

Silicon Institute of Technology
Skill Project Lab
Lab Assignment - 7
(Python Programs using Function)

August 31, 2025

1. Write a function `add(a, b)` that returns the sum of two numbers.
2. Write a function `power(base, exponent=2)` that returns the power of a number.
3. Write a function that takes two numbers and returns both their sum and product.
4. Write a recursive function `factorial(n)` that returns the factorial of a number.
5. Write a function `is_palindrome(word)` that returns `True` if the word is a palindrome.
6. Write a function `apply(func, x, y)` that takes another function `func` and two numbers, and applies `func` to them.
7. Write a function that takes a comparison function and two numbers, and returns the larger number.
8. Write a program which will use `map()` to square all numbers in a list.
9. Given a list of words, use `map()` to convert each word to uppercase.
10. Given a list of temperatures in Celsius, use `map()` to convert them to Fahrenheit.
11. Write a program which will use `reduce()` to find the product of all numbers in a list.
12. Write a program which will use `reduce()` to concatenate a list of strings into one string.
13. Write a program which will use `filter()` to get only even numbers from a list.
14. Write a program which will use `Use filter()` to extract words longer than 5 characters from a list.
15. Create a function `outer()` that contains an inner function `greet()` which prints "Hello".
16. Write a function `calculator()` with inner functions for addition, subtraction, multiplication, and division.

17. Write a function `make_multiplier(n)` that returns another function to multiply numbers by `n`.
18. Write a function `power_of(x)` that returns another function to raise numbers to the power of `x`.
19. Write a lambda function to calculate the square of a given number.
20. Given a list of words `["apple", "banana", "kiwi", "strawberry"]`, use `max()` with a lambda function to find the longest word.