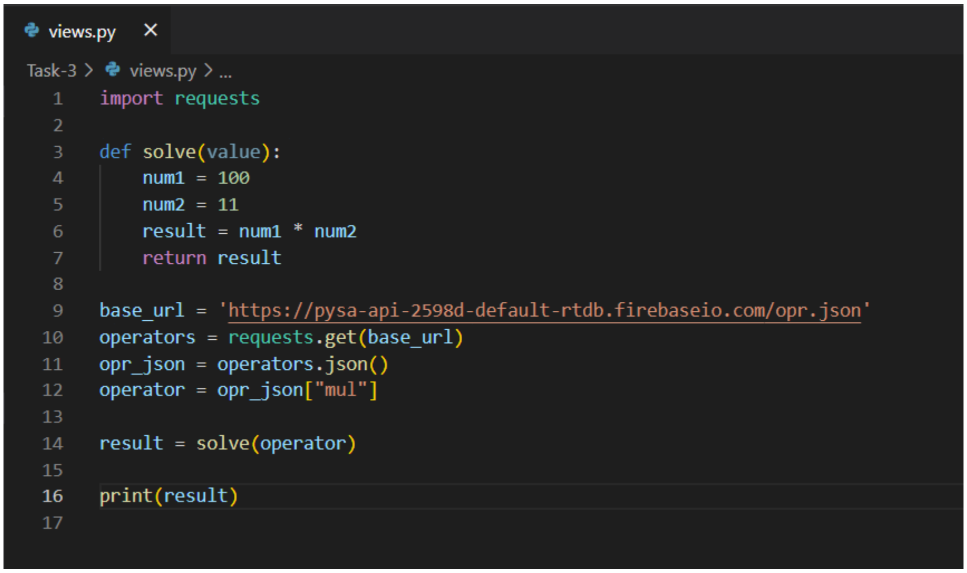
Pysa Experiment (Task – 3)

Refer to the below step-by-step guide if you are not able to run Pysa or Dynamic debugger.

Sub Task – 1

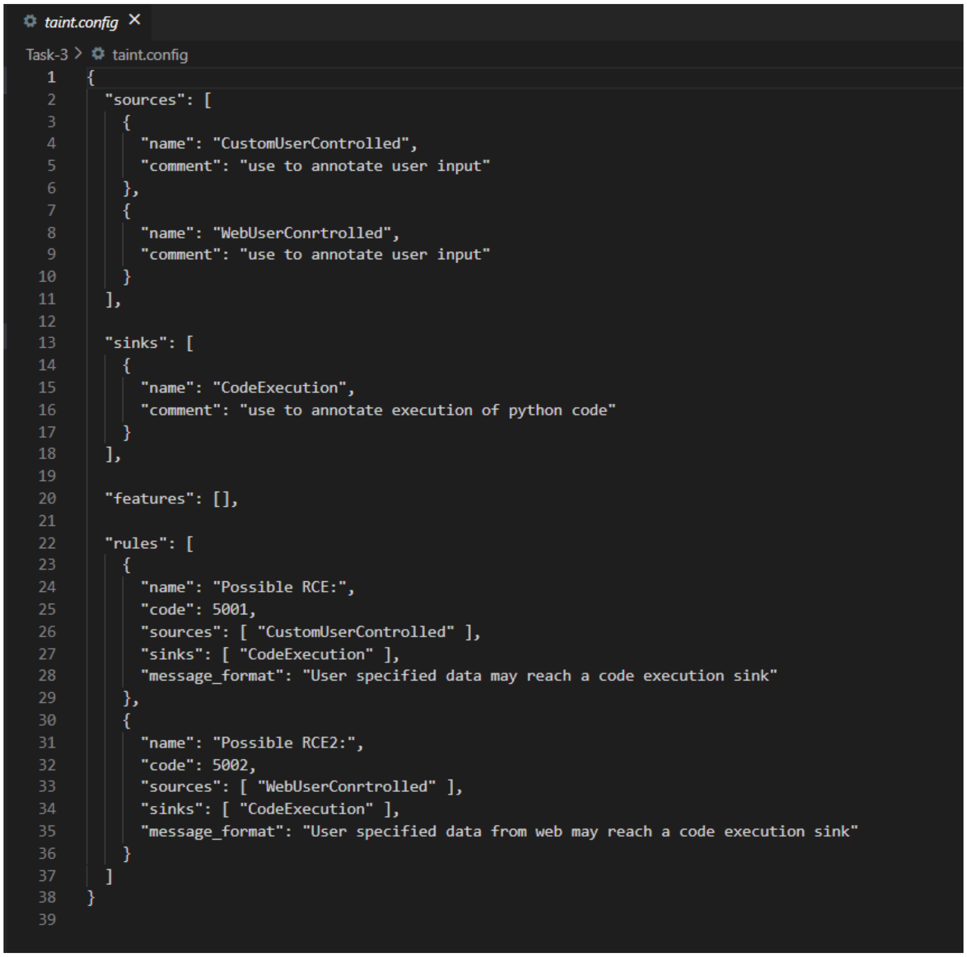
For the Sub Task-1, you must go through all the files in the task-3 directory and answer the questions. Below are all the files.

