**Task 1. Lists**

**1.1 Write a code snippet that receives a user input (a string with whitespaces) and stores it as a list, make sure that all symbols are lower case [5 points]**

**User input:**

**‘Pulp Fiction’**

**Code Output:**

**Created list is:**

**[‘p’, ‘u’, ‘l’, ‘p’, ‘ ’, ‘f’, ‘i’, ‘c’, ‘t’, ‘i’, ‘o’, ‘n’]**

user\_input = 'Pulp Fiction'

input\_list = list(user\_input.lower())

print("Created list is:", input\_list)

**1.2 Write a code snippet that uses the list from task 1.2 and creates three new lists - list\_vow, list\_cons, list\_symb. The list\_vow contains vowels from the initial list, the list\_cons contains consonants and the list\_sym contains symbols. [10 points]**

**Sample Input 1:**

**[(‘p’, 2), (‘u’, 1), (‘l’, 1), (‘ ’, 1), (‘f’, 1), (‘i’, 2), (‘c’, 1), (‘t’, 1), (‘o’, 1), (‘n’, 1)]**

**Sample Output 1:**

**list\_vow = [(‘u’, 1), (‘i’, 2), (‘o’, 1)]**

**list\_cons = [(‘p’, 2), (‘l’, 1), (‘f’, 1), (‘c’, 1), (‘t’, 1), (‘n’, 1)]**

**list\_sym = [(‘ ’, 1)]**

losyento = [('p', 2), ('u', 1), ('l', 1), (' ', 1), ('f', 1), ('i', 2), ('c', 1), ('t', 1), ('o', 1), ('n', 1)]

glasnye = 'aeiou'

list\_glas = []

list\_negl = []

list\_sym = []

for char, count in losyento:

if char in glasnye:

list\_glas.append((char, count))

elif char.isalpha():

list\_negl.append((char, count))

else:

list\_sym.append((char, count))

print("list.glas = ", list\_glas)

print("list.negl = ", list\_negl)

print("list.sym = ", list\_sym)

**Task 2. Dictionaries**

**2.1 Write a code snippet that creates a dictionary to store Student name, Student’s scores for assignments, Student’s scores for labs and Student’s scores for tests. As follows: [5 points]**

**Sample input:**

**Student name - Adam, scores for assignments = [82, 56, 44, 30], labs = [78.20, 77.20], tests = [78, 77]**

**Code Output:**

**student = {'name': 'Adam', 'assignment': [82, 56, 44,**

**30], 'test': [78, 77], 'lab': [78.2, 77.2]}**

student = {

'name': 'Adam',

'assignment': [82, 56, 44, 30],

'test': [78, 77],

'lab': [78.2, 77.2]

}

print("student =", student)

**2.2 Write a code snippet that uses the dictionary from Task 2.1 and checks if the student submitted all 8 activities - 4 assignments, 2 labs and 2 tests (4 scores for assignments, 2 scores for labs and 2 scores for tests). Save the result in a new dictionary as submission\_check, where you store the name of the student (key) and his submission rate(value) as a number of submitted activities: [5 points]**

**Sample Input 1:**

**student = {'name': 'Adam', 'assignment': [82, 56, 44,**

**30], 'test': [78, 77], 'lab': [78.2, 77.2]}**

**Sample Output 1:**

**{'Adam': 8}**

**student = {**

**'name': 'Adam',**

**'assignment': [82, 56, 44, 30],**

**'test': [78, 77],**

**'lab': [78.2, 77.2]**

**}**

submission\_check = {}

submitted\_count = len(student['assignment']) + len(student['test']) + len(student['lab'])

submission\_check[student['name']] = submitted\_count

print(submission\_check)

**2.3** Write a code snippet that uses the dictionaries from Task 2.1 and Task 2.2 calculates the final grade for a student following the formula:  
 0.3 \*

The final grade can be calculated only for students who submitted at least 4 activities, otherwise final grade is 0. Add the final grade in student dictionary [**15 points**]

**Sample Input 1:**

student = {'name': 'Adam', 'assignment': [82, 56, 44,

30], 'test': [78, 77], 'lab': [78.2, 77.2]}

submission\_rate = {'Adam': 6}

**Sample Output 1:**

student = {'name': 'Adam', 'assignment': [82, 56, 44,

30], 'test': [78, 77], 'lab': [78.2, 77.2], ‘final\_grade’: 70.25}

**Sample Input 2:**

student2 = {'name': 'Kevin', 'assignment': [82, 30], 'test': [], 'lab': [78.2]}

submission\_rate = {'Adam': 6, 'Kevin': 3}

**Sample Output 2:**

student2 = {'name': 'Kevin', 'assignment': [82, 30], 'test': [], 'lab': [78.2], ‘final\_grade’: 0}

def calculate\_final\_grade(student, submission\_rate):

name = student['name']

if submission\_rate.get(name, 0) < 4:

student['final\_grade'] = 0

else:

assignment\_avg = sum(student['assignment']) / len(student['assignment']) if student['assignment'] else 0

lab\_avg = sum(student['lab']) / len(student['lab']) if student['lab'] else 0

test\_avg = sum(student['test']) / len(student['test']) if student['test'] else 0

final\_grade = 0.3 \* assignment\_avg + 0.5 \* lab\_avg + 0.2 \* test\_avg

student['final\_grade'] = round(final\_grade, 2)

return student

student1 = {'name': 'Adam', 'assignment': [82, 56, 44, 30], 'test': [78, 77], 'lab': [78.2, 77.2]}

submission\_rate = {'Adam': 6}

student2 = {'name': 'Kevin', 'assignment': [82, 30], 'test': [], 'lab': [78.2]}

submission\_rate['Kevin'] = 3

student1 = calculate\_final\_grade(student1, submission\_rate)

student2 = calculate\_final\_grade(student2, submission\_rate)

print(student1)

print(student2)

**2.4** Create a new dictionary using dictionaries from Task 2.3. Use student names as keys and save their scores as a nested dictionary. Keep in mind - you shouldn’t do this manually : [**10 points**]

**Sample Input 1:**

student = {'name': 'Adam', 'assignment': [82, 56, 44,

30], 'test': [78, 77], 'lab': [78.2, 77.2], ‘final\_grade’: 70.25}

student2 = {'name': 'Kevin', 'assignment': [82, 30], 'test': [], 'lab': [78.2], ‘final\_grade’: 0}

**Sample Output 1:**

students = {'Adam': {'assignment': [82, 56, 44,

30], 'test': [78, 77], 'lab': [78.2, 77.2], ‘final\_grade’: 70.25},

'Kevin': {'assignment': [82, 30], 'test': [], 'lab': [78.2], ‘final\_grade’: 0}}

students = {student1['name']: student1, student2['name']: student2}

print(students)