Deliverable 2A - Individual Code Documentation

CITS5206 Professional Computing 2021
By: Clariza Look, 22860721
September 24, 2021

"Searchafile.py"

This python program searches the input file or folder name in the system's directory and returns the file's path or paths. This program will be used in the web server to search an input file from a "click" event in a button on the webpage.

1. Functions of this program include:

checkfile_extension(file)

- When the program is being executed, the input form will be prompt at the python console for the user to enter the file or folder name to be searched
- This program will check if the input "file or folder" name is a file (a filename which has an extension) or a "folder directory" (a filename which does not have an extension). It is key-sensitive on the inputs.
- It receives a parameter called "file" which is the input file or folder name from the user
- This function will return "find_files" function if it identifies the filename is a file or returns a "find_folder" function if it identifies the filename is a folder directory

find_files(filename, search_path)

- This function will be called when the *checkfile_extension(file)* function identifies that the input is a filename that has an extension
- It takes two parameters *(filename, search_path)* in which the *filename* refers to the input file and the *search_path* refers to the root of the directory where the program is executed.
- This function will return the path of the file if it exists, otherwise, it will return a statement "File is not found in this directory"

find_folder(filename, search_path)

- This function will be called when the *checkfile_extension(file)* function identifies that the input is a filename that has NO extension (which means, input is a folder name)
- It takes two parameters *(filename, search_path)* in which the *filename* refers to the input file and the *search_path* refers to the root of the directory where the program is executed.
- This function will return the path of the folder if it exists, otherwise, it will return a statement "File is not found in this directory"

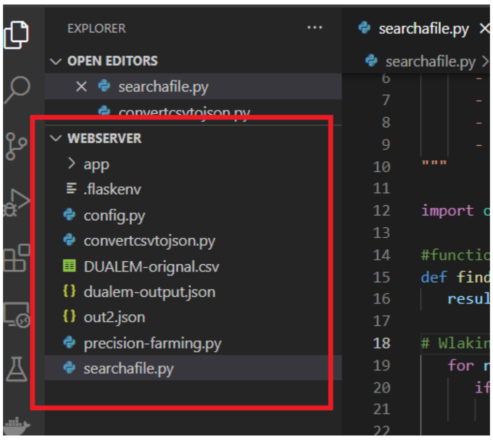
2. How to use

- Execute the program "searchafile.py"
- Enter necessary inputs in the test cases

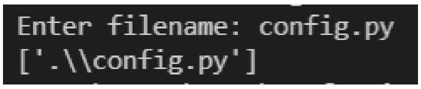
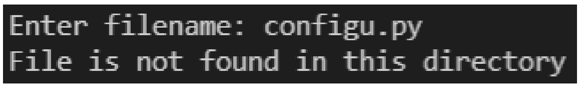
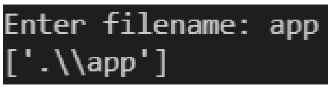
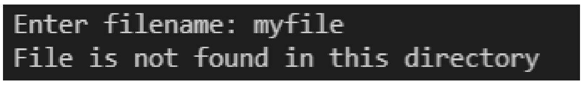
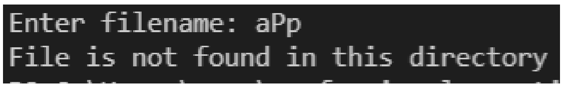
3. **Test Cases:**