Views.py



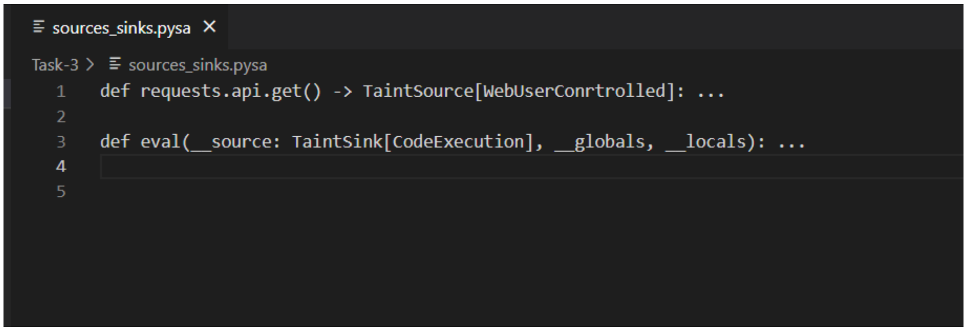
```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

Taint.config



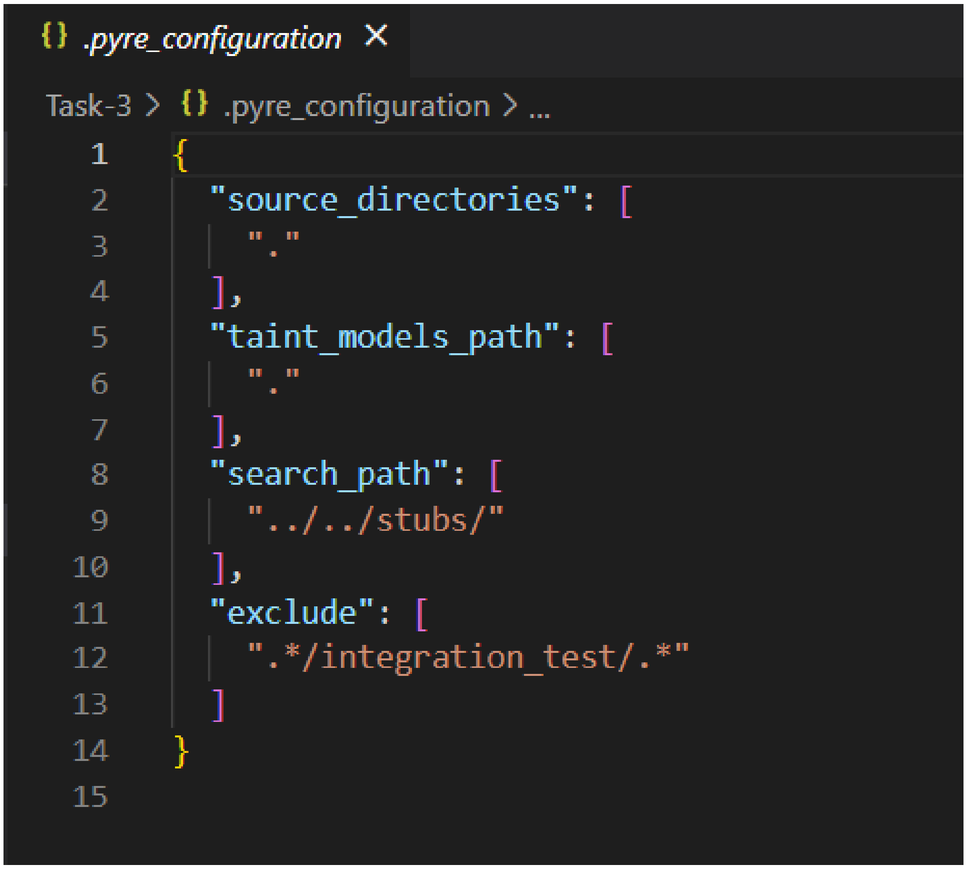
```
{
  "sources": [
    {
      "name": "CustomUserControlled",
      "comment": "use to annotate user input"
    },
    {
      "name": "WebUserConrtrolled",
      "comment": "use to annotate user input"
    }
  ],

