

Assignment 4 – Loops, File Handling & Exception Handling

PART A – Loops

Q1.

Write a Python program that takes an integer n as input and prints:

- All even numbers from 1 to n
- All odd numbers from 1 to n

Use two separate loops.

Q2.

Write a program to display the following pattern using loops:

```
*  
* *  
* * *  
* * * *  
* * * * *  
* * * *  
* *  
*
```

The number of rows should come from user input.

Q3.

Write a Python program that keeps asking the user for numbers until the user enters "stop".

- Store only valid integers
- Ignore invalid inputs
- At the end, print the list of valid numbers and their sum

Use a while loop.

PART B – File Handling

Q4.

Write a program that asks the user to type multiple lines of text.

Stop taking input when the user presses an empty line.

Save all entered lines into a file named data.txt.

Q5.

Read data.txt and print:

- Total number of lines
- Total number of characters (excluding newline)
- The longest line (by character length)

Q6.

Read a file records.txt containing:

Rahul 85

Priya 92

Sam 66

Neha 75

Print the average marks and names scoring above average.

Q7.

Read input.txt and create clean.txt that contains only non-empty lines.

PART C – Exception Handling

Q8.

Ask the user to enter an integer.

If invalid, show "Invalid input! Please enter a number."

Keep asking until valid input.

Q9.

Ask user for a file name.

If file does not exist, show "File not found."

Otherwise print its contents.

Use finally to print "Task Completed."

Q10.

Create custom exception NegativeNumberError.

Ask user for a positive number.

Raise NegativeNumberError if number is negative.

Handle the exception.

BONUS QUESTION

Q11.

Read a log file with lines like:

2025-12-07 10:23:45 INFO User logged in

2025-12-07 10:24:10 ERROR Invalid password

Count INFO, WARNING, ERROR occurrences and print summary.