1. Shopping Cart:

```
products = {
    "Apple":125,
    "Bannana":45,
    "Grapes":60,
    "Mango":800,
    "Orange":90
}

# Display the available products:
def displayAvailableProducts():
    print("Available Products are: \n")

    for product, price in products.items():
        print(f"Product: {product}, Price: ${price}/kg")

# Add a new product to cart:
def addProduct(cart):
    name=input("Enter product name: ")

    if(name not in products.keys()):
        return print(f"Product with {name} does not exist")

    cart.append(name)

    print("Product added successfully!")

# Display the products in cart:
def displayCart(cart):
    if len(cart) == 0:
        print("Shopping cart is empty!")
        return

    print("Shopping cart Contents:")

    for item in cart:
        print(f"Product: {item}, Price: ${products[item]}/kg")

# Remove an item from cart:
def removeProduct(cart):
    item = input("Enter the product name to remove: ")

    try:
```

```
        if item in cart:
            cart.remove(item)
            print(f"{item} was removed from the cart")
        else: raise Exception(f"No product with name {item} in the cart")
    except Exception as err:
        print(str(err))

# Calculate the total price:
def calcTotalPrice(cart):
    totalPrice = 0

    for item in cart:
        totalPrice+=products[item]

    print(f"Total Price: ${totalPrice}")

# Checkout:
def checkout(cart):
    print("The checkout details are: ")

    displayCart(cart)
    calcTotalPrice(cart)
    cart.clear()

def main():
    # Shoping List:
    cart=[]
    print("Welcome to the online shoping cart!")
    print("\n0. Display Available Products")
    print("\n1. Add product")
    print("\n2. Display Cart")
    print("\n3. Remove Product")
    print("\n4. Calculate Total Price")
    print("\n5. Checkout")
    print("\n6. Exit")

    while(True):
        choice=int(input("\nEnter your choice:"))
        if choice==0:
            displayAvailableProducts()
        elif choice==1:
            addProduct(cart)
        elif choice==2:
            displayCart(cart)
        elif choice==3:
```

```
            removeProduct(cart)
        elif choice==4:
            calcTotalPrice(cart)
        elif choice==5:
            checkout(cart)
        elif choice==6:
            exit()
        else:
            print("Invalid Choice!")

if __name__=="__main__":
    main()
```

Outputs:

```
Welcome to the online shoping cart!

0. Display Available Products

1. Add product

2. Display Cart

3. Remove Product

4. Calculate Total Price

5. Checkout

6. Exit

Enter your choice:
0
Available Products are:

Product: Apple, Price: $125/kg
Product: Bannana, Price: $45/kg
Product: Grapes, Price: $60/kg
Product: Mango, Price: $800/kg
Product: Orange, Price: $90/kg

Enter your choice:
1
Enter product name: fsdsf
Product with fsdsf does not exist

Enter your choice:
1
Enter product name: Apple
Product added successfully!

Enter your choice:
1
Enter product name: Bannana
Product added successfully!
```

```
Enter your choice:
1
Enter product name: Mango
Product added successfully!

Enter your choice:
2
Shopping cart Contents:
Product: Apple, Price: $125
Product: Bannana, Price: $45
Product: Mango, Price: $800

Enter your choice:
3
Enter the product name to remove: asf
No product with name asf in the cart

Enter your choice:
3
Enter the product name to remove: fasfsdf
No product with name fasfsdf in the cart

Enter your choice:
4
Total Price: $970

Enter your choice:
3
Enter the product name to remove: Apple
fApple was removed from the cart

Enter your choice:
4
Total Price: $845

Enter your choice:
5
The checkout details are:
Shopping cart Contents:
Product: Bannana, Price: $45
Product: Mango, Price: $800
Total Price: $845
```

```
Enter your choice:
5
The checkout details are:
Shopping cart Contents:
Product: Bannana, Price: $45
Product: Mango, Price: $800
Total Price: $845

Enter your choice:
2
Shopping cart is empty!

Enter your choice:
6
```