  "sinks": [
    {
      "name": "CodeExecution",
      "comment": "use to annotate execution of python code"
    }
  ],

  "features": [],

  "rules": [
    {
      "name": "Possible RCE:",
      "code": 5001,
      "sources": [ "CustomUserControlled" ],
      "sinks": [ "CodeExecution" ],
      "message_format": "User specified data may reach a code execution sink"
    },
    {
      "name": "Possible RCE2:",
      "code": 5002,
      "sources": [ "WebUserConrtrolled" ],
      "sinks": [ "CodeExecution" ],
      "message_format": "User specified data from web may reach a code execution sink"
    }
  ]
}
```

sources_sinks.pysa



```
def requests.api.get() -> TaintSource[WebUserConrtrolled]: ...

def eval(__source: TaintSink[CodeExecution], __globals, __locals): ...
```

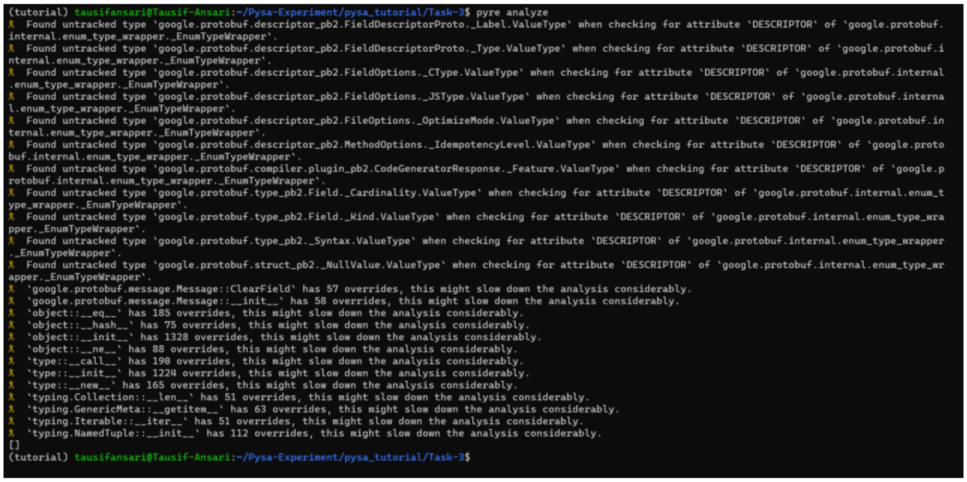
.pyre_configuration