- Inputs / Outputs

Assuming these are the files within the "webserver" directory

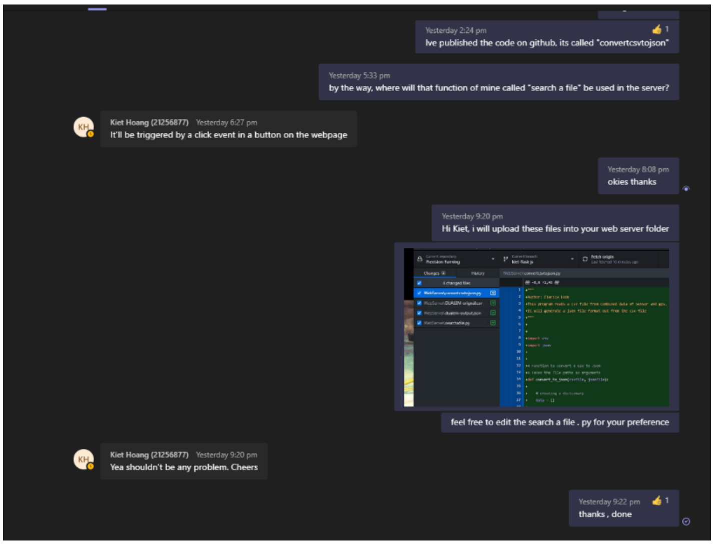


```
        -
        -
        -
"""

import c

#functio
def find
    resul

# Wlakin
    for r
        if
```

Input	Expected Output
Enter any filename (with correct case) with an extension that is part of the webserver directory, example: "config.py"	 Enter filename: config.py ['.\\config.py']
Enter any filename (with correct case) with an extension that can is NOT part of the webserver directory, example: "configu.py"	 Enter filename: configu.py File is not found in this directory
Enter any folder name (with correct case), an input without an extension that is part of the webserver directory, example: "app"	 Enter filename: app ['.\\app']
Enter a file name that is not in the directory, it should output "File not found in the dir"	 Enter filename: myfile File is not found in this directory
Enter any folder name (with WRONG case), an input without an extension that is part of the webserver directory, example: "aPp" , it should output "File not found in the dir"	 Enter filename: aPp File is not found in this directory

4. **Evidence of effective testing and integration of code**
    - Link to github merged in web server file repo
        - https://github.com/CITS5206/Precision-Farming/blob/kiet-flask-js/WebServer/searchafile.py

5. **Extent to which the planned goals for Deliverable 2 were met. Ability to communicate with the team and adjust plans as required. An updated realistic plan is provided for the final iteration of the project.**



Yesterday 2:24 pm
Ive published the code on github, its called "convertcsvtojson"

Yesterday 5:33 pm
by the way, where will that function of mine called "search a file" be used in the server?

Kiet Hoang (21256877) Yesterday 6:27 pm
It'll be triggered by a click event in a button on the webpage

Yesterday 8:08 pm
okies thanks

Yesterday 9:20 pm
Hi Kiet, i will upload these files into your web server folder

feel free to edit the search a file . py for your preference

Kiet Hoang (21256877) Yesterday 9:20 pm
Yea shouldn't be any problem. Cheers

Yesterday 9:22 pm
thanks , done

- The group meets up almost 2-3 times a week to discuss progress

Meeting 1 in week 7	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%207/Minutes-Week-07.1.docx?d=wf437abf706294f05bc4027eabf5231af&csf=1&web=1&e=JbVv81
Meeting 2 in week 7	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%207/Minutes-Week-07.2.docx?d=wec0942d5b296470a907e53c44170c6b5&csf=1&web=1&e=lLSNdV
Meeting 1 in week 8	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%208/Minutes-Week-08.1.docx?d=wa6abb9962c53468491db0f792b5133bb&csf=1&web=1&e=a8tG2b
Meeting 2 in week 8	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%208/Minutes-Week-08.2.docx?d=we0d3ddf6613744c79c006e5aa58d19ff&csf=1&web=1&e=jeX3Nk
Meeting 3 in week 8	Thursday

Code Snippet

```
import os

#function that searches for the file in the dir
def find_files(filename, search_path):
   result = []
# Walking top-down from the root
   for root, dir, files in os.walk(search_path):
      if filename in files:
         result.append(os.path.join(root, filename))
   if not result:
         return ("File is not found in this directory")
   else:
      return (result)
#function that searches for the folder in the dir
def find_folder(filename, search_path):
   result = []
# Walking top-down from the root
   for root, dir, files in os.walk(search_path):
      if filename in dir:
         result.append(os.path.join(root, filename))

   if not result:
         return ("File is not found in this directory")
   else:
      return (result)
#function that checks file extension, if there is extension,
#then the input is a file, else input is folder
def checkfile_extension(file):
   name, extension = os.path.splitext(file)
   #print("Name of File: ",name, "exention is: ",extension)
   if not extension: #if extension is empty
      print(find_folder(file,"."))
   else:
      print(find_files(file,"."))
### Main ####
var = input("Enter filename: ")
checkfile_extension(var)
```

“Convertcsvtojson.py”

This python program will read a csv file from the combined data of sensor and GPS modules. It will generate a json file format out from the csv file. The file will be used in the web server.

