**Lab0 Python exercises**

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URL Github repository: <https://github.com/JerryHuang0424/Project-Semester-3.git>

1. Write the python code which prompts the user for a number and outputs twice the entered number

**The code:**

*# Enter a Number and output twice its value in Python*

*# Author Jerry Huang*

*# Using user input*

*# taking user input*

a = input("Enter first numer:")

res =int(a) \* 2

print(res)

1. Write the python code which prompts the user for their name. Output their name in all capital letters. (The upper() method will convert all characters of a string to uppercase)

**The code:**

*# Enter the user name and output the name in upper case*

*# Author Jerry Huang*

*# Prompt the user for their name*

name = input("Please enter your name: ")

*# Convert the name to uppercase and print it*

print("Your name in uppercase is:", name.upper())

1. Write the python code which selects a random between 10 and 20 number once. Prompt the user for input until they guess the random number. Print congratulation once they guess it.

**The code:**

import random

*# Generate a random number between 10 and 20*

random\_number = random.randint(10, 20)

print("Guess a number between 10 and 20.")

*# Loop until the user guesses the correct number*

while True:

*# Prompt the user for input*

    user\_guess = int(input("Enter your guess: "))

*# Check if the guess is correct*

    if user\_guess == random\_number:

        print("Congratulations! You guessed the correct number:", random\_number)

        break

    else:

        print("Wrong guess. Try again!")

1. Write the python code which prompts the user for their age. If they are 19 or younger inform them that qualify for student discounts. If they are between 20 and 54 inform them that they qualify for no age discounts. If they are 55 or over inform them that they can receive senior discounts.

**The code:**

*# Prompt the user for their age*

age = int(input("Please enter your age: "))

*# Check the age and provide the appropriate discount information*

if age <= 19:

    print("You qualify for student discounts.")

elif 20 <= age <= 54:

    print("You qualify for no age discounts.")

else:

    print("You can receive senior discounts.")

1. Write a function which takes in a number and returns the factorial of that number using a while loop. Print the result

**The code:**

*# Take in a number and returns the factorial of that number*

*# Author :Jerry Huang*

*#Using a while loop*

*#The function of calculate the factorial*

def factorial(number):

        result = 1

        while number > 1:

                result \*= number

                number -= 1

        return result

num = int(input("Please enter a number larger that 1: "))

fac = factorial(num)

print(fac)

1. Write the same function using a **for loop**.

**The code:**

*# Take in a number and returns the factorial of that number*

*# Author :Jerry Huang*

*#Using a for loop*

*#The function of calculate the factorial*

def factorial(number):

 result = 1

 for i in range(1, number+1):

  result \*= i

 return result

*# Let the user to enter a number*

num = int(input("Please enter a number larger that 1: "))

*# Calling the function*

fac = factorial(num)

*# print the result*

print(fac)

1. Create a new list called studentNames with the following names: Lisa, Liam, Leo, Larry, and Linda. Write the python code using a for loop to print each of these first names followed by the last name “Evans”. Example Lisa Evans, Liam Evans, Leo Evans, etc. Then ask the user to add another name to the list. Add this name and reprint the list with the last names

The code:

*#This file is used to store the students whose last name are all Evans*

*#Author :Jerry Huang*

*#First create a list stored some of the students.*

*# Create a list*

StudentsList = ["Lisa", "Liam", "Leo", "Larry", "Linda"]

for i in range(0,len(StudentsList)):

        print(StudentsList[i] + " " + "Evans")

newName = input("Please enter the new name: ")

StudentsList.append(newName)

for i in range(0, len(StudentsList)):

        print(StudentsList[i] + " " + "Evans")