

CSI 160 Python Programming

Activity 1: Variables, Data types, Operators

What is the output of the following code?

```
age = 30
print("Value:", age)
print("Type:", type(age))
years_until_retirement = 65 - age
print("Years until retirement:", years_until_retirement)
```

Value: 30
Type: int
Years until retirement: 35

```
temperature = 72.5
print("Value:", temperature)
print("Type:", type(temperature))
temp_fahrenheit_to_celsius = (temperature - 32) * 5 / 9
print("Temperature in °C:", temp_fahrenheit_to_celsius)
```

Value: 72.5
Type: float
 $(72.5 - 32) * 5 / 9 = 21.94^{\circ}\text{C}$

```
name = "Alice"
print("Value:", name)
print("Type:", type(name))
greeting = "Hello, " + name + "!"
print(greeting)
```

Value: Alice
Type: string
greeting: Hello Alice!
string concatenation

```
is_online = True
print("Value:", is_online)
print("Type:", type(is_online))
can_access = is_online and (age >= 18)
print("Can access content:", can_access)
```

Value: True
Type: boolean
can_access: True
True and True = True

and → if one of the operand is False the o/p is False

or → if one of the operand is True, the o/p is True.

```
age = 23
years_of_experience = 5
projects_completed = 12
average_score = 87.5
```

```
is_eligible_for_bonus = (
    (projects_completed > 10)
    and (average_score >= 85.0)
    and not (years_of_experience < 3)
)
```

```
print("Eligible for bonus?", is_eligible_for_bonus)
```

```
num_1 = 4
num_2 = 9
num_3 = 16
```

```
complex_condition = (
    ((num_1 + num_2) * 2) < num_3
    or ((num_3 // num_2) == num_1)
    ) and ((num_2 % num_1) != 0)
```

```
print("Complex condition result:", complex_condition)
```

$(12 > 10)$ and $(87.5 \geq 85)$
and not $(5 < 3)$

True and True and True
True and True and True

not False

True

$22 < 16 \rightarrow \text{False}$

$((4 + 7) * 2 < 16)$ or $1 == 4 \rightarrow \text{False}$

$((16 // 9) == 4)$ and $((9 \% 4) != 0)$

$(1 != 0)$
True

False or False and True \rightarrow False

False

False or False
False