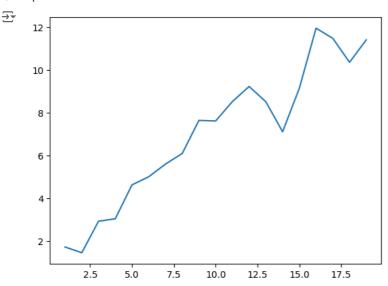
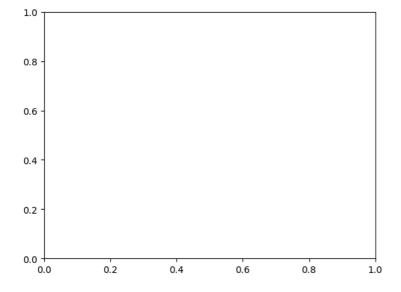
```
# Alineamiento de secuencias
from google.colab import drive
drive.mount("/content/drive")
with open ("/content/drive/MyDrive/examen.fasta/sequence (1).txt", "r") as archivo:
 secuencia = archivo.read ()
 print (secuencia)
    Mounted at /content/drive
    >lcl|MG674053.1_cds_AXR85408.1_1 [protein=beta-tubulin] [frame=3] [protein_id=AXR85408.1] [location=join(<1..13,127..168
    GCTGCTTTCTGGCAGCAGATCTCAGGCGAGCACGGCCTGGACAGCAATGGCGTGTACAACGGCACGTCGG
    AGCTCCAGCTGGAGCGCATGAGCGTCTACTTCAACGAGGCTTCTGGCAACAAGTACGTCCCGCGTGCTGT
    {\tt CCTGGTCGATCTCGAGCCCGGTACCATGGACGCCGTCCGCGCCGGTCCTTTCGGCCAGCTTTTCCGCCCCC}
    {\sf GACAACTTTGTCTTCGGCCAGTCGGGTGCTGGCAACAACTGGGCCAAGGGTCAC}
from google.colab import drive
drive.mount("/content/drive")
with open ("/content/drive/MyDrive/examen.fasta/sequence (2).txt", "r") as archivo:
 secuencia = archivo.read ()
 print (secuencia)
Fr Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remoun
    >MZ436942.1 Harringtonia aquacate isolate C2964 large subunit ribosomal RNA gene, partial sequence
    CAATAAGCGGAGGAAAAGAAACCAACAGGGATTGCCCCAGTAACGGCGAGTGAAGCGGCAACAGCTCAAA
    \tt CTTCGACGAGTCGAGTAGTTTGGGAATGCTGCTCAAAATGGGAGGTAAATTTCTTCTAAAGCTAAATACC
    GGCCAGAGACCGATAGCGCACAAGTAGAGTGATCGAAAGATGAAAAGCACTTTGAAAAGAGGGGTTAAACA
    GTACGTGAAATTGCTGAAAGGGAAGCGCCTGTGGCCAGACTTGCGCCCCGCGGACCACCCGGCGCCCGCG
    CCGGGGCACGCCGGGGGCCAGGCCAGCATCGGCTCTCCCAGGGGGACAAAGGCCGCGGGAACGTAGCG
    import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
y_values_random = np.random.randn(19)
y_values_sequence = np.array([2.0, 2.5, 3.0, 3.8, 4.2, 4.8, 5.1, 6.0, 6.3, 7.0, 7.5, 8.2, 8.0, 8.7, 9.5, 10.0, 9.8, 10.5, 11
y_values = y_values_random + y_values_sequence
df = pd.DataFrame({"x_values": range(1, 20), "y_values": y_values})
print(df)
        x_values
\overline{2}
                  y_values
    0
                  1.711591
              2
                  1.444180
    1
    2
              3
                  2.919367
                  3.032061
    3
    4
                  4.619543
    5
              6
                  5.001370
    6
              7
                  5.595208
    7
              8
                  6.089322
    8
              9
                  7.639043
    9
             10
                  7.612865
    10
             11
                  8.522435
    11
             12
                  9.228150
    12
             13
                  8.511664
    13
             14
                  7.107254
                  9.143976
    14
             15
    15
             16
                 11.956725
    16
             17
                 11.481612
             18
                 10.361603
    17
                 11.409991
    18
             19
plt.plot( "x_values", "y_values", data=df, linestyle="solid")
plt.show()
```



```
AttributeError Traceback (most recent call last)
<ipython-input-48-2c95d792b1e4> in <cell line: 1>()
----> 1 plt.plot( "x_values", "y_values", data=df, linestyle="none", show="o")
2 plt.show()
```

