**1. Convert Student Names to Uppercase**

students = ['alice', 'bob', 'charlie', 'david']

uppercase\_students = {name: name.upper() for name in students}

print(uppercase\_students)

**2. Assign Grades Based on Marks**

marks = {'Alice': 85, 'Bob': 73, 'Charlie': 90, 'David': 62}

grades = {name: ('A' if mark >= 85 else 'B' if mark >= 70 else 'C') for name, mark in marks.items()}

print(grades)

**3. Count Occurrences of Letters in Course Names**

courses = ['Mathematics', 'Physics', 'Chemistry', 'Biology']

letter\_counts = {course: {char: course.count(char) for char in set(course)} for course in courses}

print(letter\_counts)

**4. Filter Students Who Passed (Above 50)**

scores = {'Alice': 45, 'Bob': 78, 'Charlie': 90, 'David': 55, 'Eve': 30}

passed\_students = {name: score for name, score in scores.items() if score >= 50}

print(passed\_students)

**5. Calculate Square of Roll Numbers**

roll\_numbers = [1, 2, 3, 4, 5]

squared\_rolls = {roll: roll \*\* 2 for roll in roll\_numbers}

print(squared\_rolls)

**6. Generate Student Attendance Report**

students = ['Alice', 'Bob', 'Charlie', 'David']

attendance = {student: 'Present' if i % 2 == 0 else 'Absent' for i, student in enumerate(students)}

print(attendance)

**7. Invert Student-Subject Mapping**

student\_subjects = {'Alice': 'Math', 'Bob': 'Science', 'Charlie': 'Math', 'David': 'History'}

subject\_students = {subject: [name for name in student\_subjects if student\_subjects[name] == subject] for subject in set(student\_subjects.values())}

print(subject\_students)

**8. Convert Scores to Percentage (out of 100)**

raw\_scores = {'Alice': 45, 'Bob': 78, 'Charlie': 90, 'David': 55}

percentages = {name: (score / 100) \* 100 for name, score in raw\_scores.items()}

print(percentages)

**9. Categorize Students Based on Attendance Percentage**

attendance = {'Alice': 80, 'Bob': 50, 'Charlie': 95, 'David': 60}

attendance\_category = {name: ('Excellent' if percent >= 90 else 'Good' if percent >= 75 else 'Needs Improvement') for name, percent in attendance.items()}

print(attendance\_category)

**10. Generate a Dictionary of Even and Odd Roll Numbers**

roll\_numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

roll\_classification = {roll: 'Even' if roll % 2 == 0 else 'Odd' for roll in roll\_numbers}

print(roll\_classification)