

Practica 10

Brute force

```
main.py
1 import itertools
2 import string
3
4 def brute_force_password(target, length):
5     chars = string.digits
6
7     print(f"Buscando contraseña de {length} dígitos...")
8     contador = 0
9
10    for combo in itertools.product(chars, repeat=length):
11        attempt = "".join(combo)
12        contador += 1
13
14        if attempt == target:
15            print(f"Contraseña encontrada: {attempt}")
16            print(f"Intentos realizados: {contador}")
17            return attempt
18
19    print("No encontrada.")
20    return None
21
22
23 if __name__ == "__main__":
24     brute_force_password("1234", 4)
25
26
```

Buscando contraseña de 4 dígitos...
Contraseña encontrada: 1234
Intentos realizados: 1235

...Program finished with exit code 0
Press ENTER to exit console.

Greedy

```
main.py
1 def greedy_change(amount, coins):
2     coins = sorted(coins, reverse=True)
3     result = []
4
5     print(f"Cantidad: {amount}")
6     print(f"Monedas disponibles: {coins}")
7
8     for c in coins:
9         while amount >= c:
10             amount -= c
11             result.append(c)
12
13     return result
14
15
16 if __name__ == "__main__":
17     coins = [50, 20, 10, 5, 2, 1]
18     amount = 87
19     resultado = greedy_change(amount, coins)
20
21     print("Monedas entregadas:", resultado)
22     print("Total de monedas:", len(resultado))
23
```

```
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Cantidad: 87
Monedas disponibles: [50, 20, 10, 5, 2, 1]
Moneda entregadas: [50, 20, 10, 5, 2]
Total de monedas: 5
```

```
...Program finished with exit code 0
Press ENTER to exit console.
```

Insertion sort

```
main.py
1 def greedy_change(amount, coins):
2     coins = sorted(coins, reverse=True)
3     result = []
4
5     print(f"Cantidad: {amount}")
6     print(f"Monedas disponibles: {coins}")
7
8     for c in coins:
9         while amount >= c:
10             amount -= c
11             result.append(c)
12
13     return result
14
15
16 if __name__ == "__main__":
17     coins = [50, 20, 10, 5, 2, 1]
18     amount = 87
19     resultado = greedy_change(amount, coins)
20
21     print("Monedas entregadas:", resultado)
22     print("Total de monedas:", len(resultado))
23
```

```
Cantidad: 87
Monedas disponibles: [50, 20, 10, 5, 2, 1]
Moneda entregadas: [50, 20, 10, 5, 2]
Total de monedas: 5
```

```
...Program finished with exit code 0
Press ENTER to exit console.
```