# EL3

```
Q1.  import csv

with open('students.csv', 'r') as infile:
    reader = csv.DictReader(infile)
    students = list(reader)

with open('student_summary.csv', 'w', newline='') as outfile
    writer = csv.writer(outfile)
    writer = writerow('RollNo', 'Name', 'AverageMarks', 'Result'])

    for student in students:
        avg = (int(student['Maths']) + int(student['Physics']) + int
        (student['Chemistry'])) /3

        if avg >= 40:
            result = 'Pass'
        else:
            result = 'Fail'

        writer.writerow([student['RollNo'], student['Name'],
        round(avg,2), result])

print("Student Summary created Successfully")
```

Q2.

```
import csv

region_sales = {}

with open('daily_sales.csv', 'r') as infile:
    reader = csv.DictReader(infile)

    for row in reader:
        region = row['region']
        sales = int(row['sales'])

        if region in region_sales:
            region_sales[region] += sales
        else:
            region_sales[region] = sales

with open('region_sales.csv', 'w', newline='') as outfile:
    writer = csv.writer(outfile)
    writer.writerow(['region', 'TotalSales'])

    for region, total in region_sales.items():
        if total >= 5000:
            writer.writerow([region, total])

print("Region Sales report created successfully!")
```

Q3 import openpyxl

```
wb = openpyxl.Workbook()
ws = wb.active
ws.title = "Sheet1"

ws.append(["RollNo", 'Name', 'ClassesHeld', 'ClassesAttended'])

data = [ [101, 'Aarav', 100, 92],
         [102, 'Priya', 100, 88],
         [103, 'Rahul', 100, 72],
         [104, 'Shreya', 100, 85] ]

for row in data:
    ws.append(row)

wb.save('attendance.xlsx')
print('Input file attendance.xlsx created')
```

Q4. Create_input.py

```
import openpyxl

wb = openpyxl.Workbook()
ws = wb.active

ws.append(['EmpID', 'Name', 'Dept', 'Basic Salary'])

data = [ [101, 'Amit', 'IT', 45000],
         [102, 'Neha', 'HR', 38000],
         [103, 'Suresh', 'IT', 52000] ]

for row in data:
    ws.append(row)

wb.save('emp_data.xlsx')
print('Input file emp_data.xlsx')
```

Solution.py

```
import openpyxl

wb = openpyxl.load_workbook('Empdata.xlsx')
ws = wb.active

wb_out = openpyxl.Workbook()
ws_out = wb_out.active
```

```
ws_out.append(['EmpID', 'Name', 'Gross Salary'])

for row in ws.iter_rows(min_row=2, values_only=True):
    emp_id = row[0]
    name = row[1]
    basic = row[3]

    hra = basic * 0.10
    da = basic * 0.18

    gross = basic + hra + da

    ws_out.append([emp_id, name, round(gross, 2)])

wb_out.save('emp_salary.xlsx')
print("Employee Salary file created")
```

Q5.

```
import csv

with open('inventory.csv', 'r') as infile:
    reader = csv.DictReader(infile)
    products = list(reader)

with open('reorder_list.csv', 'w', newline='') as outfile:
    writer = csv.writer(outfile)
    writer.writerow(['Prod_ID', 'Prod_Name', 'Stock',
                     'Reorder_Level'])
```

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```
for product in products:
    stock = int(product['Stock'])
    reorder_level = int(product['Reorder_level'])

    if stock < reorder_level:
        writer.writerow([product['Prod_ID'],
        product['ProductName'], stock, reorder_level])
print("Reorder list created successfully")
```

Q6.

```
import csv

with open('theory_marks.csv', 'r') as file:
    theory_reader = csv.DictReader(file)
    theory_data = {row['Roll No']: row for row in theory_reader}

with open('lab_marks.csv', 'r') as file:
    lab_reader = csv.DictReader(file)
    lab_data = {row['Roll No']: row for row in lab_reader}

with open('final_result.csv', 'w', newline='') as outfile:
    writer = csv.writer(outfile)
    writer.writerow(['Roll No', 'Name', 'TheoryMark', 'LabMark',
        'TotalMark', 'Result'])
```

```
for roll_no in theory_data:
    name = theory_data[roll_no]['Name']
    theory = int(theory_data[roll_no]['Theory_marks'])
    lab = int(lab_data[roll_no]['Lab_marks'])

    total = theory + lab

    if total >= 40:
        result = 'Pass'
    else:
        result = 'Fail'

    writer.writerow([roll_no, name, theory, lab, total, result])

print("Final result file created")
```

Q7. create_input.py

```
import openpyxl

wb = openpyxl.Workbook()
ws = wb.active

ws.append(['Date', 'Category', 'Amount'])
```

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```
data = [ ['2024-01-05', 'Food', 500],
         ['2024-01-08', 'Transport', 300],
         '2024-01-12', 'Food', 450]]

for row in data:
    ws.append(row)

wb.save('expenses.xlsx')
print('Input file xlsx created')
```