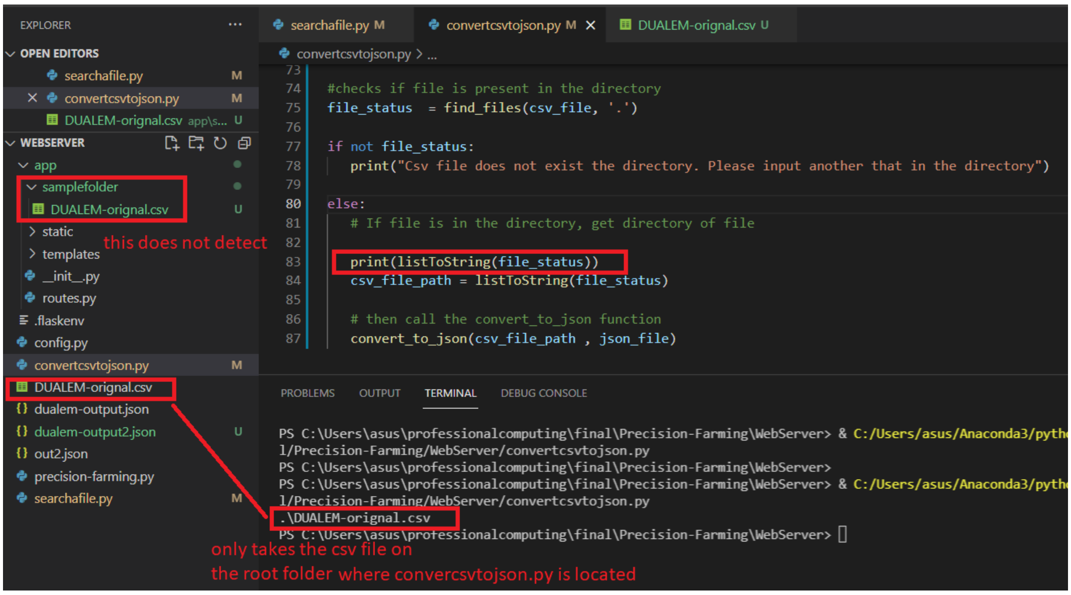
Requirement to execute this file is the “.csv” file with data from both Dualem sensor and GPS modules.

The program will return a “json” output file that highlights the “latitude” and “longitude” of the GPS module together with other information. Both “latitude” and “longitude” information from the json file will be used to map the location of the GPS and sensor modules and be able to put a marker on the base map visualization when the soil moisture survey is being performed by the users.

1. Functions of this program include:

find_files(filename, search_path)

- This function will be called when the to check if the csv input file exists in the current directory where the “convertcsvtojson.py”
- It takes two parameters *(filename, search_path)* in which the *filename* refers to the input file and the *search_path* refers to the root of the directory where the program is executed.
- This function will return the path of the file if it exists, otherwise, it will return a statement "File is not found in this directory"
- If there are two files of the same name but different folders, only the file on the directory where the “convertcsvtojson.py” is located will be identified and used.



```
#checks if file is present in the directory
file_status  = find_files(csv_file, '.')

if not file_status:
    print("Csv file does not exist the directory. Please input another that in the directory")

else:
    # If file is in the directory, get directory of file

    print(listToString(file_status))
    csv_file_path = listToString(file_status)

    # then call the convert_to_json function
    convert_to_json(csv_file_path , json_file)
```