```
{
  "source_directories": [
    "."
  ],
  "taint_models_path": [
    "."
  ],
  "search_path": [
    "../../stubs/"
  ],
  "exclude": [
    ".*/integration_test/.*"
  ]
}
```

Sub Task – 2

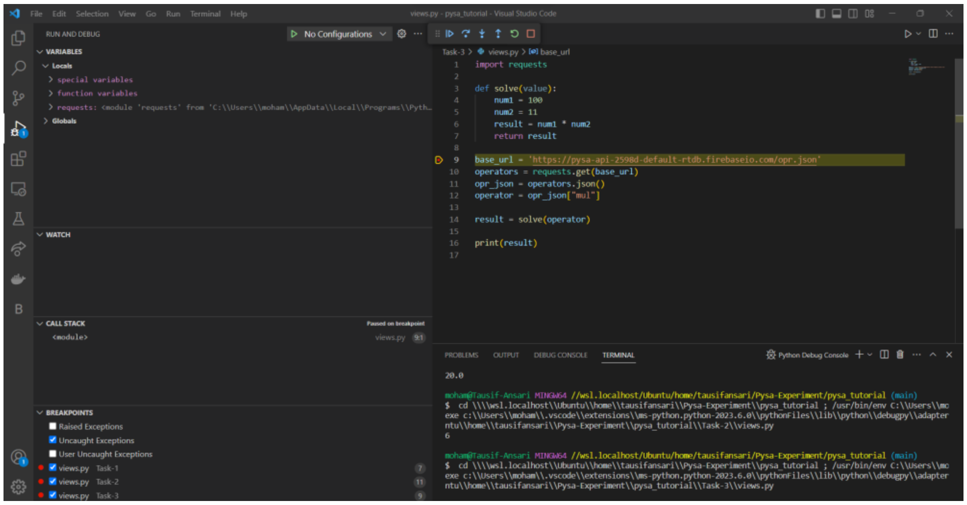
For the Sub Task-2, you will run Pysa (Static Analyzer) and by going through its output you will answer the questions. Below is the Pysa Output for Task-3