Solution.py →

```
import openpyxl

wb = openpyxl.load_workbook('Expenses.xlsx')

category_total = {}

for row in ws.iter_rows(min_row=2, values_only=True):
    category = row[1]
    amount = row[2]

    if category in category_totals:
        category_totals[category] += amount
    else:
        category_totals[category] = amount
```

```
wb_out = openpyxl.Workbook()
ws_out = wb_out.active

ws_out.append(['Category', 'Monthly Total'])

for category, total in category_totals.items():
    ws_out.append([category, total])

wb_out.save('Monthly_Summary.xlsx')
print("Monthly Summary Created")
```

Q8.

```
import csv
import openpyxl

with open('bus_pass_requests.csv', 'r') as infile:
    reader = csv.DictReader(infile)
    requests = list(reader)

# for
fare_data = {}
status_data = {}

for req in requests:
    student_id = req['StudentID']
    name = req['Name']
    distance = float(req['DistKm'])
```

```
if distance <= 3:
    fare = 400

elif distance <= 10:
    fare = 650

else:
    fare = 900

fare_data.append([student_id, name, distance, fare])
status_data.append([student_id, name, distance, fare, 'Pending'])

with open('bus_pass_fare_list.csv', 'w', newline='') as outfile:
    writer = csv.writer(outfile)
    writer.writerow(['Student ID', 'Name', 'Distance', 'Fare'])
    writer.writerows(fare_data)

wb = openpyxl.Workbook()
ws = wb.active
ws.append(['Student ID', 'Name', 'Distance', 'Fare', 'Status'])

for row in status_data:
    ws.append(row)

wb.save('bus_pass_status.xlsx')
print("Bus Pass files created successfully")
```

Q9. import openpyxl

```
wb = openpyxl.Workbook()
ws = wb.active

ws.append(['orderID', 'CustomerName', 'RefundMode', 'Amount'])

data = [ ['ORD001', 'Amit', 'UPI', 1500],
         ['ORD002', 'Neha', 'CARD', 2500],
         ['ORD003', 'Suresh', 'CASH', 800] ]

for row in data:
    ws.append(row)

wb.save('Returns.xlsx')
print('Input file Returns.xlsx created')
```

Solution.py

```
import openpyxl
import csv

wb = openpyxl.load_workbook('return.xlsx')
wt = wb.active

valid_modes = ['UPI', 'CARD', 'WALLET']
```

```
valid_returns = []
invalid_returns = []

for row in ws.iter_rows(min_row=2, values_only=True):
    order_id = row[0]
    customer = row[1]
    mode = row[2]
    amount = row[3]
    error = None

    if mode not in valid_modes:
        error = 'Invalid RefundMode'

    elif amount <= 0:
        error = 'Invalid Amount'

    if error:
        invalid_returns.append([orderId, customer, customer, mode,
        amount, error])

    else:
        valid_returns.append([order_id, customer, mode, amount])

with open('return_claims.csv', 'w', newline='') as outfile:
    writer = csv.writer(outfile)
    writer.writerow(['Order ID', 'CustomerName', 'RefundMode',
    'RRAmount'])
    writer.writerows(valid_returns)
```

```
wb_err = openpyxl.Workbook()
ws_err = wb_err.active
ws_err.append(['Order ID', 'Customer Name', 'Refund Mode',
               'Amount', 'Error Reason'])

for row in invalid_returns:
    ws_err.append(row)

wb_err.save('return_error_log.xlsx')
print("Return validation completed!")
```

Q10.

```
import csv
import openpyxl

with open('meter_readings.csv', 'r') as infile:
    reader = csv.DictReader(infile)
    readings = list(reader)

valid_bills = []
error_bills = []

for reading in readings:
    meter_id = reading['MeterID']
    customer = reading['CustomerName']
    previous = reading['PreviousReading']
    current = int(reading['CurrentReading'])
```

```
units = current - previous

if units < 0:
    error_bills.append([meter_id, customer,
    previous, current, 'Invalid : Negative units'])
    continue

if units <= 100:
    bill_amount = units * 4
elif units <= 200:
    bill_amount = (100 * 4) + ((units - 100) * 6)
else:
    bill_amount = (100 * 4) + (100 * 6) + ((units - 200) * 8)

valid_bills.append([meter_id, customer, previous, current,
    units, bill_amount])

wb = openpyxl.Workbook()
ws = wb.active
ws.append(['Meter ID', 'Customer Name', 'Previous Reading',
    'Current Reading', 'Units Consumed', 'Bill Amount'])

for bill in valid_bills:
    ws.append(bill)

wb.save('bills.xlsx')
```

```
with open('billing_error.csv', 'w', newline='') as outfile:
    writer = csv.writer(outfile)
    writer.writerow(['MeterID', 'CustomerName',
        'PreviousReading', 'CurrentReading',
        'ErrorReason'])
    writer.writerows(error_bills)

print("Billing completed successfully")
```