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*Date 2/6/2023*

*CSM3313*

*IOT COMPUTING*

*DR AHMAD SHUKRI BIN MOHD NOOR*

*OMAR ISMAIL ABDJALEEL ALOMORY*

*LAB 3(MP2)*

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## LAB 1: GETTING STARTED WITH WEB DEVELOPMENT

```
C:\Windows\System32\cmd.exe
gs > Manage App Execution Aliases.

C:\Users\PC 48\Desktop\Python\virtualenv>python --v
Python was not found; run without arguments to install from the Microsoft Store, or disable this shortcut from Settings
gs > Manage App Execution Aliases.

C:\Users\PC 48\Desktop\Python\virtualenv>pip install pyautogui
'pip' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\PC 48\Desktop\Python\virtualenv>py -m venv project3

C:\Users\PC 48\Desktop\Python\virtualenv>project3\Script\activate.bat
The system cannot find the path specified.

C:\Users\PC 48\Desktop\Python\virtualenv>project3\Scripts\activate.bat
(project3) C:\Users\PC 48\Desktop\Python\virtualenv>pip install flask
Collecting flask
  Downloading Flask-2.3.2-py3-none-any.whl (96 kB)
----- 96.9/96.9 kB 205.3 kB/s eta 0:00:00
Collecting Werkzeug>=2.3.3
  Downloading Werkzeug-2.3.4-py3-none-any.whl (242 kB)
----- 242.5/242.5 kB 337.5 kB/s eta 0:00:00
Collecting Jinja2>=3.1.2
  Downloading Jinja2-3.1.2-py3-none-any.whl (133 kB)
----- 133.1/133.1 kB 357.2 kB/s eta 0:00:00
Collecting itsdangerous>=2.1.2
  Downloading itsdangerous-2.1.2-py3-none-any.whl (15 kB)
Collecting click>=8.1.3
  Downloading click-8.1.3-py3-none-any.whl (96 kB)
----- 96.6/96.6 kB 459.3 kB/s eta 0:00:00
Collecting blinker>=1.6.2
  Downloading blinker-1.6.2-py3-none-any.whl (13 kB)
Collecting colorama
  Downloading colorama-0.4.6-py2.py3-none-any.whl (25 kB)
Collecting MarkupSafe>=2.0
  Downloading MarkupSafe-2.1.2-cp311-cp311-win_amd64.whl (16 kB)
Installing collected packages: MarkupSafe, itsdangerous, colorama, blinker, Werkzeug, Jinja2, click, flask
Successfully installed Jinja2-3.1.2 MarkupSafe-2.1.2 Werkzeug-2.3.4 blinker-1.6.2 click-8.1.3 colorama-0.4.6 flask-2.3.2 itsdangerous-2.1.2

[notice] A new release of pip available: 22.3.1 -> 23.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip

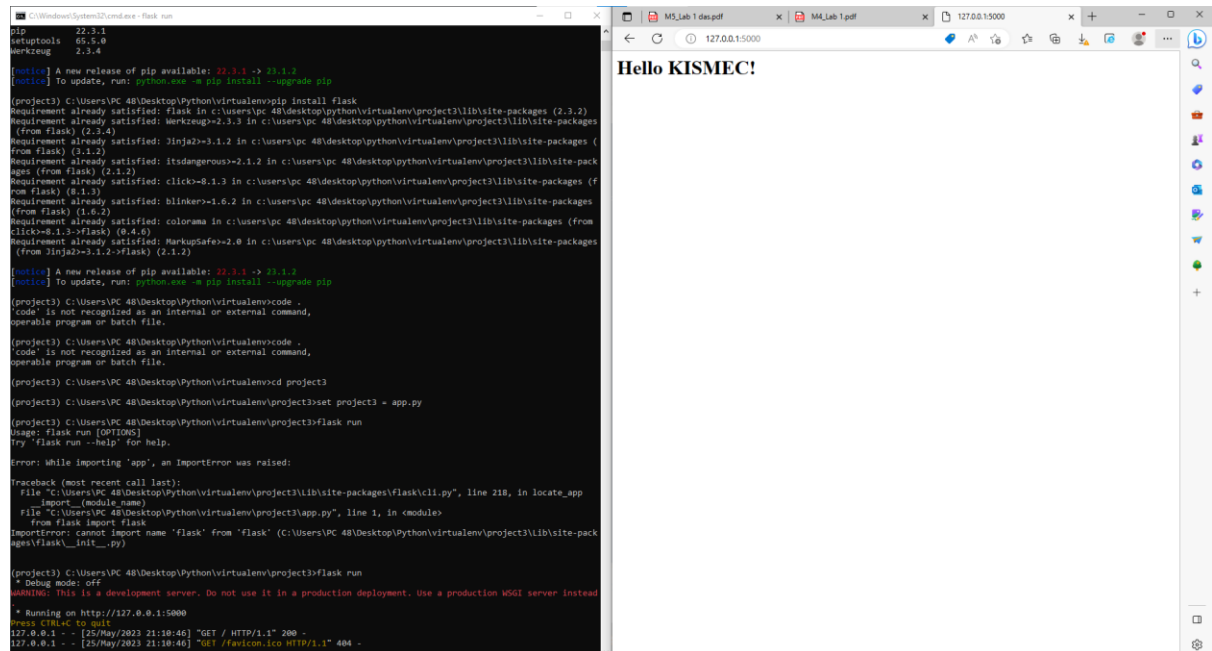
(project3) C:\Users\PC 48\Desktop\Python\virtualenv>pip list
Package           Version
-----
blinker           1.6.2
click             8.1.3
colorama          0.4.6
Flask             2.3.2
itsdangerous      2.1.2
Jinja2            3.1.2
MarkupSafe        2.1.2
pip              22.3.1
setuptools        65.5.0
Werkzeug          2.3.4

[notice] A new release of pip available: 22.3.1 -> 23.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip

(project3) C:\Users\PC 48\Desktop\Python\virtualenv>
```

