

# KENDRIYA VIDYALAYA RAILWAY GANDHIDHAM



तत् त्वं पूषन् अपावृणु  
केन्द्रीय विद्यालय संगठन

**Project Work In  
Computer Science (Code No -083)  
2021 – 2022**

**Submitted By:  
Name:- Vishal Meena  
Roll No:- 11611181  
Class:- 12<sup>th</sup>**

# CERTIFICATE

This is to certify that the **COMPUTER SCIENCE** Project work has been successfully completed by Master **Vishal Meena** Roll No. **11611181** of class **12<sup>th</sup>** during the academic session **2021 – 2022**. And this is the fulfilment of Term-2 CBSE AISSE Examination 2022.

Examiner No:

Date:

Teacher In-Charge External Examiner

Principal

# ACKNOWLEDGEMENT

It is a profound privilege to express my deep sense of gratitude towards our school **Kendriya Vidyalaya Railway Gandhidham**.

I would also like to thank our respected Principal **Mr. Chandan Singh Pilkhwal** for their encouragement and appreciation.

I wish to extend my gratitude in all sincerity to our teacher **Mr. Vinay Kumar Chauhan** who gave me an opportunity to work under his guidance. He has been a constant source of inspiration and without his valuable guidance the project would not have been successful. I would also like to thank our other teachers and staff members who provided me help and support regarding this project. Finally, I am also thankful to all my classmates who helped me wholeheartedly during the development of the project.

# SOURCE CODE

```
import csv
from tabulate import tabulate
from fpdf import FPDF

# Student Management System
"""
Fields :- ['Roll No.', 'Class', 'Name', 'Marks', 'Age', 'Phone']
1. Add New Student
2. View Students (A-pdf/B-standard)
3. Search Student
4. Update Student
5. Delete Student
6. Quit
"""

# Define global variables
student_fields = ['Roll No.', 'Class', 'Name', 'Marks', 'Age', 'Phone']
student_database = 'students.csv'

def display_menu():
    print("\n")
    print("-----")
    print(" Welcome to Student Management System")
    print("-----")
    print("1. Add New Student")
    print("2. View Students (A-pdf/B-standard)")
    print("3. Search Student")
    print("4. Update Student")
    print("5. Delete Student")
    print("6. Quit")

def add_student():
    print("-----")
    print("Add Student Information")
    print("-----")
    global student_fields
    global student_database

    student_data = []
    for field in student_fields:
        value = input("Enter " + field + ": ")
        student_data.append(value)
```

```

with open(student_database, "a", encoding="utf-8", newline="") as f:
    writer = csv.writer(f)
    writer.writerows([student_data])

print("Data saved successfully")
input("Press any key to continue")
return

```

```

def view_students():
    global student_fields
    global student_database

```

```

    print("--- Student Records ---")

```

```

    with open(student_database, "r", encoding="utf-8") as f:
        reader = csv.reader(f)
        l = []
        for row in reader:
            l.append(row)

```

```

print(tabulate(l, tablefmt="pretty", headers=['roll', 'class', 'name', 'marks', 'age', 'phone']))

```

```

    input("Press any key to continue")

```

```

def search_student():
    global student_fields
    global student_database

```

```

    print("--- Search Student ---")
    roll = input("Enter roll no. to search: ")
    with open(student_database, "r", encoding="utf-8") as f:
        reader = csv.reader(f)
        for row in reader:
            if len(row) > 0:
                if roll == row[0]:
                    print("----- Student Found -----")
                    print("Roll :", row[0])
                    print("Class :", row[1])
                    print("Name :", row[2])
                    print("Marks :", row[3])
                    print("Age :", row[4])
                    print("Phone :", row[5])
                    break

```

```

    else:
        print("Roll No. not found in our database")
    input("Press any key to continue")

```

```

def update_student():
    global student_fields
    global student_database

    print("--- Update Student ---")
    roll = input("Enter roll no. to update: ")
    index_student = None
    updated_data = []
    with open(student_database, "r", encoding="utf-8") as f:
        reader = csv.reader(f)
        counter = 0
        for row in reader:
            if len(row) > 0:
                if roll == row[0]:
                    index_student = counter
                    print("Student Found: at index ", index_student)
                    student_data = []
                    for field in student_fields:
                        value = input("Enter " + field + ": ")
                        student_data.append(value)
                    updated_data.append(student_data)
                else:
                    updated_data.append(row)
            counter += 1

    # Check if the record is found or not
    if index_student is not None:
        with open(student_database, "w", encoding="utf-8", newline="") as f:
            writer = csv.writer(f)
            writer.writerows(updated_data)
    else:
        print("Roll No. not found in our database")

    input("Press any key to continue")

```

```

def delete_student():
    global student_fields
    global student_database

    print("--- Delete Student ---")
    roll = input("Enter roll no. to delete: ")
    student_found = False
    updated_data = []
    with open(student_database, "r", encoding="utf-8") as f:
        reader = csv.reader(f)
        counter = 0

