**PROGRAMMING TASKS**

**Task1:** **How I executed the task:**

First I created a simple HTML page to upload file, named page1.html, then in task1\_2\_3.py file, I made a route(API) and through render\_templates, I have access to page1.html. Then I made second route for the upload of a file.

**Libraries, resources & imports:**

I import flask, and then from flask, I import render\_template and resquest(to request a file from computer). And I also use Jinja2 templates to display (No. of Names = siddique) in interger value.

**Task2:** **How I executed the task:**

First I made a list of names, Then loop(for) through in names and in loop when I get the first name I use the split() method to split the list item into 2 parts, after that I assign the firstpart with fname variable and for variable lastname, I use join() method to join the space which is after the firstpart and then join the lastpart of the list. Then I made an if statement, if lastname == ‘siddique’ then increment the counter value.

**Libraries, resources & imports:**

Python

**Issues that I met during the process:**

No issue.

**Task3:** **How I executed the task:**

I copy the task2 program and past2 in 2nd route in function named”def upload()” and through render\_template I passed the count variable which contains the no. of person names that matches the last name siddique, and passed this variable to page2.html. where I use jinja2 template to display the integer value.

**Libraries, resources & imports:**

Python, flask, html, jinja2

**Issues that I met during the process:**

There was an issue that how do I return the value of count to html page. Firstly it returns the count in cmd and also the names of the persons, but it didn’t show on the page. Then after searching I read about jinja templates, and then I did it.

**Task5:** **How I executed the task:**

First I made a list of dictionaries containing the to-do’s. Each todo item has 3attributes, title, id, done(that means the status of todo item is completed or not) Then I made 5routes. 1st route to display all the todo items in the list. 2nd to display specific todo item with the help of id. 3rd to create a new todo item. To assign id to new created task, first we go to last item in todo list and then we increment in last item’s id, and that would be the id of newly created todo item. For title, we request the title in json format. This is mandatory, if we not provide the title, then abort(400) called. And then we append the list. 4th is to update the todo item so that he keep tracks of completed or uncompleted todo items. And 5th was to delele a todo item by providing the id of todo item.

**Libraries, resources & imports:**

Python, flask, html, json, request, make\_response, abort

**Issues that I met during the process:**

Main issue was what is the rest api, after reading and researching a lot on internet, then I know its is a logical choice for building API’s that allows the user to interact with cloud services. Another issue was how would create a new todo item which adds at the end of the todo list, and how would I assign the id. First I didn’t know that how this json works, I read a lot about json and how to make requests. After researching I read about the postman application of google chrome that makes API faster and easier and better.

**NETWORKING TASKS**

**Task1:** **How I executed the task:**

At first I implement a 2gateway network, with 2 router (c3725), 3 ethernet switches and 4 end virtual pc’s. Then I assign the ip’s to each and every VPC’s. Those pc’s that were connected to router 1, I assigned the gateway of those pc’s with the ip of the router1. And same case with the router 2 and 2VPC’s. Then I configure the ip’s of router 1 and router 2. Then I add an ip route from router1­­­­­­­(R1) for the pc’s that were connected to R1 so that they can send ping to those pc’s that were connected to the router(R2). And also add an Ip route from R2, so that it can communicate with the pc’s of R1.

**Issues that I met during the process:**

First I read a bit about GNS3, like what is the GNS3 and how does it work. After installing I got several errors about the router configuration and other stuff. As being a starter in networking It was very difficult for me to remove errors and find the solution. Then after reading a lot, I download the cisco ios images from the internet for the router, and after that configuration of the router(c3725), I was able to add routers to workplace of GNS3. After that I didn’t about the commands that used to configure the routers and VPC’s. But after spending some hours on internet I made this task.