

## DBMS – SOLUTIONS TO ASSIGNMENT 1

1. Apply the following things:

```
CREATE TABLE university_db.students (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    name VARCHAR(100),  
    email VARCHAR(100),  
    gpa FLOAT  
);  
  
import pymysql  
connection = pymysql.connect(  
    host="localhost",  
    user="root",  
    password="your_password",  
    database="university_db",  
    port=3306,  
    cursorclass=pymysql.cursors.DictCursor  
)  
print("Connected to MySQL successfully")  
  
try:  
    with connection.cursor() as cursor:  
        query = """  
        SELECT id, name, email, gpa  
        FROM students  
        WHERE gpa > %s  
        """  
        cursor.execute(query, (3.5,))  
        results = cursor.fetchall()  
        for row in results:  
            print(row)  
finally:  
    connection.close()
```

Sample output will appear as follows:

```
{'id': 1, 'name': 'Alice', 'email': 'alice@gmail.com', 'gpa': 3.8}  
{'id': 3, 'name': 'Bob', 'email': 'bob@gmail.com', 'gpa': 3.9}
```

2. For arbitrary relations, without assumption on keys, tighter bounds are as follows:

- (i)  $\min = 0$ ,  $\max = \min(t_1, t_2)$ .
- (ii)  $\min = 0$ ,  $\max = t_1$ .
- (iii)  $\min = 0$ ,  $\max = t_1$ .
- (iv)  $\min = 0$ ,  $\max = \min(t_1, t_2)$ .