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CNIT 15501

Honors Deliverable Week 12

Tuples

Tuples are similar to lists, but they are immutable. This means that tuples can’t be changed after they are initialized.

Creating a tuple is almost identical to creating a list, though it uses parenthesis instead of brackets. Creating a tuple may look like this:

number\_Tuple = (1, 2, 3, 4)

If you see that a tuple is used instead of a list, it is a strong sign that it should not be changed.

Elements in a tuple can be accessed exactly the same way as a list, using bracket notation for index.

Like lists, tuples can have multiple different data types in them, including other tuples.

Because tuples are immutable, the following code would produce a type error:

number\_Tuple = (1, 2, 3, 4)

number\_Tuple[2] = 6

Exceptions

An exception is raised when there is an error in the program. When an exception is raised, the program looks for a way to handle the exception. Below is an example of exception handling:

try:

    user\_input = (int)(input("Enter any integer: "))

    print("Good choice!")

except ValueError:

    print("Please pick an integer")

In the above code, if the user enters an integer, the code continues as normal, and prints “Good choice!”. However, if the user enters something besides an integer, a value error will occur. This causes the except block to happen, so the code print “Please pick and integer”.

Multiple different except blocks can be used for one try block.

Here are a few common exceptions:

ValueError – Invalid value for a function

TypeError – Invalid operation for the data type

IndexError – Invalid index for a list. For example, looking for index 7 on a list with 5 elements.

ZeroDivisionError – Dividing something by 0.

isinstance()

isinstance() has two parameters. The first should be a variable, and the second should be a data type. isinstance will return true if the first parameter is the data type of the second parameter. Otherwise it will return false. Here is an example:

name = "kit"

ret = isinstance(name, str)

In the above example, ret is true, because name is a string.