Important note [install sublimetext.com//download\\_thanks?trget=win-x64](https://download.sublimetext.com//download_thanks?trget=win-x64)

## Configuring the environment and run app.py



The screenshot shows a Windows terminal window on the left and a web browser window on the right. The terminal window displays the following commands and output:

```
pip 22.3.1
setuptools 65.5.0
werkzeug 2.3.4

[notice] A new release of pip available: 22.3.1 -> 23.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip

(project3) C:\Users\PC 48\Desktop\Python\virtualenv\project3>pip install flask
Requirement already satisfied: flask in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (2.3.2)
Requirement already satisfied: Werkzeug>=2.3.3 in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (from flask) (2.3.4)
Requirement already satisfied: Jinja2>=3.1.2 in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (from flask) (3.1.2)
Requirement already satisfied: itsdangerous>=2.1.2 in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (from flask) (2.1.2)
Requirement already satisfied: click>=8.1.3 in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (from flask) (8.1.3)
Requirement already satisfied: blinker>=1.6.2 in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (from flask) (1.6.2)
Requirement already satisfied: colorama in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (from click>=8.1.3->flask) (0.4.6)
Requirement already satisfied: MarkupSafe>=2.0 in c:\users\pc 48\desktop\python\virtualenv\project3\lib\site-packages (from Jinja2>=3.1.2->flask) (2.1.2)

[notice] A new release of pip available: 22.3.1 -> 23.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip

(project3) C:\Users\PC 48\Desktop\Python\virtualenv\code >
'code' is not recognized as an internal or external command,
operable program or batch file.

(project3) C:\Users\PC 48\Desktop\Python\virtualenv\code >
'code' is not recognized as an internal or external command,
operable program or batch file.

(project3) C:\Users\PC 48\Desktop\Python\virtualenv>cd project3

(project3) C:\Users\PC 48\Desktop\Python\virtualenv\project3>set project3 = app.py

(project3) C:\Users\PC 48\Desktop\Python\virtualenv\project3>flask run
Usage: flask run [OPTIONS]
Try 'flask run --help' for help.

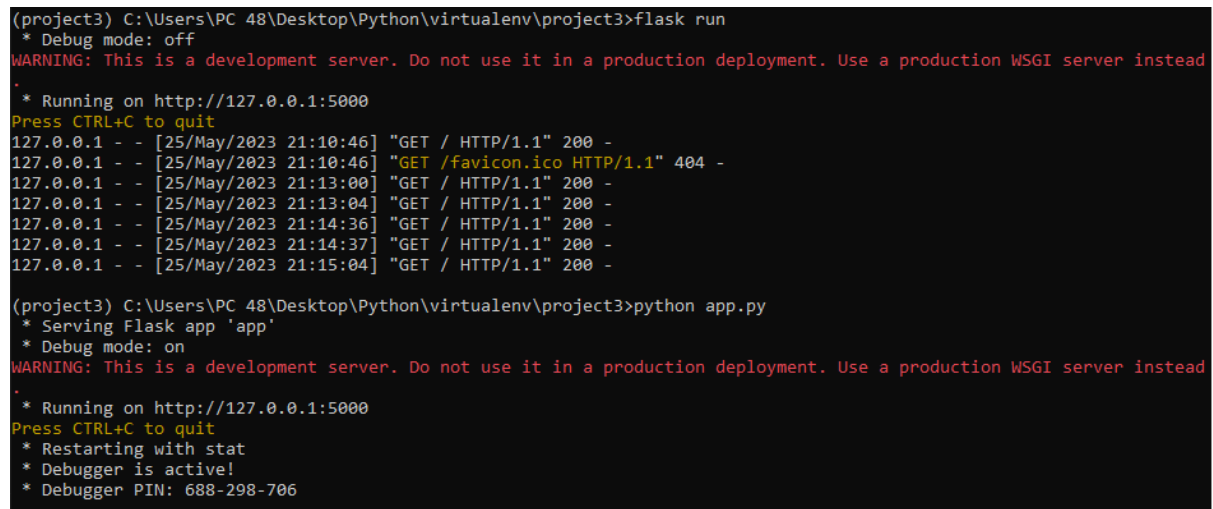
Error: While importing 'app', an ImportError was raised:

Traceback (most recent call last):
  File "C:\Users\PC 48\Desktop\Python\virtualenv\project3\lib\site-packages\flask\cli.py", line 218, in locate_app
    import_(module_name)
  File "C:\Users\PC 48\Desktop\Python\virtualenv\project3\app.py", line 1, in <module>
    from flask import flask
ImportError: cannot import name 'flask' from 'flask' (C:\Users\PC 48\Desktop\Python\virtualenv\project3\lib\site-packages\flask\_init_.py)

(project3) C:\Users\PC 48\Desktop\Python\virtualenv\project3>flask run
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
127.0.0.1 - - [25/May/2023 21:10:40] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [25/May/2023 21:10:40] "GET /favicon.ico HTTP/1.1" 404 -
```

