AI LAB 02

ROLL NO: 21K-4829

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Q1 and Q2

```
: # Question 1

names =['danish','sajjad','muzammil','amanullah']
length=len(names)
for i in range(length):
    print("Name: ",names[i])
```

```
Name:  danish
Name:  sajjad
Name:  muzammil
Name:  amanullah
```

```
: #Question 2
invites_list=['danish','sajjad','muzammil','amanullah']

for i in invites_list:
    print(f" Dear {i} you are invited dinner")
```

```
 Dear danish you are invited dinner
 Dear sajjad you are invited dinner
 Dear muzammil you are invited dinner
 Dear amanullah you are invited dinner
```

Q3

```
#Question 3
invites_list=['danish','sajjad','muzammil','amanullah']

for i in invites_list:
    print(f" Dear {i} you are invited dinner")



invites_list[3]= "Abdullah"
print("\n updated list\n")
for j in invites_list:
    print(f" Dear {j} you are invited dinner")
```

```
 Dear danish you are invited dinner
 Dear sajjad you are invited dinner
 Dear muzammil you are invited dinner
 Dear amanullah you are invited dinner

 updated list

 Dear danish you are invited dinner
 Dear sajjad you are invited dinner
 Dear muzammil you are invited dinner
 Dear Abdullah you are invited dinner
```

Q4

```python
#Question 4
book_inventory = {
    'ISBN001': {'title': 'Abc', 'author': 'A', 'year': 2020, 'quantity': 10},
    'ISBN002': {'title': 'acc', 'author': 'B', 'year': 2021, 'quantity': 12},
    'ISBN0037': {'title': 'xyz', 'author': 'C', 'year': 2022, 'quantity': 13}
}

def book_details(isbn):
    if isbn in book_inventory:
        book_details = book_inventory[isbn]
        print(f"Book Details for ISBN {isbn}:")
        print(f"Title: {book_details['title']}")
        print(f"Author: {book_details['author']}")
        print(f"Publication Year: {book_details['year']}")
        print(f"Quantity Available: {book_details['quantity']}")
    else:
        print(f"Book with ISBN {isbn} not found in the inventory.")

book_details('ISBN002')
book_inventory['ISBN001']['quantity'] = 7

new_book_isbn = 'ISBN004'
if new_book_isbn not in book_inventory:
    new_book_details = {'title': 'CDE', 'author': 'D', 'year': 2025, 'quantity': 15}
    book_inventory[new_book_isbn] = new_book_details
    print(f"\nNew book added to inventory with ISBN {new_book_isbn}")

removed_book_isbn = 'ISBN001'
if removed_book_isbn in book_inventory:
    del book_inventory[removed_book_isbn]
    print(f"\nBook with ISBN {removed_book_isbn} removed from inventory")

total_books = len(book_inventory)
print(f"\nTotal number of unique books in the inventory: {total_books}")
```

```
Book Details for ISBN ISBN002:
Title: acc
Author: B
Publication Year: 2021
Quantity Available: 12


New book added to inventory with ISBN ISBN004

Book with ISBN ISBN001 removed from inventory

Total number of unique books in the inventory: 3
```

Q5

```python
#Question 5
class Employee:

    total_employees= 0
    def __init__(self, empName, empSalary):
        self.empName= empName
        self.empSalary= empSalary
        Employee.total_employees+=1

    def employeeCount (self):
            print(f"Total employees count = {Employee.total_employees}")


    def displayEmployee (self):
            print(f"Employee name : {self.empName}")
            print(f"Employ salary : {self.empSalary}")

Employee1= Employee('Danish', 500000)
Employee2= Employee('Sarang', 150000)

Employee1.employeeCount()
Employee1.displayEmployee()
Employee2.displayEmployee()
```

```
Total employees count = 2
Employee name : Danish
Employ salary : 500000
Employee name : Sarang
Employ salary : 150000
```

Q6

1. Simple reflex agent

Tic tac toe : deterministic,fully observable,sequential,discrete,static

2. Model based agent

Digital Alarm Clock:deterministic,fully Observable,sequential,discrete,static

3. Goal based agent

Chess game: deterministic,fully Observable,sequential,discrete,static

4. Utility based agent

Stock trading :deterministic,fully observable,sequential,discrete,static

5. Learning agent

Self Driving car:deterministic,fully Observable,sequential,discrete,static