

Applied Debugging and Code Analysis

Based on Lectures 1–5
CS1010, Finessefleet Foundation

Instructions

Each of the following code snippets contains one or more bugs. Read the code carefully, identify the problem(s), and correct them. These exercises cover Lectures 1 to 5 (Intro to Python, Syntax, Variables, Operators, and Control Structures).

Debugging Tasks

1. Age Classification

```
age = input("Enter your age")
if age >= 18
    print("Adult")
else
    print("Minor")
```

2. Sum of Numbers in Range

```
start = int(input("Enter start number: "))
end = int(input("Enter end number: "))
total = 0
for i in range(start, end)
    total = total + i
print("Sum is: " + total)
```

3. Even or Odd Detector

```
num = input("Enter a number: ")
if num % 2 = 0:
    print("Even number")
else:
    print("Odd number")
```

4. Fahrenheit to Celsius Converter

```
f = input("Enter temperature in Fahrenheit: ")
c = (f - 32) * 5 / 9
print("Celsius is: ", c)
```

5. Factorial Calculator

```
n = int(input("Enter a number: "))
fact = 1
for i in range(1, n)
    fact *= i
print("Factorial is " + fact)
```

6. Leap Year Checker

```
year = int(input("Enter year: "))
if year % 4 == 0 and year % 100 != 0 or year % 400 == 0:
    print(year, "is a Leap year")
else:
    print(year, "is not a Leap year")
```

7. Max of Three Numbers

```
a = int(input("A: "))
b = int(input("B: "))
c = int(input("C: "))
if a > b and a > c:
    print("Max is a")
elif b > c:
    print("Max is b")
else:
    print("Max is c")
```

8. Number Guessing

```
secret = 5
guess = int(input("Guess a number: "))
while guess != secret:
    print("Wrong! Try again.")
    guess = int(input("Guess: "))
print("You got it!")
```

9. Simple Calculator

```
a = int(input("Enter first: "))
op = input("Operator: ")
b = int(input("Enter second: "))
if op == "+":
    print("Result:", a + b)
elif op == "-":
    print("Result:", a - b)
elif op == "*":
    print("Result:", a * b)
elif op == "/":
    print("Result:", a / b)
else:
    print("Invalid operator")
```

10. Prime Checker

```
num = int(input("Enter number: "))
for i in range(2, num):
    if num % i == 0:
        print("Not Prime")
        break
else:
    print("Prime")
```

11. Reversed String

```
text = input("Enter text: ")
reversed = ""
for i in range(len(text), 0, -1):
    reversed += text[i]
print("Reverse:", reversed)
```

12. Count Vowels

```
text = input("Enter text: ")
vowels = "aeiouAEIOU"
count = 0
for letter in text:
    if letter in vowels:
        count = count + 1
print("Vowels:", count)
```

13. Find Average

```
n = int(input("How many numbers: "))
sum = 0
for i in range(n):
    val = input("Enter number: ")
    sum += val
average = sum / n
print("Average is: " + average)
```

14. Fibonacci Series

```
count = int(input("Enter count: "))
a = 0
b = 1
for i in range(count):
    print(a)
    a = b
    b = a + b
```

15. Password Strength Check

```
password = input("Enter password: ")
if len(password) > 8 and ("@" or "#" in password):
    print("Strong Password")
else:
    print("Weak")
```

16. Area of a Circle

```
pi = 3.14
radius = input("Enter radius: ")
area = pi * radius ** 2
print("Area is " + area)
```

17. Find Largest Even Number

```
a = int(input("First number: "))
b = int(input("Second number: "))
c = int(input("Third number: "))
```

```
if a % 2 == 0 and a > b and c:  
    max = a  
elif b % 2 == 0 and b > c:  
    max = b  
else:  
    max = c  
print("Largest even:", max)
```

18. While Loop Countdown

```
n = int(input("Enter a number: "))  
while n > 0  
    print(n)  
    n = n - 1
```

19. Multiples of 3 and 5

```
for i in range(1, 31):  
    if i % 3 == 0:  
        print(i, "is multiple of 3")  
    if i % 5 == 0:  
        print(i, "is multiple of 5")
```

20. Average of Odd Numbers

```
n = int(input("How many numbers: "))  
sum = 0  
count = 0  
for i in range(n):  
    num = int(input())  
    if num % 2 == 1:  
        sum += num  
        count += 1  
avg = sum / count  
print("Average of odds:", avg)
```

21. Grade Calculator

```
marks = int(input("Enter marks out of 100: "))  
if marks >= 90:  
    grade = "A"  
elif marks >= 80:  
    grade = "B"  
elif marks >= 70:  
    grade = "C"  
elif marks >= 60:  
    grade = "D"  
else:  
    grade = "F"  
print("Grade:", grade)
```

22. Swapping Two Variables

```
a = input("Enter a: ")  
b = input("Enter b: ")  
a = b  
b = a
```

```
print("a is now:", a)
print("b is now:", b)
```

23. Simple Login Simulation

```
username = input("Username: ")
password = input("Password: ")
if username == "admin" and password == "1234":
    print("Access granted")
else:
    print("Access denied")
```

24. Count Down by 2s

```
num = int(input("Enter starting number: "))
while num >= 0:
    print(num)
    num = num - 2
```

25. Power Function

```
base = int(input("Base: "))
exp = input("Exponent: ")
result = base ** exp
print("Result is: " + result)
```