The web browser window on the right shows the URL `127.0.0.1:5000` and displays the text **Hello KISMEC!**

## Run in debug mode

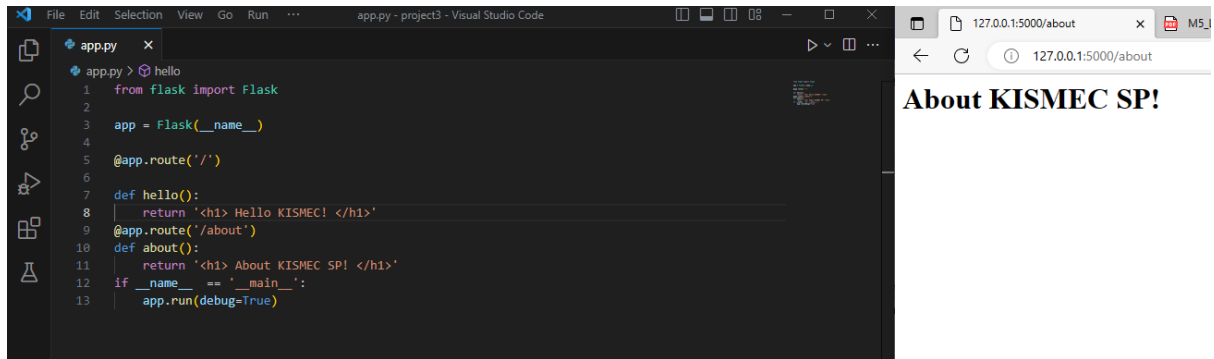


The screenshot shows a Windows terminal window with the following commands and output:

