Documentation for chair seater – Assignment 3 Software engineering.

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Introduction

This file will cover the basis of running the program to get the result and getting the test to run. This is followed by an outline of all of the functions of the program, their required inputs and what they return.

General running

The main program can be run from the main.py file. Running prints out the answer and the total run time of the program.

Tests

The test in the system can be executed by running the test.py file. This will run 7 different nose tests. Each of these verifies that a particular functions works by running it and compare expected output to actual output.

Functions

1. Functions from grid_creator_manager.py

create_grid(x,y)

The x and y inputs represent the size of the grid the is created.
The functions created a list containing list of arrays all containing 0.

X represent length of the array and Y the number of array.

For example create_grid(4,2) = [[0, 0, 0, 0], [0, 0, 0, 0]]

The functions is based on the idea that a 0 represents and empty seat. A 1 represents a full seat.

occupy_seat(grid,x,y)

The x and y inputs are the coordinates in the grid. The grid input is the current gird being used.
This functions will find the relevant point in the array and make the value 1.

empty_seat(grid,x,y)

The x and y inputs are the coordinates in the grid. The grid input is the current gird being used.
This functions will find the relevant point in the array and make the value 0.

toggle_seat(grid,x,y)

The x and y inputs are the coordinates in the grid. The grid input is the current gird being used.
This functions will find the relevant point in the array.
If the value is 0 it will set it as 1.
If the value is 1 it will set it as 0

generate_indiviudal_instructions_and_run(grid,instruction_set)

The grid input take the current grid being worked on and instruction_set the instruction set to work from.

For each instruction the functions carries out the type of instruction for the required range.

It will call the relevant instruction and apply it to the gird.

This then returns the grid once all instructions are completed.

count_filled_seats(grid)

This function take the current gird.

The number of filled seats (represented by 1s) are counted and returned.

2. Functions from phraser.py

generate_instructions(file_name)

The function take the file_name of the instruction file as an argument.

The file should be in the format of [(instruction type), (range_start), through, (range_finish)]

This then returns a cleaned version of all instructions.

3. Functions form main.py

This function imports all the relevant functions from the rest of the modules and run the main program.

It prints out statement according to the stage of the run.

At the end result and run time are returned.

4. Functions in test.py

There is a test functions for every functions in the module for this program.

Each of this test calls a function and then asserts the results against the expected result.

The function to test generate_instructions_from_files() has a hard coded assertion.