Lab 4

# Part 1

1 and 2

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| >>> list\_a = [10, 10, 12, 14, 15]  >>> list\_b = [10, 10, 11, 22, 29]  >>> list\_a > list\_b  True  #The comparison is lexicographic, in this case, 10 and 10 are compared twice until it reachdd 12 and 11, where python determines that list a is greater than lis b |

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| >>> list\_a[-1] + 1  16 |

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| >>> list\_c = list\_a + list\_b |

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| >>> list\_a.append(12)  >>> list\_c  [10, 10, 12, 14, 16, 10, 10, 11, 22, 29] |

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| >>> list\_c = list\_b  >>> list\_b.append(13)  >>> list\_c  [10, 10, 11, 22, 29, 13]  #It adds it to list c as well |

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| >>> list\_b.pop()  13  >>> list\_b  [10, 10, 11, 22, 29] |

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| >>> list\_b.remove(10)  >>> list\_b  [10, 11, 22, 29] |

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| >>> list\_c = list\_b  >>> list\_b.append(13)  >>> list\_c  [10, 10, 11, 22, 29, 13] |

# Part 2

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| >>> digits = ["2","0","3","1","4","0","8"] |

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| >>> result = []  >>> for digit in digits:  result += [digit]    >>> print(result)  ['2', '0', '3', '1', '4', '0', '8']  #What is happening is that the for loop is checking each digits list item one at a time and adding it to the results list using a for loop. It also transformed the strings to integers. |

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| >>> result = []  >>> for digit in digits:  result = [digit] + result    >>> result  ['8', '0', '4', '1', '3', '0', '2']  #The results are backwards since it is added to the list one at a time meaning that the first element added goes progressively to the right as more is added. It has to be in brackets since you cant add an integer to a list. |

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| >>> id\_backward = ''.join(result)  >>> print(id\_backward, 'x'.join(result))  8041302 8x0x4x1x3x0x2 |

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| >>> for index in range(len(digits)):  digits[index] = int(digits[index])    >>> digits  [2, 0, 3, 1, 4, 0, 8] |

# Part 3

1 and 2

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| >>> x = " 10 20 30 40 50 "  >>> y = x.split()  >>> len(y)  5  >>> y  ['10', '20', '30', '40', '50'] |

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| >>> y = x.split(' ')  >>> len(y)  7  >>> y  ['', '10', '20', '30', '40', '50', ''] |

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| a)  >>> y = x.split(",")  >>> y  ['1.25', '2.0', '99', '-1', '0.5', '8']  b)  >>> z = ['1.25', '2.0', '99', '-1', '0.5', '8']  >>> for index in range(len(z)):  z[index] = float(z[index])  >>> z  [1.25, 2.0, 99.0, -1.0, 0.5, 8.0]  c)  >>> for index in range(len(z)):  z[index] = z[index] + 1    >>> z  [2.25, 3.0, 100.0, 0.0, 1.5, 9.0]  d)  >>> for index in range(len(z)):  z[index] = str(z[index])  >>> z  ['2.25', '3.0', '100.0', '0.0', '1.5', '9.0']  >>> znew = ','.join(z)  >>> znew  '2.25,3.0,100.0,0.0,1.5,9.0' |

# Part 4

1 and 2

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| >>> mat = [[4, 2, 0], [8, 69, 4], [12, 14, 3], [8, 0, -8]]  >>> total = 0  >>> for row in mat:  total += sum(row)  >>> total  116 |

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| >>> list1 = []  >>> mat = [[4, 2, 0], [8, 69, 4], [12, 14, 3], [8, 0, -8]]  >>> for row in mat:  list.append(min(row))    >>> min(list1)  -8  OR (if nested loop is absolutely necessary)  >>> list1 = []  >>> for row in mat:  for val in row:  list1.append(val)    >>> list1  [4, 2, 0, 8, 69, 4, 12, 14, 3, 8, 0, -8]  >>> min(list1)  -8 |

# Part 5

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| listOfBids = input(str("Enter your bids seperated by spaces: "))  list1 = listOfBids.split(" ")  for index in range(len(list1)):    list1[index] = float(list1[index])  list1.sort()  print(list1[-1], list1[-2]) |

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