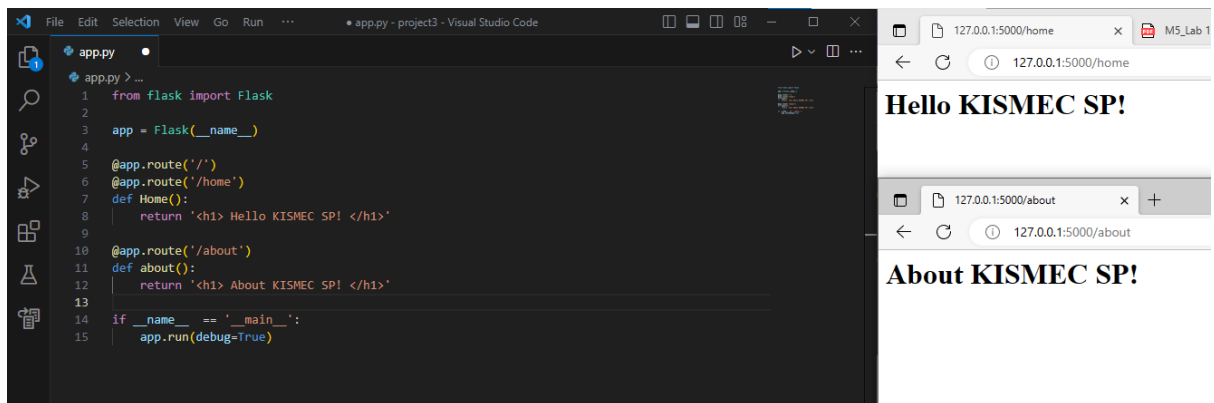
```
(project3) C:\Users\PC 48\Desktop\Python\virtualenv\project3>flask run
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
127.0.0.1 - - [25/May/2023 21:10:46] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [25/May/2023 21:10:46] "GET /favicon.ico HTTP/1.1" 404 -
127.0.0.1 - - [25/May/2023 21:13:00] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [25/May/2023 21:13:04] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [25/May/2023 21:14:36] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [25/May/2023 21:14:37] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [25/May/2023 21:15:04] "GET / HTTP/1.1" 200 -

(project3) C:\Users\PC 48\Desktop\Python\virtualenv\project3>python app.py
* Serving Flask app 'app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 688-298-706
```

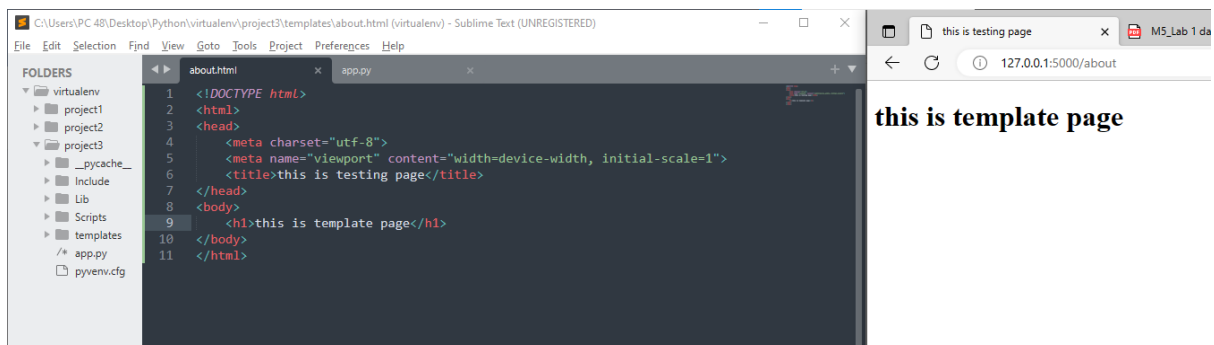
## Create page with a route



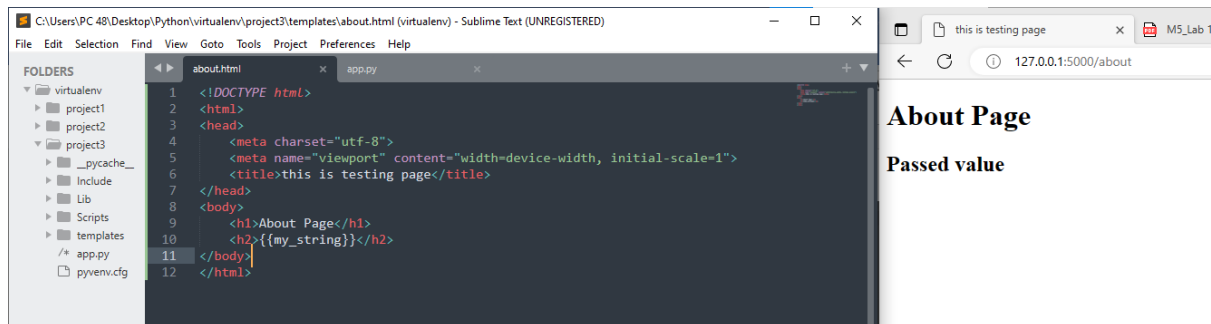
## Running different routes (home, about)