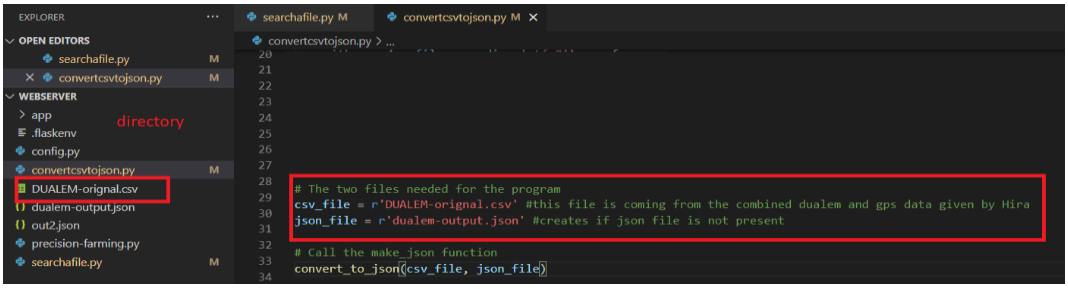
```
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Anaconda3/pyth
l/Precision-Farming/WebServer/convertcsvtojson.py
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer>
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Anaconda3/pyth
l/Precision-Farming/WebServer/convertcsvtojson.py
.\DUALEM-orignal.csv
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> 
```

this does not detect

only takes the csv file on
the root folder where convercsvtojson.py is located

convert_to_json(csvfile, jsonfile)

- Before this function can be executed, it requires two input parameter – csv file name path and the json file. It is assumed the csv file is placed in the directory were the "convertcsvtojson.py" is.



```
# The two files needed for the program
csv_file = r'DUALEM-orignal.csv' #this file is coming from the combined dualem and gps data given by Hira
json_file = r'dualem-output.json' #creates if json file is not present

# Call the make_json function
convert_to_json(csv_file, json_file)
```

- This program read the csv file and will create a dictionary of converted json content. It will use first column as a "key" for the json file assuming that the csv file has a column header named 'LATd'
- This function will return an output file that the name is pre-determined on the first part of this program (please refer to screenshot above *"json_file=dualem-output.json"*). The output file will be placed on the current directory where the *"convertcsvtojson.py*" program is located.

listToString(s)

- This function will convert the list input (s) to string. This function will be called after "file status" returns the path of the file which is in a list format e.g. '[.\\filename.csv]'

2. How to use

- Execute the program " *convertcsvtojson.py*"
- Enter necessary inputs in the test cases

3. Test Cases

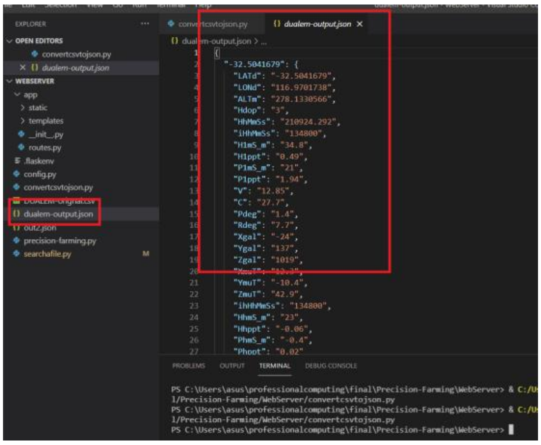
Inputs / Outputs

<table>
<tr><th>Input</th><th>Expected Output</th></tr>
<tr><td>

Placing a correct file that is present in the current directory where the .py is located

</td><td>

Program should work as normal and generate the json file with contents from the csv file



```
{
  "-32.5041679": {
    "LATd": "-32.5041679",
    "LONd": "116.9701738",
    "ALTm": "278.1330566",
    "Hdop": "3",
    "HhMmSs": "210924.292",
    "iHhMmSs": "134800",
    "H1mS_m": "34.8",
    "H1ppt": "0.49",
    "P1mS_m": "21",
    "P1ppt": "1.94",
    "V": "12.85",
    "C": "27.7",
    "Pdeg": "1.4",
    "Rdeg": "7.7",
    "Xgal": "-24",
    "Ygal": "137",
    "Zgal": "1019",
    "XmuT": "12.3",
    "YmuT": "-10.4",
    "ZmuT": "42.9",
    "ihHhMmSs": "134800",
    "HhmS_m": "23",
    "Hhppt": "-0.06",
    "PhmS_m": "-0.4",
    "Phppt": "0.02"
```