```
(tutorial) tausifansari@Tausif-Ansari:~/Pysa-Experiment/pysa_tutorial/Task-3$ pyre analyze
ƛ  Found untracked type `google.protobuf.descriptor_pb2.FieldDescriptorProto._Label.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.
internal.enum_type_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.descriptor_pb2.FieldDescriptorProto._Type.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.i
nternal.enum_type_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.descriptor_pb2.FieldOptions._CType.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.internal
.enum_type_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.descriptor_pb2.FieldOptions._JSType.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.interna
l.enum_type_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.descriptor_pb2.FileOptions._OptimizeMode.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.in
ternal.enum_type_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.descriptor_pb2.MethodOptions._IdempotencyLevel.ValueType` when checking for attribute `DESCRIPTOR` of `google.proto
buf.internal.enum_type_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.compiler.plugin_pb2.CodeGeneratorResponse._Feature.ValueType` when checking for attribute `DESCRIPTOR` of `google.p
rotobuf.internal.enum_type_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.type_pb2.Field._Cardinality.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.internal.enum_t
ype_wrapper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.type_pb2.Field._Kind.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.internal.enum_type_wra
pper._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.type_pb2._Syntax.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.internal.enum_type_wrapper
._EnumTypeWrapper`.
ƛ  Found untracked type `google.protobuf.struct_pb2._NullValue.ValueType` when checking for attribute `DESCRIPTOR` of `google.protobuf.internal.enum_type_wr
apper._EnumTypeWrapper`.
ƛ  `google.protobuf.message.Message::ClearField` has 57 overrides, this might slow down the analysis considerably.
ƛ  `google.protobuf.message.Message::__init__` has 58 overrides, this might slow down the analysis considerably.
ƛ  `object::__eq__` has 185 overrides, this might slow down the analysis considerably.
ƛ  `object::__hash__` has 75 overrides, this might slow down the analysis considerably.
ƛ  `object::__init__` has 1328 overrides, this might slow down the analysis considerably.
ƛ  `object::__ne__` has 88 overrides, this might slow down the analysis considerably.
ƛ  `type::__call__` has 190 overrides, this might slow down the analysis considerably.
ƛ  `type::__init__` has 1224 overrides, this might slow down the analysis considerably.
ƛ  `type::__new__` has 165 overrides, this might slow down the analysis considerably.
ƛ  `typing.Collection::__len__` has 51 overrides, this might slow down the analysis considerably.
ƛ  `typing.GenericMeta::__getitem__` has 63 overrides, this might slow down the analysis considerably.
ƛ  `typing.Iterable::__iter__` has 51 overrides, this might slow down the analysis considerably.
ƛ  `typing.NamedTuple::__init__` has 112 overrides, this might slow down the analysis considerably.
[]
(tutorial) tausifansari@Tausif-Ansari:~/Pysa-Experiment/pysa_tutorial/Task-3$
```

Sub Task – 3

For the Sub Task-3, you will run the dynamic debugger and try to track the flow of data. In this Sub Task you will use the Output of Pysa along with the Output of the dynamic debugger and then try to answer the questions. Below is the Output of the debugger.



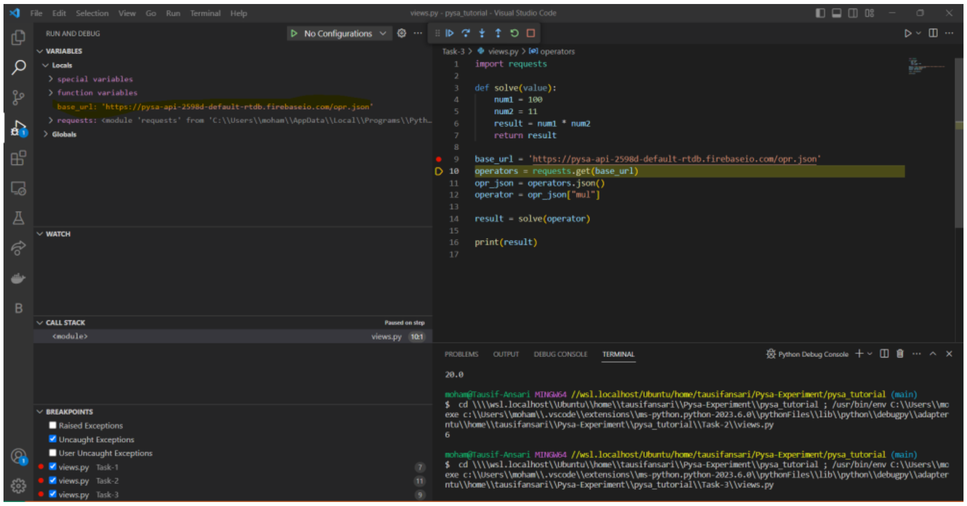
```
special variables
function variables
requests: <module 'requests' from 'C:\\Users\\moham\\AppData\\Local\\Programs\\Pyth…
Globals
```

```
<module>    views.py 9:1
```

```
□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1    7
☑ views.py Task-2    11
☑ views.py Task-3    9
```

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)