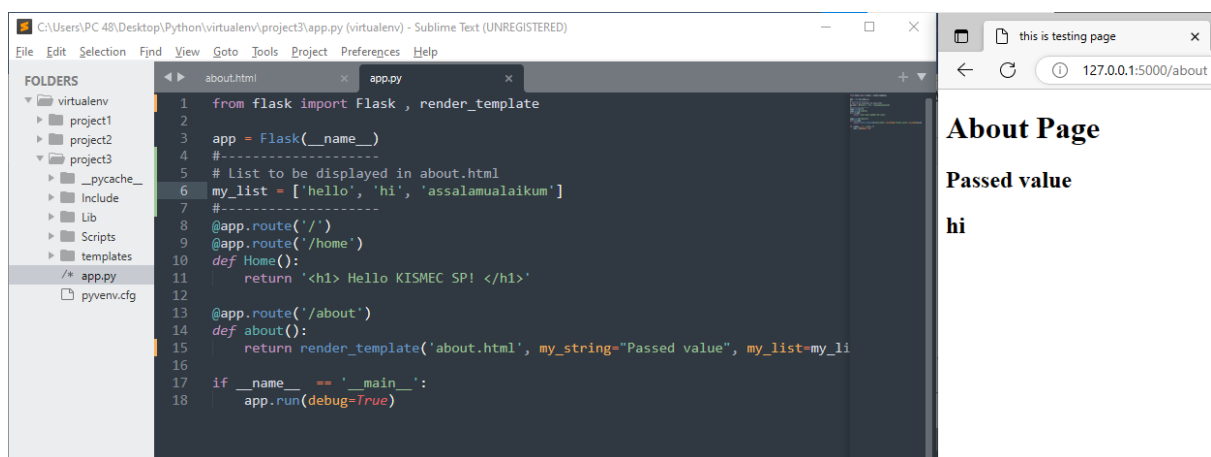
## Running template page



## Passing values to app.py and then display it in about.html



## Passing list to about.html and display the first index.



## Displaying dictionary

### About Page

Passed value

hi

wijdan

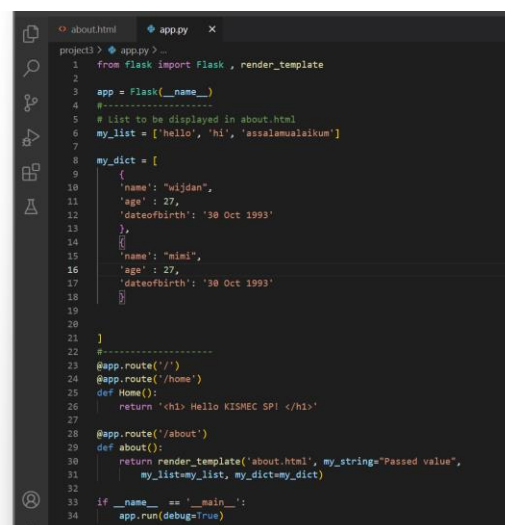
27

30 Oct 1993

mimi

27

30 Oct 1993



## LAB 2: HTML AND JINJA TEMPLATING FOR WEB APPLICATION

### Installing tool

```
C:\Windows\System32\cmd.e x + v
(project3) C:\Users\komar\OneDrive - umt.edu.my\Semester 4\CSM3313 IOT COMPUTING by AHMAD SHUKRI BIN MOHD NOOR\Lab s\lab
5 IoT\first section\Python\virtualenv\project3>pip install tool
Collecting tool
  Downloading tool-0.8.0.tar.gz (51 kB)
    51.6/51.6 kB 1.3 MB/s eta 0:00:00
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Collecting argh>=0.2.0 (from tool)
  Downloading argh-0.28.1-py3-none-any.whl (40 kB)
    40.5/40.5 kB ? eta 0:00:00
Collecting pydispatcher>=2.0.1 (from tool)
  Downloading PyDispatcher-2.0.7-py3-none-any.whl (12 kB)
Collecting pyyaml>=3.0.8 (from tool)
  Downloading PyYAML-6.0-cp310-cp310-win_amd64.whl (151 kB)
    151.7/151.7 kB 4.4 MB/s eta 0:00:00
Building wheels for collected packages: tool
  Building wheel for tool (pyproject.toml) ... done
  Created wheel for tool: filename=tool-0.8.0-py3-none-any.whl size=70565 sha256=66772258cd272efdb58c6298d653d864349c4b3
04d927e395b6139fb14bb9dffa
  Stored in directory: c:\users\komar\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcac
he\local\pip\cache\wheels\77\e3\85\55d80f5c19223845ba8c7e581b152b047394e9487416ba853b
Successfully built tool
Installing collected packages: pydispatcher, pyyaml, argh, tool
Successfully installed argh-0.28.1 pydispatcher-2.0.7 pyyaml-6.0 tool-0.8.0

(project3) C:\Users\komar\OneDrive - umt.edu.my\Semester 4\CSM3313 IOT COMPUTING by AHMAD SHUKRI BIN MOHD NOOR\Lab s\lab
5 IoT\first section\Python\virtualenv\project3>
```

The output of base.html in cmd.

```
(project3) C:\Users\komar\OneDrive - umt.edu.my\Semester 4\CSM3313 IOT COMPUTING by AHMAD SHUKRI BIN MOHD NOOR\Lab s\lab Module 5\second section\Python\virt
ualenv\project3>python app.py
* Serving Flask app 'app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.96.215:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 396-937-198
```

Output in the browser

---

### Flask Template Example

Output of hello/Visitor<Omar>

---

**Welcome to My Flask Main Page !**

**Hello Omar !**

Output of dashboard.html

---

**Welcome To IoT Restaurant !**

**Restaurant Table Layout will be done here !**

---

---

## LAB 3: WEB APPLICATION PAGE STYLING USING CSS

Jumbotron styling

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Welcome To IoT Restaurant !

Restaurant Table Layout will be done here !

Displaying tables.html with all extends files

Welcome To IoT Restaurant !

