Assignment 7

# Q1

The try statement is used to handle exceptions that might occur during the execution of a code block. The try block is followed by one or more except blocks, which are used to handle specific types of exceptions. If an exception occurs in the try block, the corresponding except block will be executed. If no exception occurs, the except blocks will be skipped.

# Q2

try-except: This variation allows us to catch and handle specific exceptions. we can specify one or more except blocks following the try block, each handling a different type of exception. If an exception occurs within the try block, the corresponding exception block is executed to handle the exception.

try-finally: This variation ensures that certain code is always executed, regardless of whether an exception occurs or not. The finally block is placed after the try block and contains code that will be executed whether an exception is raised or not.

# Q3

The raise statement is used to raise an exception. An exception is an event that occurs during the execution of a program that disrupts the normal flow of the program. The raise statement can be used to raise a specific type of exception, or it can be used to raise a generic exception.

# Q4

The assert statement is used to check if a given condition is true. If the condition evaluates to False, an AssertionError is raised. It is typically used for debugging and testing purposes to ensure that certain assumptions or conditions hold true at specific points in the code. The assert statement is similar to the if statement but is used for testing specific conditions that should always be true.

# Q5

The purpose of the with/as statement, also known as a context manager, is to simplify the management of resources, such as files or network connections, by ensuring that they are properly acquired and released. The with statement guarantees that the resource will be cleaned up at the end of the block, regardless of whether an exception occurs or not. It eliminates the need for manual resource management and ensures that resources are released in a timely manner. The with/as statement is similar to the try/finally statement, but it provides a more concise and readable syntax specifically designed for resource management.