Week 4
OS module, working with files, CSV module, JSON module

Part 1. Multiple choice questions

1. A file that data is written to is known as a(n)
a. input file
b. output file
c. sequential access file
d. binary file
2. A file that data is read from is known as a(n)
a. input file
b. output file
c. sequential access file
d. binary file
3. Before a file can be used by a program, it must be
a. formatted
b. encrypted
c. closed
d. opened
4. When a program is finished using a file, it should do this.
a. erase the file
b. open the file
c. close the file
d. encrypt the file
5. The contents of this type of file can be viewed in an editor such as Notepad.
a. text file
b. binary file
c. English file
d. human-readable file
6. This type of file contains data that has not been converted to text.
a. text file
b. binary file
c. Unicode file
d. symbolic file
7. When working with this type of file, you access its data from the beginning of the file to the end of the file.
a. ordered access
b. binary access
c. direct access
d. sequential access
8. When working with this type of file, you can jump directly to any piece of data in the file without reading the data that comes before it.
a. ordered access
b. binary access
c. direct access
d. sequential access
9. This is a small “holding section” in memory that many systems write data to before writing the data to a file.
a. buffer
b. variable
c. virtual file

d. temporary file
10. This marks the location of the next item that will be read from a file.
a. input position
b. delimiter
c. pointer
d. read position
11. When a file is opened in this mode, data will be written at the end of the file's existing contents.
a. output mode
b. append mode
c. backup mode
d. read-only mode
12. This is a single piece of data within a record.
a. field
b. variable
c. delimiter
d. subrecord
13. When an exception is generated, it is said to have been _____.
a. built
b. raised
c. caught
d. killed
14. This is a section of code that gracefully responds to exceptions.
a. exception generator
b. exception manipulator
c. exception handler
d. exception monitor
15. You write this statement to respond to exceptions.
a. run/handle
b. try/except
c. try/handle
d. attempt/except

Part 2. True or False

1. When working with a sequential access file, you can jump directly to any piece of data in the file without reading the data that comes before it.
2. When you open a file that file already exists on the disk using the 'w' mode, the contents of the existing file will be erased.
3. The process of opening a file is only necessary with input files. Output files are automatically opened when data is written to them.
4. When an input file is opened, its read position is initially set to the first item in the file.
5. When a file that already exists is opened in append mode, the file's existing contents are erased.
6. If you do not handle an exception, it is ignored by the Python interpreter and the program continues to execute.
7. You can have more than one except clause in a try/except statement.
8. The else suite in a try/except statement executes only if a statement in the try suite raises an exception.
9. The finally suite in a try/except statement executes only if no exceptions are raised by statements in the try suite.

Part 3 Short Answer

1. Describe the three steps that must be taken when a file is used by a program.
2. Why should a program close a file when it's finished using it?
3. What is a file's read position? Where is the read position when a file is first opened for reading?
4. If an existing file is opened in append mode, what happens to the file's existing contents?
5. If a file does not exist and a program attempts to open it in append mode, what happens?

Part 4 Programming Exercises

1. Write a program that opens an output file with the filename my_name.txt, writes your name to the file, and then closes the file.
2. Write a program that opens the my_name.txt file that was created by the program in question 1, reads your name from the file, displays the name on the screen, and then closes the file.
3. Write a program that lists all the files in a specified directory and categorizes them into two lists: one for text files (files with a .txt extension) and another for other types of files.
4. Write a program to read entire data from file AAPL.csv
5. Write a Python program to read specific columns of a given CSV file and print the content of the columns
6. write a program to search the record from AAPL.csv according to the data from user. Structure of data saved in AAPL.csv is Date, Open, High,Low, Close,Adj Close,Volume
7. Write a Python program that reads each row of a given csv file and skip the header of the file. Also print the number of rows and the field names.
Write a Python program to create an object for writing and iterate over the rows to print the values.
8. Write a program to create a CSV File 'Student.csv' (content shown below). Content of CSV file is input by user.

Rollno,Name,Class
1,Sakham,XII
2,Nisha,XII
3,Irfan,XII
4,Vaani,XII
5,Jasvinder,XII

9. Write a Python program to convert JSON data to Python object.
10. Write a Python program to convert Python object to JSON data
11. Write a Python program to convert Python objects into JSON strings. Print all the values.
12. Write a Python program to convert Python dictionary object (sort by key) to JSON data. Print the object members with indent level 4.