Python Activity 16):

1)Write a program that prompts the user to enter a year and the first three letters of a month name (with the first letter in uppercase) and displays the number of days in the month. If the input for month is incorrect, display a message as shown in the following sample run:

Enter a year: 2001

Enter a month: Jan

Jan 2001 has 31 days

Enter a year: 2016

Enter a month: jan

jan is not a correct month name

2)Write a program that prompts the user to enter two characters and displays the major and status represented in the characters. The first character indicates the major and the second is number character 1, 2, 3, 4, which indicates whether a student is a freshman, sophomore, junior, or senior. Suppose the following characters are used to denote the majors:

M: Mathematics

C: Computer Science

I: Information Technology

Enter two characters: M1

Mathematics Freshman

Enter two characters: C3

Computer Science Junior

Enter two characters: T3

Invalid input

3)Write a program that prompts the user to enter a Social Security number in the format DDD-DD-DDDD, where D is a digit. Your program should check whether the input is valid. Here are sample runs:

Enter a SSN: 232-23-5435

232-23-5435 is a valid social security number

Enter a SSN: 23-23-5435

23-23-5435 is an invalid social security number

4)Write a program that prompts the user to enter two strings and reports whether the second string is a substring of the first string.

Enter string s1: ABCD

Enter string s2: BC

BC is a substring of ABCD

Enter string s1: ABCD

Enter string s2: BDC

BDC is not a substring of ABCD

5)Write a program that reads the following information and prints a payroll statement: Employee’s name (e.g., Smith) Number of hours worked in a week (e.g.,10) Hourly pay rate (e.g., 9.75) Federal tax withholding rate (e.g., 20%) State tax withholding rate (e.g., 9%)

A sample run is shown below:

Enter employee's name: Smith

Enter number of hours worked in a week: 10

Enter hourly pay rate: 9.75

Enter federal tax withholding rate: 0.20

Enter state tax withholding rate: 0.09

Employee Name: Smith

Hours Worked: 10.0

Pay Rate: $9.75

Gross Pay: $97.5

Deductions: Federal Withholding (20.0%): $19.5

State Withholding (9.0%): $8.77

Total Deduction: $28.27

Net Pay: $69.22

6)) Write a program that prompts the user to enter three cities and displays them in ascending order. Here is a sample run:

Enter the first city: Chicago

Enter the second city: Los Angeles

Enter the third city: Atlanta

The three cities in alphabetical order are Atlanta Chicago Los Angeles

7)) Write a program that prompts the user to enter a letter grade A, B, C, D, or F and displays its corresponding numeric value 4, 3, 2, 1, or 0. Here is a sample run

Enter a letter grade: B

The numeric value for grade B is 3

Enter a letter grade: T

T is an invalid grade

8)Write a program that receives a character and displays its Unicode. Here is a sample run:

Enter a character: E

The Unicode for the character E is 69

9)Write a program that receives an ASCII code (an integer between 0 and 127) and displays its character. Here is a sample run:

Enter an ASCII code: 69

The character for ASCII code 69 is E

9) write a python program for this pattern:

1

1 2 1

1 2 4 2 1

1 2 4 8 4 2 1

1 2 4 8 16 8 4 2 1

1 2 4 8 16 32 16 8 4 2 1

1 2 4 8 16 32 64 32 16 8 4 2 1

1 2 4 8 16 32 64 128 64 32 16 8 4 2 1

10)Write a program that prompts the user to enter a string and displays the characters at odd positions. Here is a sample run:

Enter a string: Beijing Chicago

BiigCiao

11)Assume letters A, E, I, O, and U as the vowels. Write a program that prompts the user to enter a string and displays the number of vowels and consonants in the string.

Enter a string: Programming is fun

The number of vowels is 5

The number of consonants is 11