

Homework 6

Files and Exceptions

TRUE/FALSE

1. If a file with the specified name already exists when the file is opened and the file is opened in 'w' mode, then an alert will appear on the screen.

ANS:

2. When a piece of data is read from a file, it is copied from the file into the program.

ANS:

3. Closing a file disconnects the communication between the file and the program.

ANS:

4. In Python, there is nothing that can be done if the program tries to access a file to read that does not exist.

ANS:

5. Python allows the programmer to work with text and number files.

ANS:

6. The **ZeroDivisionError** exception is raised when the program attempts to perform the calculation x/y if $y = 0$.

ANS:

7. An exception handler is a piece of code that is written using the **try/except** statement.

ANS:

8. If the last line in a file is not terminated with `\n`, the **readline** method will return the line without `\n`.

ANS:

9. Strings can be written directly to a file with the **write** method, but numbers must be converted to strings before they can be written.

ANS:

10. It is possible to create a **while** loop that determines when the end of a file has been reached.

ANS:

MULTIPLE CHOICE

1. Which of the following is associated with a specific file and provides a way for the program to work with that file?
 - a. the filename
 - b. the file extension
 - c. the file object
 - d. the file variable

ANS:

2. What is the process of retrieving data from a file called?
 - a. retrieving data
 - b. reading data
 - c. reading input
 - d. getting data

ANS:

3. Which of the following describes what happens when a piece of data is written to a file?
 - a. The data is copied from a variable in RAM to a file.
 - b. The data is copied from a variable in the program to a file.
 - c. The data is copied from the program to a file.
 - d. The data is copied from a file object to a file.

ANS:

4. Which step creates a connection between a file and a program?
 - a. open the file
 - b. read the file
 - c. process the file
 - d. close the file

ANS:

5. How many types of files are there?
 - a. one
 - b. two
 - c. three
 - d. more than three

ANS:

6. A(n) _____ access file is also known as a direct access file.
 - a. sequential
 - b. random
 - c. numbered
 - d. text

ANS:

7. Which type of file access jumps directly to a piece of data in the file without having to read all the data that comes before it?
- sequential
 - random
 - numbered
 - text

ANS:

8. A single piece of data within a record is called a
- variable
 - delimiter
 - field
 - data bit

ANS:

9. Which mode specifier will erase the contents of a file if it already exists and create the file if it does not already exist?
- 'w'
 - 'r'
 - 'a'
 - 'e'

ANS:

10. Which mode specifier will open a file but not let you change the file or write to it?
- 'w'
 - 'r'
 - 'a'
 - 'e'

ANS:

11. Which method could be used to strip specific characters from the end of a string?
- estrip**
 - rstrip**
 - strip**
 - remove**

ANS:

12. Which method could be used to convert a numeric value to a string?
- str**
 - value**
 - num**
 - chr**

ANS:

13. Which method will return an empty string when it has attempted to read beyond the end of a file?

- a. **read**
- b. **getline**
- c. **input**
- d. **readline**

ANS:

14. Which statement can be used to handle some of the runtime errors in a program?

- a. an **exception** statement
- b. a **try** statement
- c. a **try/except** statement
- d. an **exception handler** statement

ANS:

15. Given that the **customer** file references a file object, and the file was opened using the **'w'** mode specifier, how would you write the string **'Mary Smith'** to the file?

- a. **customer file.write('Mary Smith')**
- b. **customer.write('w', 'Mary Smith')**
- c. **customer.input('Mary Smith')**
- d. **customer.write('Mary Smith')**

ANS:

16. When a file has been opened using the **'r'** mode specifier, which method will return the file's contents as a string?

- a. **write**
- b. **input**
- c. **get**
- d. **read**

ANS:

17. Which of the following is the correct way to open a file named **users.txt** in **'r'** mode?

- a. **infile = open('r', users.txt)**
- b. **infile = read('users.txt', 'r')**
- c. **infile = open('users.txt', 'r')**
- d. **infile = readlines('users.txt', r)**

ANS:

18. Which of the following is the correct way to open a file named **users.txt** to write to it?

- a. **outfile = open('w', users.txt)**
- b. **outfile = write('users.txt', 'w')**
- c. **outfile = open('users.txt', 'w')**
- d. **outfile = open('users.txt')**

ANS:

19. What will be the output after the following code is executed and the user enters **75** and **0** at the first two prompts?

```
def main():
```

```

try:
    total = int(input("Enter total cost of items? "))
    num_items = int(input("Number of items "))
    average = total / num_items
except ZeroDivisionError:
    print('ERROR: cannot have 0 items')
except ValueError:
    print('ERROR: number of items cannot be negative')

if __name__ == '__main__':
    main()

```

- a. **ERROR: cannot have 0 items**
- b. **ERROR: number of items can't be negative**
- c. **0**
- d. Nothing; there is no **print** statement to display **average**.

ANS:

20. What will be the output after the following code is executed and the user enters **75** and **-5** at the first two prompts?

```

def main():
    try:
        total = int(input("Enter total cost of items? "))
        num_items = int(input("Number of items "))
        average = total / num_items
    except ZeroDivisionError:
        print('ERROR: cannot have 0 items')
    except ValueError:
        print('ERROR: number of items cannot be negative')

if __name__ == '__main__':
    main()

```

- a. **ERROR: cannot have 0 items**
- b. **ERROR: cannot have 0 items**
ERROR: number of items can't be negative
- c. **ERROR: number of items can't be negative**
- d. Nothing; there is no **print** statement to display **average**. The **ValueError** will not catch the error.

ANS:

COMPLETION

1. When a program needs to save data for later use, it writes the data in a(n) _____.

ANS:

2. Programmers usually refer to the process of _____ data in a file as writing data to the file.

ANS:

3. When data is written to a file, it is described as a(n) _____ file.

ANS:

4. If data is retrieved from a file by a program, this is known by the term _____ file.

ANS:

5. A(n) _____ file contains data that has been encoded as text, using a scheme such as ASCII.

ANS:

6. A(n) _____ access file retrieves data from the beginning of the file to the end of the file.

ANS:

7. A(n) _____ file contains data that has not been converted to text.

ANS:

8. A filename _____ is a short sequence of characters that appear at the end of a filename, preceded by a period.

ANS:

9. A(n) _____ gives information about the line number(s) that caused an exception.

ANS:

10. A(n) _____ block includes one or more statements that can potentially raise an exception.

ANS: