Lab Practice Programs

1) **A public library maintains a record of all the books in its collection along with the number of copies available for each book. Due to high demand, some books are running out of stock. The librarian wants to generate a list(record) of such books to order more copies. Write a program to print the names of all books that have less than 2 copies available.**

Code:

```
print("By 22IT460")
library_books = {
    "To Kill a Mockingbird": 3,
    "1984": 1,
    "The Great Gatsby": 0,
    "Pride and Prejudice": 5,
    "Moby Dick": 1,
    "The Catcher in the Rye": 2
}
print("Books with less than 2 copies available:")
for title in library_books:
    if library_books[title] < 2:
        print(title)
```

Output:

```
E:\College-4IT01\.venv\Scripts\python.exe "E:\College-4IT01\lab practice programs\1.py"
By 22IT460
Books with less than 2 copies available:
1984
The Great Gatsby
Moby Dick

Process finished with exit code 0
```

2) **A school teacher stores the marks of her students in a dictionary, where each student's name is associated with their total marks. At the end of the examination, she wants to identify the top performer in the class to award a prize for academic excellence. Write a program to print the name of the student who scored the highest marks.**

Code:

```
print("By 22IT460")
students = {
    "Avadh": 85,
    "Darpit": 92,
    "Sagar": 78,
    "Neel": 95,
    "Pratham": 88
}
top_student = None
highest_marks = -1
for student in students:
    if students[student] > highest_marks:
        highest_marks = students[student]
        top_student = student
print("Top performer:", top_student)
```

Output:

```
E:\College-4IT01\.venv\Scripts\python.exe "E:\College-4IT01\lab practice programs\2.py"
By 22IT460
Top performer: Neel

Process finished with exit code 0
```

3) **An online shopping platform stores a customer's cart items as tuples containing the item name, quantity purchased, and price per item. Before completing the checkout, the system needs to calculate the total amount the customer has to pay for their entire order. Write a program to calculate the total payable amount for all the items in the cart.**

Code:

```python
print("By 22IT460")
cart = [
    ("T-shirt", 2, 499),
    ("Jeans", 1, 1299),
    ("Shoes", 1, 2499),
    ("Cap", 3, 299)
]
total_amount = 0
for item in cart:
    total_amount += item[1] * item[2]
print("Total payable amount:", total_amount)
```

Output:

```
E:\College-4IT01\.venv\Scripts\python.exe "E:\College-4IT01\lab practice programs\3.py"
By 22IT460
Total payable amount: 5693

Process finished with exit code 0
```

4) **A movie review website collects ratings from different users for multiple movies. Each movie may receive several ratings from different viewers. The platform wants to recommend the most popular movie to new users based on the highest average rating received. Write a program to print the movie with the highest average rating.**

Code:

```
print("By 22IT460")
movies = {
    "Inception": [5, 4, 5, 5, 4],
    "Interstellar": [5, 5, 4, 5],
    "The Dark Knight": [5, 5, 5, 4, 5, 5],
    "Tenet": [4, 4, 3, 4]
}
top_movie = None
highest_avg = 0
for movie, ratings in movies.items():
    avg_rating = sum(ratings) / len(ratings)
    if avg_rating > highest_avg:
        highest_avg = avg_rating
        top_movie = movie
print("Most popular movie:", top_movie)
```

Output:

```
E:\College-4IT01\.venv\Scripts\python.exe "E:\College-4IT01\lab practice programs\4.py"
By 22IT460
Most popular movie: The Dark Knight

Process finished with exit code 0
```

5) **A restaurant maintains its menu in a dictionary where each dish name is paired with its price. A customer searches for specific types of dishes (e.g., “Paneer”) on the restaurant’s online menu. The system needs to display all available dishes that contain the searched word, ignoring case differences. Write a program to display all dishes containing the specific word (case-insensitive).**

Code:

```
print("By 22IT460")
menu = {
    "Paneer Butter Masala": 250,
    "Chicken Tikka": 300,
    "Paneer Tikka": 270,
    "Veg Biryani": 200,
    "Butter Naan": 50,
    "Paneer Roll": 180
}
search_word = "paneer"
search_word = search_word.lower()
for dish in menu:
    if search_word in dish.lower():
        print(dish)
```

Output:

```
E:\College-4IT01\.venv\Scripts\python.exe "E:\College-4IT01\lab practice programs\5.py"
By 22IT460
Paneer Butter Masala
Paneer Tikka
Paneer Roll

Process finished with exit code 0
```