CS201 Programming for AI
Assignment 01: Introduction to File IO and basic Python structures.
Due : 23h55 Sunday 24 October, 2021.

FCSE
GIKI

Fall 2021

1 Objectives

(a) Test the student's ability to do File IO.

(b) Test the student's ability to use the `list` data type and associated functions.

(c) Test the student's ability do error handling in code.

(d) Test the student's ability to follow written instructions.

2 Description

You will be using the Python language to do this assignment. You can't use any external libraries. Only the Python Standard Library is allowed. Use the built-in library functions for File IO.

You will need to do File IO for this assignment. You can try Section 7.2 on the this tutorial or use google yourself.

This assignment weighs 2% of your overall grade.

3 Task 1

T1. Display the contents of a file.
You will write a program that reads a filen named `input.txt`, located in the same directory as you Python program, and display its contents on the screen.

4 Task 2

T2. Display names with frequency.
You will program will read a file named `input.txt` located in the same directory as your Python program. This file will contain names of persons. Each line will contain one name. Some of these names will be repeated on different lines. Your program should output the list of names followed by the number of times that name was repeated in the file. In your output each name should appear only once.

5 Error Checking and Clean Code instructions

It is extremely important that your program handles errors correctly, i.e., it should be able to detect when something goes wrong and should exit gracefully after displaying a useful error message. Under no circumstances shall it CRASH!!

Things that can go wrong may include, but are not limited to, :

- file names `input.txt` is not present
- file names `input.txt` is present but is empty
- ..., etc.

You would lose marks if your program crashes during use.

It is the programmer's responsibility to free any system resources.In this case you will see that all files opened by a program should be closed before the program ends. Your program should always close any and all opened files.

Code should be properly indented, readable and commented.

If your program crashes, you will get a 0.

6 Submission Instructions

1. You submission should consist of two .py files only.
2. You shall name your submission as u2020xxx_a1_t1.c and u2020xxx_a1_t2.c where xxx are the last three digits of your registration number.
3. You will submit on MS Teams.
4. Missing submission deadline on will cost you (50%) marks. Submissions received more than 24 hours after submission deadline will get a 0.

7 Rubric

This is an individual assignment. Any form of collaboration, cheating, plagiarism will get you a 0. Giving your code to somebody else, even if it is for their understanding only, is not allowed. You may be called for a viva; if you are unable to explain any line of the submitted code, you'll get a 0.

Any form of plagiarism or collusion will get you at least a 0 in the assignment and, potentially, an F in the course.

To discourage plagiarism and encourage academic honesty, if you've been unable to do any thing you can submit a program saying Hello World before the deadline by following submission instructions (name your file u2020xxx_a01_hw.c), and get the submission marks. This way you are sure to get at least 25% of the marks.

Category	Marks
Followed submission insns	10 marks
Code was readable + Compiled without warnings + Does not crash + Program handles errors well	10 marks
T1 working properly	10 marks
T2 working properly	10 marks
Total	40 marks