.lower()  if x == "y":  print("Lets go!")  elif x == "n":  print("Goodbye") |  |
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| age = None  while not age:  age = input("Enter age: ")  if age.isnumeric() == False:  age = None |  |
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