1. **Create a result table which contain student id, student name and 5 subject marks.**

🡪import sqlite3

conn = sqlite3.connect("student\_results.db")

cursor = conn.cursor()

cursor.execute("""

CREATE TABLE IF NOT EXISTS student\_results (

student\_id INTEGER PRIMARY KEY,

student\_name TEXT NOT NULL,

subject1 INTEGER,

subject2 INTEGER,

subject3 INTEGER,

subject4 INTEGER,

subject5 INTEGER

) )

conn.commit()

conn.close()

1. **Enter 10 student details with its marks.**

🡪students\_data = [

(1, 'John Doe', 85, 90, 78, 92, 88),

(2, 'Jane Smith', 76, 88, 92, 84, 79),

(3, 'Bob Johnson', 91, 82, 87, 76, 95),

(4, 'Alice Brown', 88, 94, 89, 78, 91),

(5, 'Tom Wilson', 77, 85, 90, 92, 86),

(6, 'Emily Davis', 92, 89, 84, 77, 93),

(7, 'Chris Lee', 80, 76, 91, 88, 85),

(8, 'Sarah Adams', 89, 83, 86, 78, 94),

(9, 'Mike Jackson', 78, 90, 92, 85, 89),

(10, 'Linda Clark', 87, 92, 84, 79, 91)

]

1. Dump table into csv file “result.csv”.

🡪

import sqlite3

import csv

conn = sqlite3.connect('student\_results.db')

cursor = conn.cursor()

cursor.execute('SELECT \* FROM student\_results')

data = cursor.fetchall()

csv\_file\_path = 'result.csv'

with open(csv\_file\_path, 'w', newline='') as csv\_file:

conn.close()

1. Read result.csv filt and print total marks and grade of each student. Also append total marks and grade colum into result.csv file.

import csv

with open('result.csv', 'r') as csv\_file:

csv\_reader = csv.reader(csv\_file)

header = next(csv\_reader)

data = list(csv\_reader)

grades = []

total\_marks\_index = len(header)

grade\_index = len(header) + 1

for row in data:

subject\_marks = [int(mark) for mark in row[2:7]]

total\_marks = sum(subject\_marks)

row.append(str(total\_marks))

if total\_marks >= 90:

grade = 'A+'

elif total\_marks >= 80:

grade = 'A'

elif total\_marks >= 70:

grade = 'B'

elif total\_marks >= 60:

grade = 'C'

else:

grade = 'F'

row.append(grade) # Append grade to the row

grades.append(grade) # Store grade for later use

header.append('Total Marks')

header.append('Grade')

with open('result.csv', 'w', newline='') as csv\_file:

csv\_writer = csv.writer(csv\_file)

csv\_writer.writerow(header) # Write the updated header

csv\_writer.writerows(data) # Write the updated data

for i, row in enumerate(data):

student\_name = row[1]

total\_marks = row[total\_marks\_index]

grade = grades[i]

print(f"{student\_name}: Total Marks - {total\_marks}, Grade - {grade}")

print("Total marks and grade have been appended to result.csv.")

1. List out top 3 student if and name with its percentage.

🡪

import csv

with open('result.csv', 'r') as csv\_file:

csv\_reader = csv.reader(csv\_file)

header = next(csv\_reader)

data = list(csv\_reader)

# Calculate total marks and percentages

students\_data = [ ]

for row in data:

student\_name = row[1]

subject\_marks = [int(mark) for mark in row[2:7]]

total\_marks = sum(subject\_marks)

percentage = (total\_marks / 500) \* 100

students\_data.append((student\_name, percentage))

students\_data.sort(key=lambda x: x[1], reverse=True)

print("Top 3 Students:")

for i, (student\_name, percentage) in enumerate(students\_data[:3]):

print(f"{i + 1}. {student\_name}: Percentage - {percentage:.2f}%")