

User Guide

Run Environment

- Requires python 3+ (3.6+)
- pandas
- pydicom
- windows/macOS/(linux)

Running the program

Before starting, users can install the program with git: git clone <https://github.com/SuryadiTjandra/automated-plan-checking.git> Or download the zip: <https://github.com/SuryadiTjandra/automated-plan-checking/archive/master.zip>

• I have one RT-PLAN

The main module is app.py, so `python app.py` forms the base for all commands.

The program additionally requires DICOM RT-PLAN as input; this is specified by adding "--input [FILE LOCATION]" to the base command. (-i can be used as a short form instead of --input)

It is required that the output of the program is demonstrated as a CSV file; this is specified by adding "--format csv". (-f can be used as short form of --format csv)

Each DICOM RT-PLAN requires the user to input its case number; this is done by adding "--case_number [NUMBER]". (-c can be used as short form of --case_number)

If no case number argument in the command, prompt question is designed for users: "What is the case number for XXX file?"

Example: python app.py --inputs Resources/Input/YellowLvIIII_7a.dcm --format csv -- case_number 6

In summary, the above command is `python app.py --input [FILE LOCATION] -c [NUMBER]`. This will produce a csv of extracted values and pass/fail evaluations from the input into a 'Reports' folder

```
C:\Users\user>.\automated-plan-checking>python app.py --inputs Resources/Input/YellowLvIIII_7a.dcm --format csv -c 1
Extracted to file ./Reports\YellowLvIIII_7a.csv

C:\Users\user>.\automated-plan-checking>python app.py --inputs Resources/Input/YellowLvIIII_7a.dcm --format csv
What is the case number for Resources/Input/YellowLvIIII_7a.dcm? 1
Extracted to file ./Reports\YellowLvIIII_7a.csv
```

• I have a whole folder of RT-PLANs

python app.py --input [FOLDER LOCATION] -c [NUMBER]

Example: python app.py --inputs Resources/Input --format csv -c 6

```
C:\Users\user>.\automated-plan-checking>python app.py --inputs Resources/Input --format csv -c 6
Extracted to file ./Reports\YellowLvIIII_7a.csv
Extracted to file ./Reports\YellowLvIIII_7b.csv

C:\Users\user>.\automated-plan-checking>python app.py --inputs Resources/Input --format csv
What is the case number for Resources/Input\YellowLvIIII_7a.dcm? 3
Extracted to file ./Reports\YellowLvIIII_7a.csv
What is the case number for Resources/Input\YellowLvIIII_7b.dcm? 4
Extracted to file ./Reports\YellowLvIIII_7b.csv
```

• I have multiple individual RT-PLANs and multiple folders of RT-PLANs with the same case

python app.py --input [FOLDER 1] [FOLDER 2] [FILE 1] [FILE 2] [etc...] -c [NUMBER]

Example: python app.py --inputs Resources/Input OTHER_DICOM_FOLDER --format csv --case_number 6

```
C:\Users\user>.\automated-plan-checking>python app.py --inputs Resources/Input \DICOM_files_test --format csv --case_number 6
Extracted to file ./Reports\YellowLvIIII_7a.csv
Extracted to file ./Reports\YellowLvIIII_7b.csv
Extracted to file ./Reports\YellowLvIIII_6b.csv
```

- **I have multiple individual RT-PLANS and multiple folders of RT-PLANS with different cases**

python app.py --inputs [FOLDER 1],[CASE NUMBER] [FOLDER 2],[CASE NUMBER]

Example: python app.py --inputs Resources/Input,1 OTHER_DICOM_FOLDER,2 --format csv

```
(automated-plan-checking>python app.py --inputs Resources/Input,2 .\DICOM_files_test,3 --format csv
Extracted to file ./Reports\YellowLv\III_7a.csv
Extracted to file ./Reports\YellowLv\III_7b.csv
Extracted to file ./Reports\YellowLv\III_6b.csv
```

- **Specifying output location**

If there is a more convenient place to put the csv results, it can be specified with the --output or -o flag with '-o [PATH]', e.g. '-o C:\Documents\examplefolder'

Settings File

Some program arguments can also be specified in the settings file.

Notes:

The name of the folder can not contain space: "dicom files" will meet error.

Both slash and back slash can be used in file path: "F:/file; F:\file".

Test for commands can be found in the "Test" page.