2. Network Device Management System:

```python
# Add a new device to devices:
def addDevice(devices):
    name=input("Enter device name: ")
    type=input("Enter device type: ")
    ip=input("Enter IP address: ")

    devices.append([name,type,ip])

    print("Device added successfully!")

# Display the devices in devices:
def displayDevices(devices):
    if len(devices) == 0:
        print("Devices have been added!")
        return

    print("Network Devices:")

    for device in devices:
        print(f"Name: {device[0]}, Type: {device[1]}, IP Address: {device[2]}")

# Remove an item from devices:
def removeDevices(devices):
    device = input("Enter the device name to remove: ")

    try:
```

```
        found=False
        for item in devices:
            if item[0]== device:
                found=True
                devices.remove(item)
                print(f"{item} was removed from the devices")

        if not found:
            raise Exception(f"No device with name {device} in the devices")
    except Exception as err:
        print(str(err))

# Search device:
def search(devices):
    device = input("Enter the device name to search: ")

    try:
        found=False
        for item in devices:
            if item[0] == device:
                found=True
                print("Device Found")
                print(f"Name: {item[0]}, Type: {item[1]}, IP Address: {item[2]}")

        if not found:
            raise Exception(f"No device with name {device} in the devices")
    except Exception as err:
        print(str(err))

# Filter Devices:
def filterDevices(devices):
    type =  input("Enter the device type to filter: ")

    for device in devices:
        if device[1] == type:
            print(f"- {device[0]}")


def main():
    # Shoping List:
    devices=[]
    print("Welcome to the Network Device Management System!")

    print("\n1. Add Device")
    print("\n2. Display Devices")
```

```
    print("\n3. Search for a Device")
    print("\n4. Filter Devices by Type")
    print("\n5. Remove Device")
    print("\n6. Exit")

    while(True):
        choice=int(input("\nEnter your choice:"))

        if choice==1:
            addDevice(devices)
        elif choice==2:
            displayDevices(devices)
        elif choice==3:
            search(devices)
        elif choice==4:
            filterDevices(devices)
        elif choice==5:
            removeDevices(devices)
        elif choice==6:
            exit()
        else:
            print("Invalid Choice!")

if __name__=="__main__":
    main()
```

Outputs:

```
Welcome to the Network Device Management System!

1. Add Device

2. Display Devices

3. Search for a Device

4. Filter Devices by Type

5. Remove Device

6. Exit

Enter your choice:2
Devices have been added!

Enter your choice:1
Enter device name: Router1
Enter device type: router
Enter IP address: 1.1.1.0
Device added successfully!

Enter your choice:1
Enter device name: Router2
Enter device type: router
Enter IP address: 1.1.1.1
Device added successfully!

Enter your choice:1
Enter device name: Switch1
Enter device type: switch
Enter IP address: 1.1.1.2
Device added successfully!
```

```
Enter your choice:2
Network Devices:
Name: Router1, Type: router, IP Address: 1.1.1.0
Name: Router2, Type: router, IP Address: 1.1.1.1
Name: Switch1, Type: switch, IP Address: 1.1.1.2

Enter your choice:3
Enter the device name to search: Router1
Device Found
Name: Router1, Type: router, IP Address: 1.1.1.0

Enter your choice:3
Enter the device name to search: Bridge1
No device with name Bridge1 in the devices

Enter your choice:4
Enter the device type to filter: router
- Router1
- Router2

Enter your choice:5
Enter the device name to remove: Router2
['Router2', 'router', '1.1.1.1'] was removed from the devices

Enter your choice:2
Network Devices:
Name: Router1, Type: router, IP Address: 1.1.1.0
Name: Switch1, Type: switch, IP Address: 1.1.1.2

Enter your choice:5
Enter the device name to remove: Bridge2
No device with name Bridge2 in the devices

Enter your choice:2
Network Devices:
Name: Router1, Type: router, IP Address: 1.1.1.0
Name: Switch1, Type: switch, IP Address: 1.1.1.2
```