AttributeError: Line2D.set() got an unexpected keyword argument 'show'



Pasos siguientes: Explicar error

!pip install biopython

```
→ Collecting biopython
```

Installing collected packages: biopython
Successfully installed biopython-1.84

```
from Bio import pairwise2
from Bio.Seq import Seq
from Bio.pairwise2 import format_alignment
```

🚁 /usr/local/lib/python3.10/dist-packages/Bio/pairwise2.py:278: BiopythonDeprecationWarning: Bio.pairwise2 has been deprec warnings.warn(

```
#SECUENCIAS
```

```
seq1 = Seq("atctgtgggatcccgagaac")
seq2 = Seq("atgggttctcgggatcccac")
alignments = pairwise2.align.globalxx(seq1, seq2)
for match in alignments:
 print(match)
```

Alignment(seqA='atc---tgt---gggatcccgagaac', seqB='at-gggt-tctcgggatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='atc--tgt---gggatcccgagaac', seqB='atgggt-tctcgggatccc----ac', score=14.0, start=0, end=25)
Alignment(seqA='at--ctgt---gggatcccgagaac', seqB='atgggt-tctcgggatccc----ac', score=14.0, start=0, end=25)
Alignment(seqA='at--ctgt---gggatcccgagaac', seqB='atgggt-tctcgggatccc----ac', score=14.0, start=0, end=25)
Alignment(seqA='atctg-----t-gggatcccgagaac', seqB='a--tgggttctcgggatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='atctg-----t-gggatcccgagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='atct-g----t-gggatcccgagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='atctg----t-gggatcccgagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=25)
Alignment(seqA='atctg----t-gggatcccgagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=25)
Alignment(seqA='atct--g---t-gggatcccgagaac', seqB='a--tgggttctcgggatccc----ac', score=14.0, start=0, end=25)
Alignment(seqA='atct--g---t-gggatcccgagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='atct--g---t-gggatcccagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='atct--g---t-gggatcccagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='atct--g---t-ggatcccagaac', seqB='at--gggttctcgggatccc----ac', score=14.0, start=0, end=26) $\label{eq:local_seq} A lignment (seq A='atc---tgt---gggatcccgagaac', seq B='at-gggt-tctcgggatccc----ac', score=14.0, start=0, end=26) \\$ seqB='at-gggttctcgggatccc---ac', score=14.0, start=0, end=25)
seqB='atg-ggttctcgggatccc---ac', score=14.0, start=0, end=25) Alignment(seqA='atct-g---t-gggatcccgagaac', Alignment(seqA='atct-g---t-gggatcccgagaac', Alignment(seqA='atct-g---t-gggatcccgagaac', seqB='atg-ggttctcgggatccc----ac', score=14.0, start=0, enu=25, seqB='at-gggttctcgggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24) seqB='atggg-gttctcgggatccc----ac', score=14.0, start=0, end=25), seqB='at-gggt-tctcgggatccc----ac', score=14.0, start=0, end=26) seqB='atgggt-tctcgggatccc----ac', score=14.0, start=0, end=25), seqB='atgggt-tctcgggatccc----ac', score=14.0, start=0, end=25), seqB='atgggt-tctcgggatccc----ac', score=14.0, start=0, end=25) seqR='at-nagttctcggatccc----ac', score=14.0, start=0, end=25) Alignment(seqA='atc-tg---t-gggatcccgagaac', Alignment(seqA='atctg---t-gggatcccgagaac', Alignment(seqA='at-ctg---t-gggatcccgagaac' Alignment(seqA='atc---tg--t-gggatcccgagaac Alignment(seqA='atc--tg--t-gggatcccgagaac', Alignment(seqA='at-c-tg--t-gggatcccgagaac' Alignment(seqA='at--ctg--t-gggatcccgagaac' Alignment(seqA='atc---tg-t-gggatcccgagaac seqB='at-gggttctcgggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24) Alignment(seqA='atc--tg-t-gggatcccgagaac', seqB='atgggttctcgggatccc---ac', score=14.0, start=0, end=24)
seqB='atgggttctcgggatccc---ac', score=14.0, start=0, end=24) Alignment(seqA='at-c-tg-t-gggatcccgagaac', Alignment(seqA='at--ctg-t-gggatcccgagaac', seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24)
, seqB='at-gggtt-ctcgggatccc----ac', score=14.0, start=0, end=26)