```

```

for row in reader:
    if len(row) > 0:
        if roll != row[0]:
            updated_data.append(row)
            counter += 1
        else:
            student_found = True

if student_found is True:
    with open(student_database, "w", encoding="utf-8", newline=") as f:
        writer = csv.writer(f)
        writer.writerows(updated_data)
        print("Roll no. ", roll, "deleted successfully")
    else:
        print("Roll No. not found in our database")

input("Press any key to continue")

def students_pdf():
    global student_fields
    global student_database

    with open(student_database, "r", encoding="utf-8-sig") as f: # utf-8-sig very usefull
        reader = csv.reader(f)
        l = [student_fields]
        for row in reader:
            l.append(row)
        pdf(l, 'students.pdf')
        print('PDF generated successfully...')
        input("Press any key to continue")

def pdf(a,b):
    pdf = FPDF()
    pdf.add_page()
    pdf.set_font("helvetica", 'B', size=25)
    pdf.cell(200,10,txt = 'List of all students',ln = 1,align='C')
    pdf.set_font("helvetica", size=20)
    line_height = pdf.font_size * 2.5
    col_width = pdf.epw/6 # distribute content evenly
    for row in a:
        for data in row:
            pdf.multi_cell(col_width, line_height, data,
                           border=1, ln=3, max_line_height=pdf.font_size)
        pdf.ln(line_height)

    pdf.output(b)

while True:
    display_menu()

```

```
choice = input("Enter your choice: ")
if choice == '1':
    add_student()
elif choice == '2A' or choice == '2a':
    students_pdf()
elif choice == '2B' or choice == '2b':
    view_students()
elif choice == '3':
    search_student()
elif choice == '4':
    update_student()
elif choice == '5':
    delete_student()
else:
    break

print("-----")
```



# Output

## 1. CSV File

	Roll No.	Class	Name	Marks	Age	Phone No.	
	A	B	C	D	E	F	G
1	1	11	A	99	16	8741	
2	2	12	B	85	17	5698	
3	3	12	C	12	17	9874	
4	4	11	D	35	16	6554	
5	5	12	E	8	17	9856	
6	6	11	F	98	16	9856	
7	7	10	G	65	15	3652	
8	8	12	H	75	17	1254	
9	9	10	I	58	15	5692	
10	10	11	J	88	16	3569	
11							

## 2. Menu

```
===== RESTART: D:\CS Project\12th\Term 2\Project V3.py =====

-----
Welcome to Student Management System
-----
1. Add New Student
2. View Students (A-pdf/B-standard)
3. Search Student
4. Update Student
5. Delete Student
6. Quit
Enter your choice: |
```

## 3. Add new student

```
-----
Welcome to Student Management System
-----
1. Add New Student
2. View Students (A-pdf/B-standard)
3. Search Student
4. Update Student
5. Delete Student
6. Quit
Enter your choice: 1
-----
Add Student Information
-----
Enter Roll No.: 11
Enter Class: 12
Enter Name: K
Enter Marks: 96
Enter Age: 17
Enter Phone: 2548
Data saved successfully
Press any key to continue|
```

#### 4. View Students (Standard)

```
-----
Welcome to Student Management System
-----
1. Add New Student
2. View Students (A-pdf/B-standard)
3. Search Student
4. Update Student
5. Delete Student
6. Quit
Enter your choice: 2b
--- Student Records ---
+-----+-----+-----+-----+-----+
| roll | class | name | marks | age | phone |
+-----+-----+-----+-----+-----+
| 1 | 11 | A | 99 | 16 | 8741 |
| 2 | 12 | B | 85 | 17 | 5698 |
| 3 | 12 | C | 12 | 17 | 9874 |
| 4 | 11 | D | 35 | 16 | 6554 |
| 5 | 12 | E | 8 | 17 | 9856 |
| 6 | 11 | F | 98 | 16 | 9856 |
| 7 | 10 | G | 65 | 15 | 3652 |
| 8 | 12 | H | 75 | 17 | 1254 |
| 9 | 10 | I | 58 | 15 | 5692 |
| 10 | 11 | J | 88 | 16 | 3569 |
| 11 | 12 | K | 96 | 17 | 2548 |
+-----+-----+-----+-----+-----+
Press any key to continue
```

#### 5. View Students (PDF)

```
-----
Welcome to Student Management System
-----
1. Add New Student
2. View Students (A-pdf/B-standard)
3. Search Student
4. Update Student
5. Delete Student
6. Quit
Enter your choice: 2a
PDF generated successfully...
Press any key to continue
```

## 6. Generated PDF

List of all students					
Roll No.	Class	Name	Marks	Age	Phone
1	11	A	99	16	8741
2	12	B	85	17	5698
3	12	C	12	17	9874
4	11	D	35	16	6554
5	12	E	8	17	9856
6	11	F	98	16	9856
7	10	G	65	15	3652
8	12	H	75	17	1254
9	10	I	58	15	5692
10	11	J	88	16	3569
11	12	K	96	17	2548

## 7. Search Students

```
-----
Welcome to Student Management System
-----
1. Add New Student
2. View Students (A-pdf/B-standard)
3. Search Student
4. Update Student
5. Delete Student
6. Quit
Enter your choice: 3
--- Search Student ---
Enter roll no. to search: 7
----- Student Found -----
Roll   : 7
Class  : 10
Name   : G
Marks  : 65
Age    : 15
Phone  : 3652
Press any key to continue
```

## 8. Update Student

```
-----  
Welcome to Student Management System  
-----  
1. Add New Student  
2. View Students (A-pdf/B-standard)  
3. Search Student  
4. Update Student  
5. Delete Student  
6. Quit  
Enter your choice: 4  
--- Update Student ---  
Enter roll no. to update: 11  
Student Found: at index 10  
Enter Roll No.: 11  
Enter Class: 11  
Enter Name: K  
Enter Marks: 88  
Enter Age: 16  
Enter Phone: 4875  
Press any key to continue
```

## 9. Delete Student

```
-----  
Welcome to Student Management System  
-----  
1. Add New Student  
2. View Students (A-pdf/B-standard)  
3. Search Student  
4. Update Student  
5. Delete Student  
6. Quit  
Enter your choice: 5  
--- Delete Student ---  
Enter roll no. to delete: 11  
Roll no. 11 deleted successfully  
Press any key to continue
```