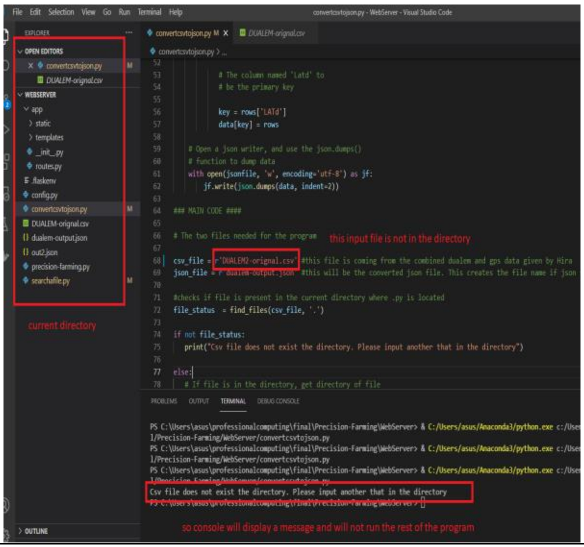
```
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/U
1/Precision-Farming/WebServer/convertcsvtojson.py
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/U
1/Precision-Farming/WebServer/convertcsvtojson.py
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> ▌
```

</td></tr>
<tr><td>

Assigning a csv file that is not found in the current directory where the .py is located

</td><td>

An error message will pop up saying tha “Csv file is not found” and will not continue to convert to json file.



```
            # The column named 'Latd' to
            # be the primary key

            key = rows['LATd']
            data[key] = rows

    # Open a json writer, and use the json.dumps()
    # function to dump data
    with open(jsonfile, 'w', encoding='utf-8') as jf:
        jf.write(json.dumps(data, indent=2))

### MAIN CODE ####

# The two files needed for the program

csv_file = r'DUALEM2-orignal.csv' #this file is coming from the combined dualem and gps data given by Hira
json_file = r'dualem-output.json' #this will be the converted json file. This creates the file name if json

#checks if file is present in the current directory where .py is located
file_status  = find_files(csv_file, '.')

if not file_status:
  print("Csv file does not exist the directory. Please input another that in the directory")

else:
  # If file is in the directory, get directory of file
```

this input file is not in the directory

current directory

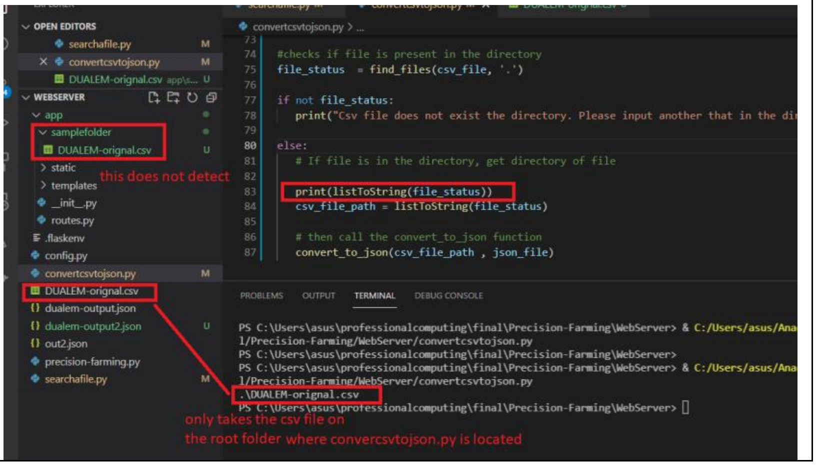
```
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Anaconda3/python.exe c:/Use
1/Precision-Farming/WebServer/convertcsvtojson.py
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Anaconda3/python.exe c:/Use
1/Precision-Farming/WebServer/convertcsvtojson.py
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Anaconda3/python.exe c:/Use
1/Precision-Farming/WebServer/convertcsvtojson.py
Csv file does not exist the directory. Please input another that in the directory
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> ▯
```

so console will display a message and will not run the rest of the program

</td></tr>
<tr><td>

Have two files of the same names but on different folders (one is on the root folder where the .py is located, and another one is on sub directory)