seqB='atgggtt-ctcgggatccc----ac', score=14.0, start=0, end=25)
seqB='atgggtt-ctcgggatccc----ac', score=14.0, start=0, end=25)
seqB='atgggtt-ctcgggatccc----ac', score=14.0, start=0, end=25)
seqB='atgggtt-ctcgggatccc----ac', score=14.0, start=0, end=25)
seqB='at-gggttctcgggatccc----ac', score=14.0, start=0, end=25)
seqB='at-ggttctcgggatccc----ac', score=14.0, start=0, end=25)
seqB='at-ggttctcgggatccc----ac'. score=14.0, start=0, end=25) Alignment(seqA='at-c--tg-t-gggatcccgagaac' Alignment(seqA='at--c-tg-t-gggatcccgagaac' Alignment(seqA='at---ctg-t-gggatcccgagaac' Alignment(seqA='a----tctg-t-gggatcccgagaac Alignment(seqA='atc---t-gt-gggatcccgagaac', seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24)
seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24) Alignment(seqA='atc--t-gt-gggatcccgagaac' Alignment(seqA='at-c-t-gt-gggatcccgagaac' seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24)
, seqB='at-gggttctcgggatccc----ac', score=14.0, start=0, end=25) Alignment(seqA='at--ct-gt-gggatcccgagaac' Alignment(seqA='atc---tgt-gggatcccgagaac' , seqB='at-gggttctcgggatccc----ac', score=14.0, start=0, end=25) seqB='atggttctcgggatccc----ac', score=14.0, start=0, end=24) seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24) seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24) seqB='atgggttctcgggatccc----ac', score=14.0, start=0, end=24) seqB='atgggt-tctcgggatccc----ac', score=14.0, start=0, end=25) ', seqB='atgggttc--tcgggatccc----ac', score=14.0, start=0, end=26) ', seqB='atgggttc--tcgggatccc----ac', score=14.0, start=0, end=26) ', seqB='atgggttc--tcgggatccc----ac', score=14.0, start=0, end=26) ', seqB='atgggttc--cgggatccc----ac', score=14.0, start=0, end=26) ' seqB='atgggttct--cgggatccc----ac', score=14.0, start=0, end=26) ' seqB='atgggttct--cgggatccc----ac', score=14.0, start=0, end=26) Alignment(seqA='atc---tgt-gggatcccgagaac', Alignment(seqA='at-c--tgt-gggatcccgagaac' Alignment(seqA='at--c-tgt-gggatcccgagaac' Alignment(seqA='at---ctgt-gggatcccgagaac', Alignment(seqA='a----tctgt-gggatcccgagaac' Alignment(segA='at----ctgt-gggatcccgagaac Alignment(seqA='a----t-ctgt-gggatcccgagaac' Alignment(seqA='a----tctgt-gggatcccgagaac' Alignment(seqA='at----ctgt-gggatcccgagaac' seqB='atgggttct--cgggatccc---ac', score=14.0, start=0, end=26)
seqB='atgggttct--cgggatccc---ac', score=14.0, start=0, end=26) Alignment(seqA='a----t-ctgt-gggatcccgagaac', Alignment(seqA='a----tctgt-gggatcccgagaac', Alignment(seqA='at-----tctgtgggatcccgagaac', , seqB='atgggttct--cgggatccc----ac', score=14.0, start=0, end=26) seqB='atgggttct-cgggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttct-cgggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttct-cgggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttctc-gggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttctc-gggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttctc-gggatccc----ac', score=14.0, start=0, end=25) seqB='atgggttctcg-ggatccc----ac', score=14.0, start=0, end=26) seqB='atgggttctcg--ggatccc----ac', score=14.0, start=0, end=26) Alignment(seqA='a----t-ctgtgggatcccgagaac', Alignment(seqA='a----tctgtgggatcccgagaac', Alignment(seqA='at----ctgtgggatcccgagaac' Alignment(segA='a---t-ctgtgggatcccgagaac' Alignment(seqA='a-----tctgtgggatcccgagaac', Alignment(seqA='at-----ct-gtgggatcccgagaac' seqB='atgggttctcg--ggatccc----ac', score=14.0, start=0, end=26)
seqB='atgggttctcg--ggatccc----ac', score=14.0, start=0, end=26) Alignment(seqA='a----t-ct-gtgggatcccgagaac', Alignment(seqA='a-----tct-gtgggatcccgagaac', Alignment(seqA='at----ct-gtgggatcccgagaac', seqB='atgggttctcg-g-gatccc----ac', score=14.0, start=0, end=26)
Alignment(seqA='a----t-ct-gtgggatcccgagaac', seqB='atgggttctcg-g-gatccc----ac', score=14.0, start=0, end=26)

Empieza a programar o a crear código con IA.