1. Ordenar las siguientes funciones de menor a mayor orden:

1. n	5. 2^n	9. $n \log n$	13. $\ln n$
2. $n - n^3 + 7n^5$	6. $\log n$	10. $\sqrt{n}$	14. e^n
3. $n^2 + \log n$	7. n^2	11. 2^{n-1}	15. $\log \log n$
4. n^3	8. $(\log n)^2$	12. $n!$	16. $n^{1+\varepsilon}, 0 < \varepsilon < 1$

2. Para las siguientes funciones, determinar el resultado como una función de *n* y representar el peor caso de ejecución con notación Big Oh:

```
function mystery(n)
  r := 0
  for i := 1 to n - 1 do
    for j := i + 1 to n do
      for k := 1 to j do
        r := r + 1
  return(r)
```

```
function pesky(n)
  r := 0
  for i := 1 to n do
    for j := 1 to i do
      for k := j to i + j do
        r := r + 1
  return(r)
```

```
function prestiferous(n)
  r := 0
  for i := 1 to n do
    for j := 1 to i do
      for k := j to i + j do
        for l := 1 to i + j - k do
          r := r + 1
  return(r)
```

$$\sum_{x=1}^{n} x = \frac{1}{2} n(n+1) \qquad \sum_{j=i+1}^{n} j = \sum_{j=1}^{n} j - \sum_{j=1}^{i} j \qquad \sum_{x=1}^{n} x^2 = \frac{1}{6} n(n+1)(2n+1)$$

3. Implementar el algoritmo de *insertion sort* para ordenar en orden descendente en vez de ascendente.

1. Ordenar las siguientes funciones de menor a mayor orden:
   - 15, 8, 6, 9, 13, 10, 11, 12, 1, 16, 3, 14, 4, 5, 2

2. Function mystery (n)

Cost	Time
C_1	1
C_2	n - 1
C_3	n - 1 (n)
C_4	(n - 1) / n ($\sum_{k=1}^{j} t_k$)
C_5	(n - 1) / n ($\sum_{k=1}^{j} t_k$ - 1)

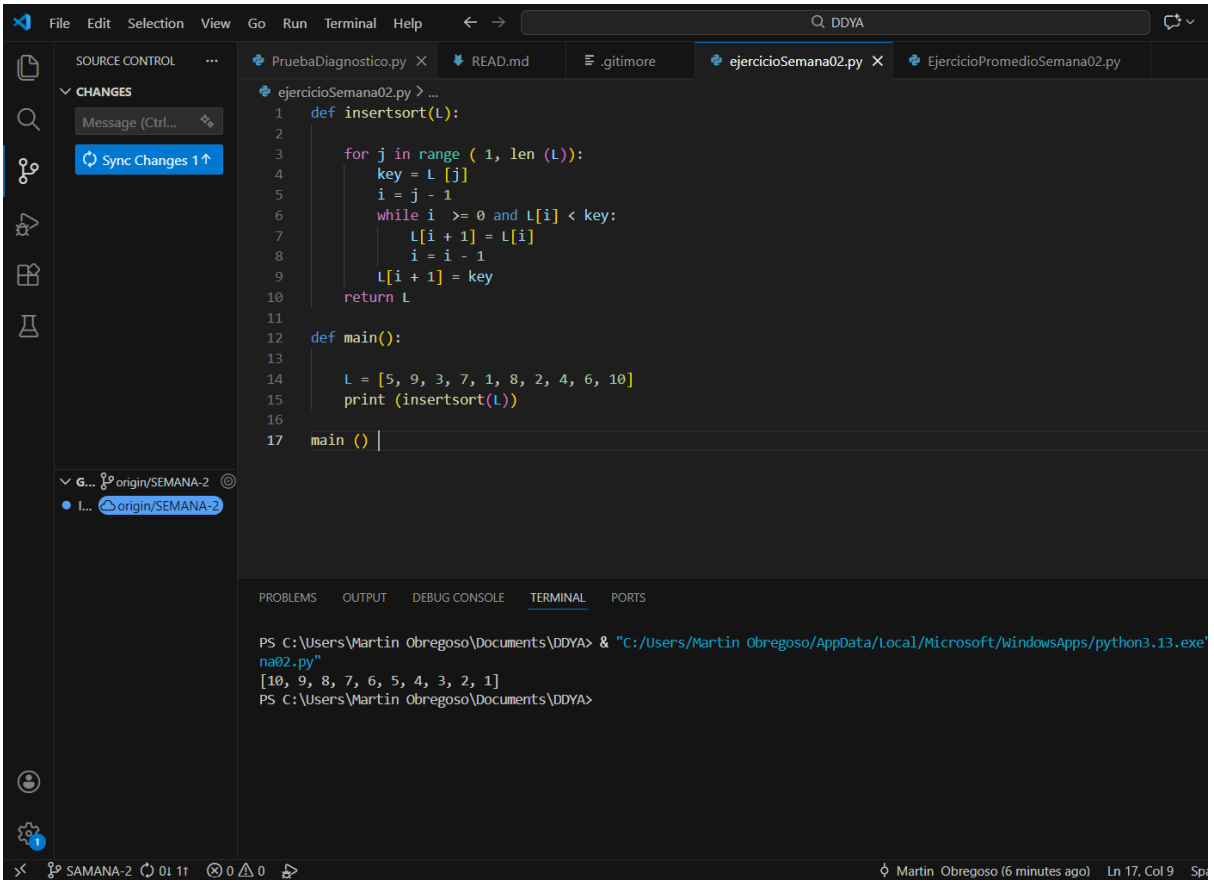
Function pesky (n)

Cost	Time
C_1	1
C_2	n
C_3	(n - 1) ($\sum_{j=1}^{i} t_j$)
C_4	(n - 1) ($\sum_{j=1}^{i} t_j$ - 1) ($\sum_{k=j}^{i+j} t_k$)
C_5	(n - 1) ($\sum_{j=1}^{i} t_j$ - 1) ($\sum_{k=j}^{i+j} t_k$ - 1)

Function prestiferous (n)

Cost	Time
C_1	1
C_2	n - 1
C_3	n - 1 (n)
C_4	(n - 1) $\sum_{j=1}^{i} t_k$
C_5	(n - 1) ($\sum_{j=1}^{i} t_k$ - 1) $\sum_{l=1}^{i+j-k} t_l$
C_6	(n - 1) ($\sum_{j=1}^{i} t_k$ - 1) ($\sum_{l=1}^{i+j-k} t_l$ - 1)

3.


File Edit Selection View Go Run Terminal Help
DDYA
SOURCE CONTROL
CHANGES
Message (Ctrl...
Sync Changes 1
PruebaDiagnostico.py
READ.md
.gitimore
ejercicioSemana02.py
EjercicioPromedioSemana02.py
ejercicioSemana02.py > ...
def insertsort(L):
for j in range (1, len (L)):
key = L [j]
i = j - 1
while i >= 0 and L[i] < key:
L[i + 1] = L[i]
i = i - 1
L[i + 1] = key
return L
def main():
L = [5, 9, 3, 7, 1, 8, 2, 4, 6, 10]
print (insertsort(L))
main ()
origin/SEMANA-2
origin/SEMANA-2
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\Martin Obregoso\Documents\DDYA> & "C:/Users/Martin Obregoso/AppData/Local/Microsoft/WindowsApps/python3.13.exe"
na02.py"
[10, 9, 8, 7, 6, 5, 4, 3, 2, 1]
PS C:\Users\Martin Obregoso\Documents\DDYA>
SAMANA-2
Martin Obregoso (6 minutes ago)
Ln 17, Col 9