Table A

Table B

Table C

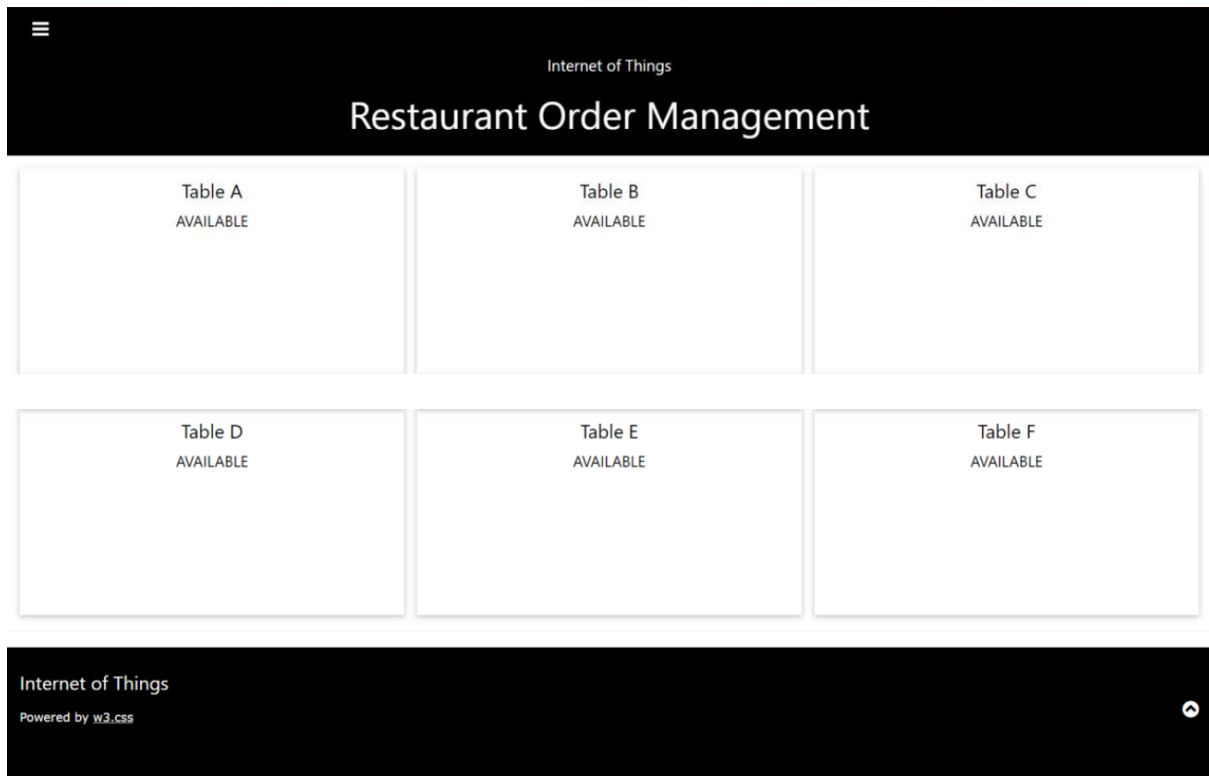
Table D

Table E

Information

---

## LAB 4: WEB APPLICATION JAVASCRIPT AND JQUERY / AJAX



### Connect to wifi

```
main.py X
1 import os
2 import network
3 import urequests
4
5 wl = "huawei"
6 wlpw = "bintang85"
7 wlan = network.WLAN(network.STA_IF)
8 wlan.active(True)
9 wlan.connect(wl, wlpw)
10 while not wlan.isconnected():
11     pass
12
13 print(wlan.ifconfig())
14 websvr = "http://192.168.43.242:5000/"
15 rsps = urequests.get(websvr)
16 print(rsps.content)
17
18 print(os.listdir('.'))
19
```



## Upycraft terminal output for connecting the wifi

```
Ready to download this file, please wait!
```

download ok

```
exec(open('main.py').read()).globals())  
('192.168.43.150','255.255.255.0','192.168.43.1','192.168.43.1')  
b<IDIOCTYPE.html>b<n-ctrlm<ln(class=)Dashboard -  
CSM3401\InJomMa'<nhref=https://www.w3schools.com/w3css/4w3.css></n-link  
com/ajax/libs/font-awesome/4.3.0/css/font-awesome.min.js?id=w3SideBar">lnln-button class=w3-bar-item w3-  
bunch<Header -->ln<header class=w3-container w3-theme w3-padding<lnid=myHeader">lnln<  
onclick=w3_open()>ln<div class=fa fa-bars<xlarge<lnlnw3-button w3-theme"&></lnlnln<div class=w3-  
center">ln<h4>Internet of Things<h4>lnln<h1 class=w3-xlarge ln3-animate__bottom">Restaurant Order  
Management<h1>lnln<div/>ln</header>lnln<div class=w3-row-padding w3-center w3-margin-top">lnlnln<div  
class=w3-third">lnlnlt<div class=w3-card w3-container" style=min-height: 260px;">lnlnlttt<h3>Table  
A<br<small>AVAILABLE</small><h3><br>ln ln ln ln <div/>ln <div/>ln lnlt<div  
