Task1:

```python
t1 = (10, 20, "Python", "Code")

t2 = ("A", "B")


print(t1[0])


print(t2[-1])


l = list(t1)

l[-1] = "Program"

t1 = tuple(l)

print(t1)


a, b, c, d = t1

print(a, b, c, d)


t = t1 + t2

print(t)


print(t[1:4])
```

Output:

```
PS D:\Internship\Day5> python task1.py
10
B
(10, 20, 'Python', 'Program')
10 20 Python Program
(10, 20, 'Python', 'Program', 'A', 'B')
(20, 'Python', 'Program')
```

Task2:

```python
t1 = (1, 2, 3)


# 7. Multiply the tuple by 3

result = t1 * 3

print(result)
```

Output:

```
● PS D:\Internship\Day5> python task2.py
  (1, 2, 3, 1, 2, 3, 1, 2, 3)
```

Task3:

my_set = {10, 20, 30, 40}

1. Print the given set

print(my_set)

2. Check whether 20 is present in my_set

print(20 in my_set)

3. Find and print the length of my_set

print(len(my_set))

4. Add 50 to my_set.

my_set.add(50)

print(my_set)

5. Remove 30 from my_set.

my_set.remove(30)

print(my_set)

6. Remove an element using discard() and note the output.

my_set.discard(20)

print(my_set)

7. Remove a random element from my_set.

my_set.pop()

print(my_set)

```python
# 8. Loop through my_set and print each element.

for item in my_set:

    print(item)


# 9. Clear all elements from my_set

my_set.clear()

print(my_set)
```

Output:

```
PS D:\Internship\Day5> python task3.py
{40, 10, 20, 30}
True
4
{40, 10, 50, 20, 30}
{40, 10, 50, 20}
{40, 10, 50}
{10, 50}
10
50
set()
```

Task4:

```python
set1 = {1, 2, 3}
set2 = {3, 4, 5, 6}


# 10. Elements in set1 but not in set2

print(set1 - set2)


# 11. Elements in either set1 or set2 but not in both (symmetric difference)

print(set1 ^ set2)


# 12. Add all items from set2 into set1

set1.update(set2)

print(set1)


# 13. Print all unique elements from both set1 and set2

print(set1 | set2)
```
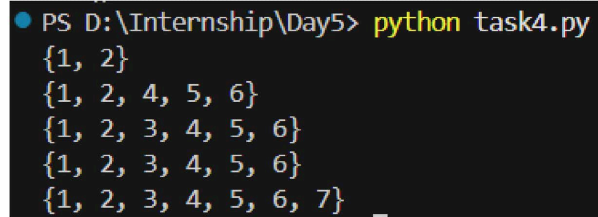
```python
# 14. Add 7 to set1
set1.add(7)
print(set1)
```

Output:

```
PS D:\Internship\Day5> python task4.py
{1, 2}
{1, 2, 4, 5, 6}
{1, 2, 3, 4, 5, 6}
{1, 2, 3, 4, 5, 6}
{1, 2, 3, 4, 5, 6, 7}
```

Task5:

```python
student = {
    "name": "Anu",
    "age": 20,
    "course": "Python"
}


# 1. Print all keys, values, and items
print(student.keys())
print(student.values())
print(student.items())


# 2. Access the value of "name"
print(student["name"])


# 3. Access the value of "course" using get()
print(student.get("course"))


# 4. Add a new key "marks" with value 85
student["marks"] = 85
print(student)
```

```
# 5. Update the value of "age" to 21

student["age"] = 21

print(student)


# 6. Remove "course" using pop()

student.pop("course")

print(student)


# 7. Remove the last inserted item using popitem()

student.popitem()

print(student)


# 8. Loop through the dictionary and print keys and values

for key, value in student.items():

    print(key, ":", value)
```

Output:

```
PS D:\Internship\Day5> python task5.py
dict_keys(['name', 'age', 'course'])
dict_values(['Anu', 20, 'Python'])
dict_items([('name', 'Anu'), ('age', 20), ('course', 'Python')])
Anu
Python
{'name': 'Anu', 'age': 20, 'course': 'Python', 'marks': 85}
{'name': 'Anu', 'age': 21, 'course': 'Python', 'marks': 85}
{'name': 'Anu', 'age': 21, 'marks': 85}
{'name': 'Anu', 'age': 21}
name : Anu
age : 21
```

Task6:

```
students = {

    "student1": {"name": "Anu", "age": 20},

    "student2": {"name": "Ravi", "age": 21}

}


# 9. Print the complete nested dictionary

print(students)
```

```python
# 10. Create a copy of the students dictionary

students_copy = students.copy()

print(students_copy)
```

Output:

```
PS D:\Internship\Day5> python task6.py
{'student1': {'name': 'Anu', 'age': 20}, 'student2': {'name': 'Ravi', 'age': 21}}
{'student1': {'name': 'Anu', 'age': 20}, 'student2': {'name': 'Ravi', 'age': 21}}
```

Task7:

```python
employee = {
    "emp_id": 101,
    "name": "Kiran",
    "department": "HR",
    "salary": 35000
}


# 13. Display all keys

print(employee.keys())


# 14. Display all values

print(employee.values())


# 15. Display all key-value pairs

print(employee.items())


# 16. Access and print the value of "name"

print(employee["name"])


# 17. Update the "salary" to 40000

employee["salary"] = 40000

print(employee)
```

Output:

```
PS D:\Internship\Day5> python task7.py
dict_keys(['emp_id', 'name', 'department', 'salary'])
dict_values([101, 'Kiran', 'HR', 35000])
dict_items([('emp_id', 101), ('name', 'Kiran'), ('department', 'HR'), ('salary', 35000)])
Kiran
{'emp_id': 101, 'name': 'Kiran', 'department': 'HR', 'salary': 40000}
```