DSE315/615 DIP SESSION-1

Instructor & TAs:

Bhavna Rajasekaran

Amit Shukla, Shashwat Saurav, Athul Krishnan, Aryan Pandey

1. Create a list of even numbers from 1 to 100 and print it.

2. Declare the following variables and print their data type. a=8; b=9.5748; c='Go!'; d=True; e=[3,'Oppenheimer']; f= {9, 8, 100}; g = {'India' : 7184, 'Russia' : 7849, 'Canada' : 7435}

3. Given a list of numbers:[1,2,3,1,1,2,2,4,5,6,7,7,2,1,0,9,10]. Create a new list without duplicates. Refrain from hard coding. Once the duplicates are removed from the list, concatenate another list with numbers [20,100, 1000] to the existing list. From this list, remove values at index positions '[5],[10]'. Sort the output. Print the lists at each stage of operation.

4. Take an integer as an input from user and print whether the given number is a prime or not. For this problem assume that user will give an integer less than 1000.

5. Create a dynamic phone directory. A dynamic phone directory is simply a phone directory that can also handle updates just like you can update contact numbers in your mobile phone. For this problem, our directory will have only two things : Name and Phone Number. After creating this directory, you have to process the below updates and print the final directory. Update will be of 2 types : Insert and Delete. In case a contact already exists, you need to overwrite the contact number

of that person. In case of deletion, if a person does not exists in contact list, no changes have to be made.

Insert, ‘Amit’, 9335717017 Insert, ‘Rohan’, 8896417563 Insert, ‘Darshit’, 7357196782 Insert, ‘Rohan’, 9638875219

Insert, ‘Isha’, 9418755876 Insert, ‘Anjali’, 6397422753

Delete, ‘Darshit’ Delete, ‘Vishal’

Insert, ‘Saumya’, 8896416622

6. Initialize the value of a, b, c using: ’input statements’ (from user). Compute the sum of (a, b) and assign to variable ’d’ and difference between (b, c) and assign the result to e.

Print the sum of a and b. Print the difference of b and c. Using relational operations: print the flowing results: i. print(d >= e) , ii. print(d != e) iii. print(e <= d) iv. print(e == d) .

7. Print the decimal numbers 84 and 101 in binary, hexadecimal and octal using python. Find their bit-wise complementary outputs. Perform 2 bit right shift operator on 84 and 2 bit left shift operator on 101. On the results obtained, perform bit-wise OR and bit-wise AND operation.

8. A. Create a tuple with values a = (2, 5, 5, 5, 3, 2, 5) and count number of 5’s in this tuple. B. Given a tuple: b=(‘orange’, ‘apples’,7, 8), perform b*3 on the tuple and print the results. C. Given a tuple nums=(4,9). Unpack the tuple into variables and swap the variables to have results as: (9,4).