

## Artificial Intelligence Lab, B.Tech 4th Semester

### Instructions

1. This is only for practice. No need to submit it.
2. Complete it by 12:00 PM today. Your completion will be reviewed by the Teaching Assistants.

### Practice Assignment 2

1. (a) Write a Python program to find the area of a circle given its radius.  
(b) Create a program to check if a given number is even or odd.  
(c) Develop a program to convert temperature from Celsius to Fahrenheit and vice versa.
2. (a) Write a program that reverses a given string.  
(b) Create a program that counts the number of vowels in a given string.  
(c) Develop a program that checks if a given word is a palindrome.
3. (a) Write a program to find the sum of all elements in a list.  
(b) Create a program to find the largest element in a list.  
(c) Develop a program to remove duplicates from a list.
4. (a) Write a program to read a text file and count the number of words.  
(b) Create a program to copy the contents of one file to another.  
(c) Develop a program to search for a specific pattern in a text file.
5. (a) Write a program that calculates the factorial of a given number using a function.  
(b) Create a program that generates Fibonacci sequence up to a specified term using a function.  
(c) Develop a program that checks if a number is prime using a function.
6. Below are the two lists. Write a Python program to convert them into a dictionary in a way that item from list1 is the key and item from list2 is the value  
keys = ['Ten', 'Twenty', 'Thirty'] values = [10, 20, 30]
7. Write a Python program
  - i. Create a tuple of mixed data type and print it.
  - ii. Create a tuple with the repetition of the words "AI Lab" 3 times.
  - iii. Create two tuples and merge them.