```python
#РК 1 Королев А.С. ИУ5Ц-51Б (А/28)

#Классы:
class Student:
    def __init__(self, student_id, name, stipendia, department_id):
        self.student_id = student_id
        self.name = name
        self.scholarship = stipendia
        self.department_id = department_id

    def __repr__(self):
        return f"Student(id={self.student_id}, name={self.name}, scholarship={self.scholarship},
department_id={self.department_id})"

class Department:
    def __init__(self, department_id, name):
        self.department_id = department_id
        self.name = name
        self.students = []

    def __repr__(self):
        return f"Department(id={self.department_id}, name={self.name})"

class StudentDepartment:
    def __init__(self, student_id, department_id):
        self.student_id = student_id
        self.department_id = department_id

    def __repr__(self):
        return f"StudentDepartment(student_id={self.student_id}, department_id={self.department_id})"

# Создание списков объектов классов с тестовыми данными
students = [
    Student(1, "Королев", 10000, 1),
    Student(2, "Петров", 12000, 1),
    Student(3, "Пронин", 11000, 2),
    Student(4, "Иванов", 13000, 2),
    Student(5, "Смирнов", 14000, 3)
]

departments = [
    Department(1, "Кафедра математики"),
    Department(2, "Кафедра физики"),
    Department(3, "Кафедра информатики")
]

student_departments = [
    StudentDepartment(1, 1),
    StudentDepartment(2, 1),
    StudentDepartment(3, 2),
    StudentDepartment(4, 2),
    StudentDepartment(5, 3)
]

# Связываем студентов с кафедрами
for student in students:
    for department in departments:
        if student.department_id == department.department_id:
            department.students.append(student)

# Запрос 1: Список всех связанных студентов и кафедр
def query_1(departments):
    result = []
    for department in departments:
        result.append((department, department.students))
    return result
```

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print("Запрос 1:")
for department, students in query_1(departments):
    print(f"Кафедра: {department.name}")
    for student in students:
        print(f"  Студент: {student.name}")

# Запрос 2: Список кафедр с суммарной стипендией студентов на каждой кафедре, отсортированный по суммарной стипендии
def query_2(departments):
    result = []
    for department in departments:
        total_scholarship = sum(student.scholarship for student in department.students)
        result.append((department, total_scholarship))
    return sorted(result, key=lambda x: x[1], reverse=True)

print("\nЗапрос 2:")
for department, total_scholarship in query_2(departments):
    print(f"Кафедра: {department.name}, Суммарная стипендия: {total_scholarship}")

# Запрос 3: Список всех кафедр, у которых в названии присутствует слово "кафедра", и список студентов, обучающихся на них
def query_3(departments):
    result = []
    for department in departments:
        if "кафедра" in department.name.lower():
            result.append((department, department.students))
    return result

print("\nЗапрос 3:")
for department, students in query_3(departments):
    print(f"Кафедра: {department.name}")
    for student in students:
        print(f"  Студент: {student.name}")
```