TASK 7 Utilizing 'Functions' concepts in Python Programming.

Problem 1:

A member function **FindDisc( )** to calculate discount as per the following rules:
If Qty< = 10
Discount is 0
If Qty (11 to 20)
Discount is 15
If Qty > =20
Discount is 20

- A function **Buy( )** to allow user to enter values for ICode, Item, Price, Qty and call
- Function **FindDisc( )** to calculate the discount and Netprice(Price * Qty-Discount).
- A Function **ShowAll( )** to allow user to view the content of all the data members.

PROGRAM

```
def find_discount(qty):
    if qty <= 10:
        return 0
    elif 11 <= qty <= 20:
        return 15
    else:
        return 20

def buy():
    ICode = int(input("Enter Item Code: "))
    Item = input("Enter Item Name: ")
    Price = float(input("Enter Price: "))
    Qty = int(input("Enter Quantity: "))
    Discount = find_discount(Qty)
    Netprice = Price * Qty - Discount
    return ICode, Item, Price, Qty, Discount, Netprice

def show_all(ICode, Item, Price, Qty, Discount, Netprice):
    print("Item Code:", ICode)
    print("Item:", Item)
    print("Price:", Price)
    print("Quantity:", Qty)
    print("Discount:", Discount)
    print("Net Price:", Netprice)

ICode, Item, Price, Qty, Discount, Netprice = buy()
show_all(ICode, Item, Price, Qty, Discount, Netprice)
```

OUTPUT

```
= RESTART: E:/SUBJECT MATERIALS/veltech/subjects/WS 23-24/python/lab task/lab pr
actise/Task 7/7a.py
Enter Item Code: 122
Enter Item Name: brinjal
Enter Price: 15
Enter Quantity: 15
Item Code: 122
Item: brinjal
Price: 15.0
Quantity: 15
Discount: 15
Net Price: 210.0
```

Problem 2:
Random young student is participating in Math quiz competition. the first question asked by the host is to calculate cube product of first n natural numbers. Help the random student by implementing a simple function to achieve the task.
Input: N = 5 (get input from user)
Output: 1728000

PROGRAM

```
def cube_product_of_natural_numbers(n):
    product = 1
    for i in range(1, n + 1):
        product *= i ** 3
    return product

# Get input from the user
n = int(input("Enter the value of N: "))

# Calculate the cube product
result = cube_product_of_natural_numbers(n)

# Output the result
print("Cube product of the first", n, "natural numbers is:", result)
```

OUTPUT

```
= RESTART: E:/SUBJECT MATERIALS/veltech/subjects/WS 23-24/python/lab task/lab practise/Task 7/7b.py
Enter the value of N: 3
Cube product of the first 3 natural numbers is: 216
```

PROBLEM 3

Write a Python program to create a function that takes one argument, and that argument will be multiplied with an unknown given number.
Sample Output:
Double the number of 15 = 30
Triple the number of 15 = 45
Quadruple the number of 15 = 60
Quintuple the number 15 = 75

PROGRAM

```
def func_compute(n):
    return lambda x: x * n
result = func_compute(2)
print("Double the number of 15 =", result(15))


result = func_compute(3)
print("Triple the number of 15 =", result(15))
```

```
result = func_compute(4)
print("Quadruple the number of 15 =", result(15))


result = func_compute(5)
print("Quintuple the number 15 =", result(15))
```

OUTPUT

```
= RESTART: E:/SUBJECT MATERIALS/veltech/subjects
actise/Task 7/7c.py
Double the number of 15 = 30
Triple the number of 15 = 45
Quadruple the number of 15 = 60
Quintuple the number 15 = 75
```

PROBLEM 4

Suppose you're given a **list of ticket IDs** representing purchases made on the platform. Write a Python program that **filters** this list into two categories: **adult tickets and child tickets**. Use lambda functions to filter the tickets. Assume that the ticket ID for an **adult ticket is any even** number, while the **ticket ID for a child ticket** is any **odd number**.

PROGRAM

```
def categorize_tickets(ticket_ids):
    adult_tickets = list(filter(lambda x: x % 2 == 0, ticket_ids))
    child_tickets = list(filter(lambda x: x % 2 != 0, ticket_ids))
    return adult_tickets, child_tickets

ticket_ids = [101, 202, 305, 410, 513, 620, 723, 830, 945, 1050]

# Categorize the tickets
adult_tickets, child_tickets = categorize_tickets(ticket_ids)

# Print the results
print("Adult Tickets:", adult_tickets)
print("Child Tickets:", child_tickets)
```

OUTPUT

```
= RESTART: E:/SUBJECT MATERIALS/veltech/subjects/WS 23-24/pyt
actise/Task 7/7d.py
Adult Tickets: [202, 410, 620, 830, 1050]
Child Tickets: [101, 305, 513, 723, 945]
```