</td><td>



this does not detect

```
#checks if file is present in the directory
file_status  = find_files(csv_file, '.')

if not file_status:
  print("Csv file does not exist the directory. Please input another that in the di

else:
  # If file is in the directory, get directory of file

  print(listToString(file_status))
  csv_file_path = listToString(file_status)

  # then call the convert_to_json function
  convert_to_json(csv_file_path , json_file)
```

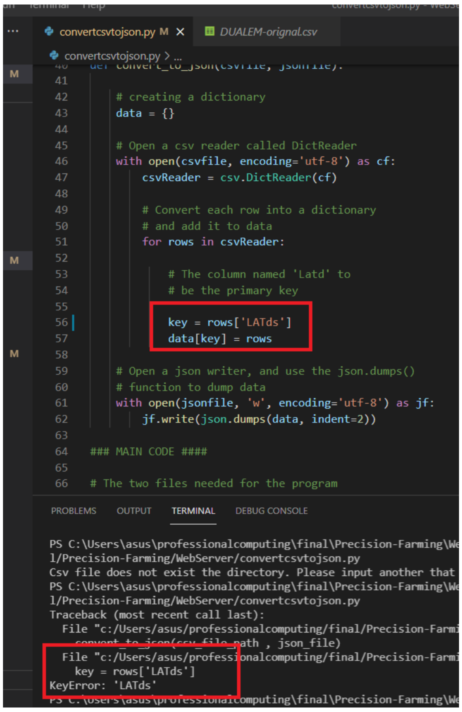
```
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Ana
1/Precision-Farming/WebServer/convertcsvtojson.py
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer>
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Ana
1/Precision-Farming/WebServer/convertcsvtojson.py
.\DUALEM-orignal.csv
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> ▯
```

only takes the csv file on
the root folder where convercsvtojson.py is located

</td></tr>
</table>

<table>
<tr>
<td></td>
<td>- Only the file on the directory where the “convertcsvtojson.py” is located will be identified and used</td>
</tr>
<tr>
<td>Checking the csv file if it has a “LATd” key in its header columns</td>
<td>

- A key error will show in the console

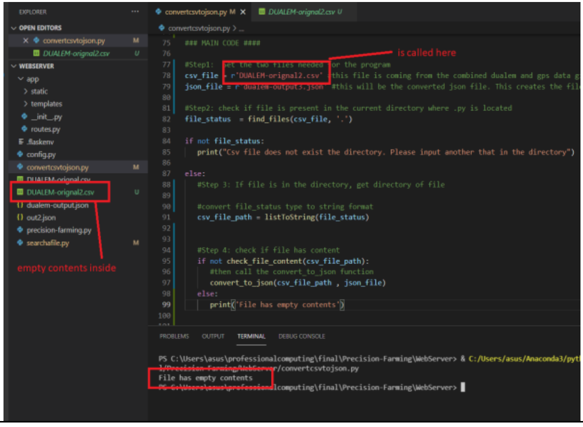


```python
def convert_to_json(csvfile, jsonfile):

    # creating a dictionary
    data = {}

    # Open a csv reader called DictReader
    with open(csvfile, encoding='utf-8') as cf:
        csvReader = csv.DictReader(cf)

        # Convert each row into a dictionary
        # and add it to data
        for rows in csvReader:

            # The column named 'Latd' to
            # be the primary key

            key = rows['LATds']
            data[key] = rows

    # Open a json writer, and use the json.dumps()
    # function to dump data
    with open(jsonfile, 'w', encoding='utf-8') as jf:
        jf.write(json.dumps(data, indent=2))

### MAIN CODE ####

# The two files needed for the program
```

```
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\We
l/Precision-Farming/WebServer/convertcsvtojson.py
Csv file does not exist the directory. Please input another that
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\We
l/Precision-Farming/WebServer/convertcsvtojson.py
Traceback (most recent call last):
  File "c:/Users/asus/professionalcomputing/final/Precision-Farmi
    convert_to_json(csv_file_path , json_file)
  File "c:/Users/asus/professionalcomputing/final/Precision-Farmi
    key = rows['LATds']
KeyError: 'LATds'
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\We
```

