Software Engineering: Assignment 1

Assignment 1.py

"""

Program Title : Near Misses

Name of the file : Assignment 1

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Explanation of the Program : the Program searchs for  near miss with the value of n and K. the n value should be between 2 and 12 , and k value should be

                                greater than 10. if theses two conditions are statisfied then it will search for near misses. it works on the formula given

                                in the requirement to calculate the near misses

"""

# the n and k values are set to be 1

n\_value = 1

k\_value = 1

def main1():

    while True:

        # getting input from the user

        n\_value = int(input("Enter value for n such that 2 < n < 12: "))

        # the loop has been create to check the condition

        if ((n\_value <= 2) or (n\_value >= 12)):

            print("Invalid input! enter a number between 2 and 12")

        else:

                # getting k value from the user

                k\_value= int(input("Enter upper limit k for x and y (k > 10): "))

                if k\_value >= 10:

                    past\_miss=None

                    for x in range(10, k\_value+1):

                        for y in range(x,k\_value+1):

                            pow\_var = pow(x, n\_value) + pow(y, n\_value)

                            z = int(pow(pow\_var, 1/n\_value))

                            pow\_of\_z = pow(z, n\_value)

                            pow\_z = pow(z+1, n\_value)

                            miss\_value = min( pow\_var - pow\_of\_z, pow\_z - pow\_var)

                            miss\_rel = miss\_value/pow\_var

                            rel\_mis = miss\_rel

                            print("\nx = {} y = {}  z = {}  Miss = {}  Relative Miss = {}%".format(x, y, z, miss\_value, round(rel\_mis\*100,2)))

                    break

                else:

                    print("Invalid input!!!! enter a number greater than 10")

main1()

Output

