

1. Suppose we have a tuple, `dateTup`, that contains 2 elements, the first representing a month and the second a year. Write expressions to add a day element to the middle of the `dateTup`. For example, if `dateTup` contains ('September', 1947), and `day = 9`, then after your expressions `dateTup` should contain ('September', 9, 1947).

2. Rewrite the following expression in a simpler or more elegant way (to the right of the code).

```
collegeInfo = ["Williams College", 1793, "MA"]
colName = collegeInfo[0]
foundYear = collegeInfo[1]
colState = collegeInfo[2]
```

3. What is stored in `bugDates` at the end of this code? Why?:

```
bugDates = [9, 9, 1947]
bugDates = bugDates.append("First computer bug found, in a Mark II!")
```

4. Define a function `processZip` which takes a dictionary `zipCodes` and sets the value of its 'home' key to '01267'. `processZip` must return the old value of 'home' key. It must work if the dictionary provided does not have a 'home' key (in this case it should add that key with the value '01267', and return '01267'). For full credit do not use conditionals in your function.

5 Write a list comprehension that iterates over a comma separated string of courses 'courseInfo' and creates a new list of all the first words from each of them. For example, if courseInfo = 'Intro to CS, Algorithm Design, Storage Systems', then your list must contain ['Intro', 'Algorithm', 'Storage'].

6 Consider the following data list, where each row contains a type of a fruit, the number of fruits of that type, and the number of those fruits infested with a parasitic insect:

```
fruitData = [  
  [ "Apple", 203, 103 ],  
  [ "Orange", 84, 14 ],  
  [ "Banana", 114, 14 ],  
  [ "Kiwi", 25, 14 ],  
  [ "Mango", 46, 26 ]  
]
```

(a) Complete the following expression to sort this data alphabetically by the fruit type.

```
byType = sorted(           ) # fill in
```

(b) Write an expression to sort this data by the number of infested fruits (fewest to most), and then by the total number of fruits (fewest to most) if the number of infested fruits is tied.

```
byInfested =\  
sorted(           ) # fill in
```