

# Chapter-8

## File Handling -> CSV File

**In this tutorial we will discuss the following topics**

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2	Python: Writing into CSV files
3	Writing into CSV using loop:
4	Python: Reading from CSV files
5	Appending to CSV files
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7	Searching Record in CSV file (Search By Roll number)
8	Deleting record from CSV file by field value

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## Python: File Handling -> CSV Files

### What is CSV file?

- In this type of file, there is no terminator for a line and the data is stored after converting it into machine understandable binary language.
- Operations on binary files are faster as no translation required.
- Image files such as .jpg, .png, .gif, etc., and documents such as .doc, .xls, .pdf, etc., all of them constitute binary files.



### Some of the most common access modes are listed below:

There are 3 main modes in which the files can be opened: Read, Write and Append mode.

**Read mode (denoted by 'r'):** It reads contents from a file. The file should exist else it gives an error.

**Write mode (denoted by 'w'):** It writes to a CSV file. If the file exists, it clears it and starts writing to it from the first row. Else, if the file does not exist, it is created and then the data is written to it.

**Append mode (denoted by 'a'):** It writes rows to a pre-existing file. It is different from write mode as it does not clear the existing rows of the CSV file, it just adds the rows below them.

### Operations performed using CSV files:

- a) Reading from CSV file
- b) Writing to CSV File
- c) Appending record ( inserting record at the end of the file)
- d) Copying a file

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- e) Searching Record in CSVfile
- f) Deleting record from CSVfile
- g) Modification/ Updation in CSV File.

### Python: Writing into CSV files

- To saving data to a CSV file is done using the **writer** object provided by the **csv** module.
- Let's see how to save Student Details to a CSV file.
- In the given example code, we first open the file for writing.
- The **'w'** mode creates a file for us if it hasn't already been created.
- Next, we create a **filewriter** object that we use to add rows using the **writerow** method.
- The **writerow** method takes a list of values as an argument, and then saves them as one line in a CSV file.
- **NOTE:** Please note that **writerow** method accepts only a single argument which we have given as a list here (notice the '[' and ']' around the contents to be written) .

```
import csv
```

```
with open('Student_Details.csv', 'w', newline='') as Myfile:
```

```
    filewriter = csv.writer(Myfile, delimiter=',')
```

```
    filewriter.writerow(['RollNo', 'Name', 'Percentage', 'Remark'])
```

```
    filewriter.writerow(['101', 'Arjun', '78', 'Good'])
```

```
    filewriter.writerow(['102', 'Amaan', '90', 'V Good'])
```

```
    filewriter.writerow(['103', 'Vinod', '60', 'Average'])
```

```
    filewriter.writerow(['104', 'Dev', '92', 'Excellent'])
```

```
print("Data Saved in file Student_Details.....")
```

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### Writing into CSV using loop:

```
import csv

with open('csvfile.csv','w',newline='') as csvf:

    writecsv=csv.writer(csvf,delimiter=',')

    choice='y'

    while choice.lower()=='y':

        rl=int(input("Enter Roll No. "))

        n=input("Enter Name")

        p=float(input("Enter Percentage"))

        r=input("Enter Remarks")

        writecsv.writerow([rl,n,p,r])

        print(" Data saved in Student Details file..")

        choice=input("Want add more record(y/n).....")
```

### Python: Reading from CSV files

The **csv.reader()** method returns a reader object which iterates over lines in the given CSV file.

**Step 1:** You have to **imports** the **csv** package so that you can use the methods provided by it for easy csv I/O.

**Step 2:** opens the file **student\_Details** in read mode and a file object called **fileobject**, which points to the file contents.

**Step 3:** **csv.reader** is the object which iterates over the lines of the CSV file through the File object **readcsv**.

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### Example:

```
import csv

with open('Student_Details.csv','w',newline='') as fileobject:

    readcsv=csv.reader(fileobject)

    for i in readcsv:

        print(i)
```

**Example:** We will show how to pull out specific data from the spreadsheet and save it to a list variable:

```
import csv

with open('Student_Details.csv') as csvf:

    readCSV = csv.reader(csvf, delimiter=',')

    RollNos = []

    Remarks = []

    for row in readCSV:

        Rem = row[3]

        Roll = row[0]

        RollNos.append(Rem)

        Remarks.append(Roll)

    print(RollNos)

    print(Remarks)
```

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### Appending to CSV files

Suppose we want to add a few lines to the “**Student\_Details.csv**” file. The Append mode ‘**a**’ can be of help. The below code appends rows to the existing

“**Student\_Details.csv**” file:

```
import csv

with open('Student_Details.csv','a',newline='') as csvfile:

    writcsv=csv.writer(csvfile,delimiter=',')

    choice='y'

    while choice.lower()=='y':

        rl=int(input("Enter Roll No. "))

        n=input("Enter Name")

        p=float(input("Enter Percentage"))

        r=input("Enter Remarks")

        writcsv.writerow([rl,n,p,r])

        print(" Data saved in Student Details file..")

        choice=input("Want add more record(y/n).....")
```

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### Copy data from one file to another

```
import csv

with open('copyout.csv','w') as outFile:

    fileWriter = csv.writer(outFile)

    with open('Student_Details.csv','r') as inFile:

        fileReader = csv.reader(inFile)

        for row in fileReader:

            fileWriter.writerow(row)
```

In the above code, first we open the file (in write mode) to which we want to copy the contents, i.e. destination file (**copyout.csv**). Then, we create the writer object. Further, we open the file (in read mode) from which we need to copy the contents from, i.e. the source file (Student\_Details.csv).

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### Searching Record in CSV file (Search By Roll number)

```
import csv

#input Roll number you want to search
number = input('Enter number to find: ')

#read csv, and split on "," the line
with open('Student_Details.csv') as f:
    csv_file = csv.reader(f, delimiter=",")

    #loop through csv list
    for row in csv_file:

        #if current rows index value (here 0) is equal to input, print that row
        if number == row[0]:
            print (row)
```

#### OUTPUT:

Enter number to find: 103

['103', 'Vinod', '60', 'Average']



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### Deleting record from CSV file by field value

For deleting the particular row from CSV file.

- read the **csv** file in memory as a list,
- then edit that list, and
- then write it back to the **csv** file.

#### Example:

```
import csv
lines = list()

rno= input("Please enter a student's roll no to be deleted.")

with open('Student_Details.csv', 'r') as readFile:

    reader = csv.reader(readFile)

    for row in reader:

        lines.append(row)

        for field in row:

            if field == rno:

                lines.remove(row)

with open('Student_Details.csv', 'w', newline='') as writeFile:

    writer = csv.writer(writeFile, delimiter=',')

    writer.writerows(lines)

with open('Student_Details.csv', 'r') as rFile:

    readf = csv.reader(rFile)

    for i in readf:

        print(i)
```