# Lab Manual Assignment 1 : Solutions

## 1. Variables

### Question:

Create variables to store the name of a product, its price, and stock quantity. Print them in a single statement.

### Answer:

name = 'Laptop'  
price = 1000  
stock = 25  
print(f'Product: {name}, Price: ${price}, Stock: {stock}')

### Question:

A company records its monthly profit in a variable. Calculate the yearly profit by multiplying it by 12. Print both the monthly and yearly profits.

### Answer:

monthly\_profit = 1000  
yearly\_profit = monthly\_profit \* 12  
print('Monthly:', monthly\_profit, 'Yearly:', yearly\_profit)

## 2. Data Types

### Question:

Create a dictionary to store employee details: name, ID, and department. Print each value.

### Answer:

employee = {'name': 'Alice', 'ID': 123, 'department': 'HR'}  
print(employee['name'], employee['ID'], employee['department'])

### Question:

Convert a float salary to an integer and a string. Print the types of the converted values.

### Answer:

salary = 5000.99  
print(int(salary), str(salary), type(int(salary)), type(str(salary)))

### Question:

Create a list of five product names and print them one by one using a loop.

### Answer:

products = ['Laptop', 'Mouse', 'Keyboard', 'Monitor', 'Printer']  
for product in products:  
 print(product)

## 3. If Statements

### Question:

Write a program to check if a sales figure is below target, on target, or above target using if-elif-else.

### Answer:

sales = 500  
if sales < 1000:  
 print('Below Target')  
elif sales == 1000:  
 print('On Target')  
else:  
 print('Above Target')

### Question:

Create a program that calculates the net profit after deducting tax if the revenue is above a threshold. Print 'Low Revenue' if it doesn't exceed the threshold.

### Answer:

revenue = 1200  
tax = 0.2  
threshold = 1000  
if revenue > threshold:  
 net\_profit = revenue - (revenue \* tax)  
 print('Net Profit:', net\_profit)  
else:  
 print('Low Revenue')

## 4. Loops

### Question:

Use a for loop to calculate the total revenue for 5 products, given their prices and quantities in two separate lists.

### Answer:

prices = [100, 200, 300, 400, 500]  
quantities = [1, 2, 3, 4, 5]  
total\_revenue = 0  
for price, quantity in zip(prices, quantities):  
 total\_revenue += price \* quantity  
print('Total Revenue:', total\_revenue)

### Question:

Write a while loop to calculate the cumulative profit for 12 months given a monthly profit input.

### Answer:

monthly\_profit = 100  
cumulative\_profit = 0  
months = 12  
while months > 0:  
 cumulative\_profit += monthly\_profit  
 months -= 1  
print('Cumulative Profit:', cumulative\_profit)

## 5. Functions

### Question:

Write a function to calculate the revenue for a product. It should take price and quantity\_sold as parameters and return the revenue.

### Answer:

def calculate\_revenue(price, quantity\_sold):  
 return price \* quantity\_sold  
print(calculate\_revenue(50, 10))

### Question:

Create a function that takes an employee's performance score and returns their bonus amount based on specific rules.

### Answer:

def bonus(score):  
 if score > 90:  
 return '20% Bonus'  
 elif score >= 70:  
 return '10% Bonus'  
 else:  
 return 'No Bonus'  
print(bonus(85))

### Question:

Write a function with default arguments to calculate the total price of an order. The default discount is 5%.

### Answer:

def total\_price(price, discount=5):  
 return price - (price \* discount / 100)  
print(total\_price(100))

## 6. Operators

### Question:

Calculate the total cost of an order using arithmetic operators. Assume the formula is cost = (price \* quantity) - discount.

### Answer:

price, quantity, discount = 100, 5, 50  
cost = (price \* quantity) - discount  
print('Total Cost:', cost)

### Question:

Compare the sales of two branches and print whether they are equal, or which branch performed better.

### Answer:

branch1, branch2 = 1000, 1500  
if branch1 == branch2:  
 print('Equal Sales')  
elif branch1 > branch2:  
 print('Branch 1 performed better')  
else:  
 print('Branch 2 performed better')