class=w3-third">lnlnlt<div class=w3-card w3-container" style=min-height: 260px;">lnlnlttt<h3>Table  
B<br<small>AVAILABLE</small><h3><br>ln ln ln ln <div/>ln <div/>ln lnlt<div  
class=w3-third">lnlnlt<div class=w3-card w3-container" style=min-height: 260px;">lnlnlttt<h3>Table  
C<br<small>AVAILABLE</small><h3><br>ln ln ln ln <div/>ln <div/>ln lnlt<div  
class=w3-third">lnlnlt<div class=w3-card w3-container" style=min-height: 260px;">lnlnlttt<h3>Table  
D<br<small>AVAILABLE</small><h3><br>ln ln ln ln <div/>ln <div/>ln lnlt<div  
class=w3-third">lnlnlt<div class=w3-card w3-container" style=min-height: 260px;">lnlnlttt<h3>Table  
E<br<small>AVAILABLE</small><h3><br>ln ln ln ln <div/>ln <div/>ln lnlt<div  
class=w3-third">lnlnlt<div class=w3-card w3-container" style=min-height: 260px;">lnlnlttt<h3>Table  
F<br<small>AVAILABLE</small><h3><br>ln ln ln ln <div/>ln <div/>ln  
ln<div/>lnln<h4>Footer -->ln<footer class=w3-container w3-theme-dark w3-padding<ln16">ln<h3>Internet  
of Things {CSM 3401}</h3>ln<p>Powered by a href=https://www.w3schools.com/w3css/default.asp target=_blank">w3.css</a> <p>ln<div style=position relative bottom 55px;" class=w3-tooltip w3-right">ln  
<span class=w3-text w3-theme-light w3-padding">Go To Top</span>ln<a class=w3-text-white">  
href=#myHeader"><span class=w3-xlarge">ln<a class=fa fa-chevron-circle-up"></a></span></a>ln  
<div/>ln</footer>lnln<script for Sidebar, Tabs, Accordions, Progress bars and Slideshows -->ln<script>ln // Side  
navigation<ln function w3_open() ln var x = document.getElementById("mySideBar") ln x.style.width =
```

