

# Essential Skills: Assignment Web services

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## 1 REST calculator

Calculator can add, subtract, multiply or divide 2 vars.

Written on python, using Flask framework. If you try to make GET query on it, it'll answer with message.

```
~ http http://127.0.0.1:5005/
HTTP/1.0 200 OK
Content-Length: 127
Content-Type: application/json
Date: Sun, 02 Oct 2016 15:26:15 GMT
Server: Werkzeug/0.11.3 Python/2.7.10

{
  "message": "Please provide POST query to this server with var1, var2 and meth=(plus, minus, multiply, divide) parameters"
}

19  rr(req['meth'])
20  if req['meth']=="plus":
21      sm = var1+var2
22      sponse = str(var1) + " plus " + str(var2) + "=" + str(summ)
23      req["meth"]=="minus":
24      ms = var1-var2
25      sponse = str(var1) + " minus " + str(var2) + "=" + str(minus)
26      req["meth"]=="multiply":
27      multiply = var1*var2
28      sponse = str(var1) + " multiply " + str(var2) + "=" + str(multiply)
29      req["meth"]=="divide":
```

You can work with calculator via POST method

```
HTTP/1.0 200 OK
Content-Length: 37
Content-Type: application/json
Date: Sun, 02 Oct 2016 15:22:35 GMT
Server: Werkzeug/0.11.3 Python/2.7.10

{
  "message": "12 multiply 13=156"
}

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~ http http://127.0.0.1:5005/ var1=12 var2=1a3 meth="multiply" get
HTTP/1.0 200 OK
Content-Length: 35
Content-Type: application/json
Date: Sun, 02 Oct 2016 15:22:38 GMT
Server: Werkzeug/0.11.3 Python/2.7.10

{
  "message": "Check parameters"
}

~ http http://127.0.0.1:5005/ var1=12 var2=13 meth="multily"
HTTP/1.0 200 OK
Content-Length: 49
Content-Type: application/json
Date: Sun, 02 Oct 2016 15:22:47 GMT
Server: Werkzeug/0.11.3 Python/2.7.10

{
  "message": "Don't know that method multily"
}
```

### 1.1 Code:

```
#!/flask/bin/python
from flask import Flask, jsonify, request

app = Flask(__name__)
from pprint import pprint as pprint
import json
```

```

@app.route('/', methods=['GET'])
def hello():
    return jsonify({'message': 'Please provide POST query to this server with var1, var2 and meth='})

@app.route('/', methods=['POST'])
def calc():
    response = ""
    req = json.loads(request.data)
    if checkVars(req):
        var1=int(req['var1'])
        var2=int(req['var2'])
        meth=str(req['meth'])
        if (req["meth"]=="plus"):
            summ = var1+var2
            response = str(var1) + " plus " + str(var2) + "=" + str(summ)
        elif (req["meth"]=="minus"):
            minus = var1-var2
            response = str(var1) + " minus " + str(var2) + "=" + str(minus)
        elif (req["meth"]=="multiply"):
            multiply = var1*var2
            response = str(var1) + " multiply " + str(var2) + "=" + str(multiply)
        elif (req["meth"]=="divide"):
            divide = var1/var2
            response = str(var1) + " divide " + str(var2) + "=" + str(divide)
        else:
            response = "Don't know that method " + meth
    else:
        response = "Check parameters"
    return jsonify({'message': response})

def checkVars(req):
    return req['var1'].isdigit() and req['var2'].isdigit() and req['meth']!= None

if __name__ == '__main__':
    app.run(host='0.0.0.0', port=5005, debug=True)

```