</td>
</tr>
<tr>
<td>Placing a correct csv file that is present in the current directory where the .py is located but has empty contents</td>
<td>

Console will show a message “File has empty contents and will not proceed to the next steps



```python
### MAIN CODE ####

#Step1: get the two files needed for the program
csv_file = r'DUALEM-orignal2.csv' #this file is coming from the combined dualem and gps data g
json_file = r'dualem-output3.json' #this will be the converted json file. This creates the fil

#Step2: check if file is present in the current directory where .py is located
file_status  = find_files(csv_file, '.')

if not file_status:
    print("Csv file does not exist the directory. Please input another that in the directory")

else:
    #Step 3: If file is in the directory, get directory of file

    #convert file_status type to string format
    csv_file_path = listToString(file_status)


    #Step 4: check if file has content
    if not check_file_content(csv_file_path):
        #then call the convert_to_json function
        convert_to_json(csv_file_path , json_file)
    else:
        print('File has empty contents')
```

```
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer> & C:/Users/asus/Anaconda3/pyt
l/Precision-Farming/WebServer/convertcsvtojson.py
File has empty contents
PS C:\Users\asus\professionalcomputing\final\Precision-Farming\WebServer>
```

</td>
</tr>
</table>

4. Evidence of effective testing and integration of code

- Code is found in the merged file in github
    - https://github.com/CITS5206/Precision-Farming/blob/kiet-flask-js/WebServer/convertcsvtojson.py

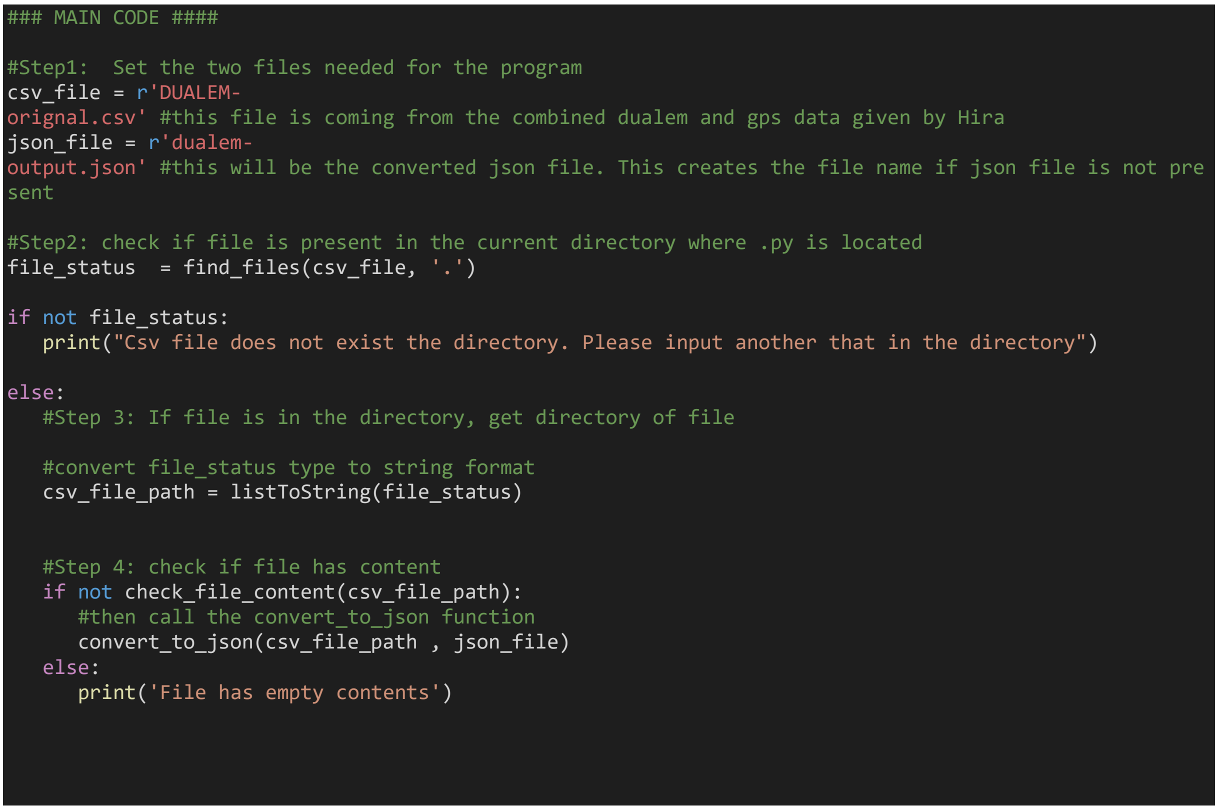
5. Extent to which the planned goals for Deliverable 2 were met. Ability to communicate with the team and adjust plans as required. An updated realistic plan is provided for the final iteration of the project.