The output shows the content of dashboard.html.

## Put HTTPRequest Method, Choose Table and Place Order

```
>>> uri = websvr + 'api/table/B/status/0'
>>> rspi = urequests.put(uri)
>>>
```

## Output on browser



Table B now changed status from available to wait for order.

New Order for Table B

Pick your menu

Food

No	Menu	Quantity
1	Cheesy-O-Burger Meal	<input type="text" value="0"/>
2	Hotouch Burger Meal	<input type="text" value="0"/>
3	Lucky Plate Meal	<input type="text" value="0"/>
4	Chick-A-Licious with Black pepper Sauce	<input type="text" value="0"/>
5	Chick-A-Licious with Mushroom Sauce	<input type="text" value="0"/>
6	Double Chicken Delight:	<input type="text" value="0"/>
7	Fish N Chips Meals	<input type="text" value="0"/>
8	JomMakan Nasi Kandar	<input type="text" value="0"/>
9	Jom Makan Nasi Ayam	<input type="text" value="0"/>
10	Bubur Ayam Meal	<input type="text" value="0"/>
11	Bubur Pedas Meal	<input type="text" value="0"/>

0

Drink

No	Menu	Quantity
1	Coca-Cola	<input type="text" value="0"/>
2	Fanta Strawberry	<input type="text" value="0"/>
3	Fanta Grape	<input type="text" value="0"/>
4	Minute Maid Fresh Orange	<input type="text" value="0"/>
5	Heaven and Earth Iced Lemon	<input type="text" value="0"/>
6	Nescafe Tarik	<input type="text" value="0"/>
7	Tea Tarik	<input type="text" value="0"/>
8	Milo	<input type="text" value="0"/>
9	Nescafe Ice	<input type="text" value="0"/>
10	Tea Ice	<input type="text" value="0"/>
11	Milo Ice	<input type="text" value="0"/>

Place Order

Customer can place order here

No	Menu	Quantity
1	Cheesy-O-Burger Meal	<input type="text" value="1"/>
2	Hotouch Burger Meal	<input type="text" value="0"/>

Place Order

No	Menu	Quantity
1	Coca-Cola	<input type="text" value="1"/>
2	Fanta Strawberry	<input type="text" value="0"/>

Place Order

Internet of Things		
Restaurant Order Management		
Thank you for your order. Here's your receipt:		
Food		
No	Menu	Quantity
1	Cheesy-O-Burger Meal	1
Drink		
No	Menu	Quantity
1	Coca-Cola	1

Order are now successfully placed.

### Get HTTPRequest Method, Display Ordered Food and Drinks

```
>>> uri = websvr + 'api/table/B'
>>> rsps = urequests.get(uri)
>>> print(rsps.content)
b'\n "drinks": {\n  "itemdrink": {\n    "Coca-Cola"\n  },\n  "qdrink": {\n    1\n  }\n },\n "food": {\n  "itemfood": {\n    "Cheesy-O-Burger Meal"\n  },\n  "qfood": {\n    1\n  }\n },\n "status": "ORDERED",\n "table": "B",\n "time": "17 June 2023, 17:41:23"\n}\n'
>>>
```

Internet of Things		
Restaurant Order Management		
Table A AVAILABLE	Table B ORDERED  Food 1 x Cheesy-O-Burger Meal Drinks 1 x Coca-Cola Last Updated 17 June 2023, 17:41:23	Table C AVAILABLE
		Table D AVAILABLE

Status now changed from wait for order to ordered with the order that placed earlier.