* Get Squares of all elements in the list
* Sum of Squares of list of integers
* Filter for even numbers using comprehensions
* Compute total sale amount from list of tuples
* Get sum of sale amount considering transactions where sale amount > 500

1. Which Python comprehension is used to get the squares of all elements in a list?

a) List comprehension

b) Dictionary comprehension

c) Set comprehension

d) Generator comprehension

Answer: a) List comprehension

1. What does the following expression calculate?

sum([x\*\*2 for x in [1, 2, 3, 4]])

a) The sum of the squares of all numbers in the list

b) The product of the squares of all numbers in the list

c) The sum of all numbers in the list

d) The product of all numbers in the list

Answer: a) The sum of the squares of all numbers in the list

1. Which Python comprehension can be used to filter for even numbers in a list?

a) List comprehension

b) Dictionary comprehension

c) Set comprehension

d) Generator comprehension

Answer: a) List comprehension

1. Given a list of tuples, each containing a sale amount, which Python comprehension can be used to compute the total sale amount?

a) List comprehension

b) Dictionary comprehension

c) Set comprehension

d) Generator comprehension

Answer: a) List comprehension

1. How can you modify a list comprehension to compute the total sale amount considering only transactions where the sale amount is greater than 500?

a) Add a condition at the end of the comprehension: if x > 500

b) Add a condition at the beginning of the comprehension: if x > 500

c) Use a dictionary comprehension instead

d) Use a generator comprehension instead

Answer: a) Add a condition at the end of the comprehension: if x > 500

1. What is the output of the following list comprehension?

| numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9] even\_numbers = [x for x in numbers if x % 2 == 0] print(even\_numbers) |
| --- |

a. [1, 3, 5, 7, 9]

b. [2, 4, 6, 8]

c. [1, 2, 3, 4, 5, 6, 7, 8, 9]

d. [1, 4, 9]

Answer: b. [2, 4, 6, 8]

1. What is the output of the following dictionary comprehension?

| numbers = [1, 2, 3, 4, 5] squares = {x:x\*x for x in numbers if x > 2} print(squares) |
| --- |

a. {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

b. {3: 9, 4: 16, 5: 25}

c. {1: 1, 2: 4}

d. {9: 3, 16: 4, 25: 5}

Answer: b. {3: 9, 4: 16, 5: 25}

1. What is the output of the following set comprehension?

| words = ['hello', 'world', 'this', 'is', 'python'] vowels\_set = {char for word in words for char in word if char in 'aeiou'} print(vowels\_set) |
| --- |

a. {'a', 'e', 'i', 'o', 'u'}

b. {'a', 'e', 'i', 'o', 'u', 'y'}

c. {'h', 'l', 'w', 'r', 't', 's', 'p', 'n'}

d. {'h', 'l', 'w', 'r', 't', 's', 'p', 'n', 'y'}

Answer: a. {'a', 'e', 'i', 'o', 'u'}

1. What is the syntax for a list comprehension in Python?

a. [expression for item in iterable]

b. (expression for item in iterable)

c. {expression for item in iterable}

d. expression for item in iterable

Answer: a. [expression for item in iterable]

1. What is the output of the following list comprehension?

| sales = [(100, 'John'), (200, 'Mary'), (300, 'John'), (400, 'Mary')] unique\_names = list(set(name for amount, name in sales)) print(unique\_names) |
| --- |

a. ['John', 'Mary']

b. ['Mary', 'John']

c. ['John', 'Mary', 'John', 'Mary']

d. ['100', '200', '300', '400']

Answer: a. ['John', 'Mary']