- The group meets up almost 2-3 times a week to discuss progress

Meeting 1 in week 7	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%207/Minutes-Week-07.1.docx?d=wf437abf706294f05bc4027eabf5231af&csf=1&web=1&e=JbVv81
Meeting 2 in week 7	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%207/Minutes-Week-07.2.docx?d=wec0942d5b296470a907e53c44170c6b5&csf=1&web=1&e=lLSNdV
Meeting 1 in week 8	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%208/Minutes-Week-08.1.docx?d=wa6abb9962c53468491db0f792b5133bb&csf=1&web=1&e=a8tG2b
Meeting 2 in week 8	https://uniwa.sharepoint.com/:w:/r/teams/CITS5206SEM-220212-PrecisionFarming/Shared%20Documents/Precision%20Farming/Week%208/Minutes-Week-08.2.docx?d=we0d3ddf6613744c79c006e5aa58d19ff&csf=1&web=1&e=jeX3Nk
Meeting 3 in week 8	Thursday

Code snippet

```python
import os
import csv
import json
import re

#checks if input file has contents
def check_file_content(f):
   # check if size of file is 0
   content = open(f, 'r').read()
   if re.search(r'^\s*$', content):
      return True #true if file has no content
   else:
      return False #true if file has content

# Function to convert list to string
def listToString(s):

    # initialize an empty string
    str1 = ""
    # traverse in the string
    for ele in s:
        str1 += ele
    # return string
    return str1

#function that searches for the file in the dir
def find_files(filename, search_path):
   result = []

# Walking top-down from the root
   for root, dir, files in os.walk(search_path):
      if filename in files:
         result.append(os.path.join(root, filename))
      return (result)

# Function to convert a CSV to JSON
# Takes the file paths as arguments
def convert_to_json(csvfile, jsonfile):

    # creating a dictionary
    data = {}

    # Open a csv reader called DictReader
    with open(csvfile, encoding='utf-8') as cf:
        csvReader = csv.DictReader(cf)

        # Convert each row into a dictionary
        # and add it to data
        for rows in csvReader:

            # The column named 'Latd' to
            # be the primary key

            key = rows['LATd']
            data[key] = rows

    # Open a json writer, and use the json.dumps()
    # function to dump data
    with open(jsonfile, 'w', encoding='utf-8') as jf:
        jf.write(json.dumps(data, indent=2))
```



```
### MAIN CODE ####

#Step1:  Set the two files needed for the program
csv_file = r'DUALEM-orignal.csv' #this file is coming from the combined dualem and gps data given by Hira
json_file = r'dualem-output.json' #this will be the converted json file. This creates the file name if json file is not present

#Step2: check if file is present in the current directory where .py is located
file_status  = find_files(csv_file, '.')

if not file_status:
   print("Csv file does not exist the directory. Please input another that in the directory")

else:
   #Step 3: If file is in the directory, get directory of file

   #convert file_status type to string format
   csv_file_path = listToString(file_status)


   #Step 4: check if file has content
   if not check_file_content(csv_file_path):
      #then call the convert_to_json function
      convert_to_json(csv_file_path , json_file)
   else:
      print('File has empty contents')
```