```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-3\\views.py
```



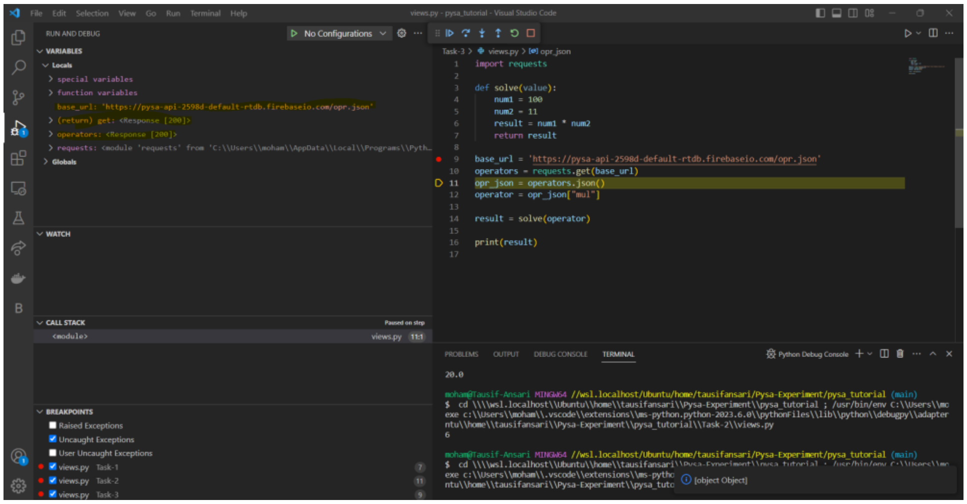
```
special variables
function variables
base_url: 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
requests: <module 'requests' from 'C:\\Users\\moham\\AppData\\Local\\Programs\\Pyth…
Globals
```

```
<module>    views.py 10:1
```

```
□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1    7
☑ views.py Task-2    11
☑ views.py Task-3    9
```

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)

```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-3\\views.py
```


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
VARIABLES
Locals
WATCH
CALL STACK
Paused on step
BREAKPOINTS
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console
Task-3 > views.py > opr_json

```
special variables
function variables
base_url: 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
(return) get: <Response [200]>
operators: <Response [200]>
requests: <module 'requests' from 'C:\\Users\\moham\\AppData\\Local\\Programs\\Pyth…
Globals
```

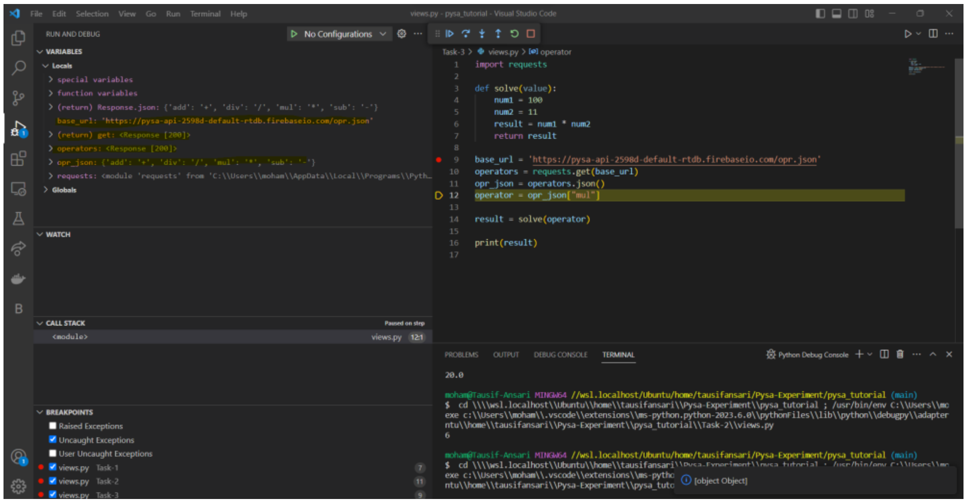
```
<module>    views.py 11:1
```

□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1 7
☑ views.py Task-2 11
☑ views.py Task-3 9

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
VARIABLES
Locals
WATCH
CALL STACK
Paused on step
BREAKPOINTS
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console
Task-3 > views.py > operator

```
special variables
function variables
(return) Response.json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
base_url: 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
(return) get: <Response [200]>
operators: <Response [200]>
opr_json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
requests: <module 'requests' from 'C:\\Users\\moham\\AppData\\Local\\Programs\\Pyth…
Globals
```

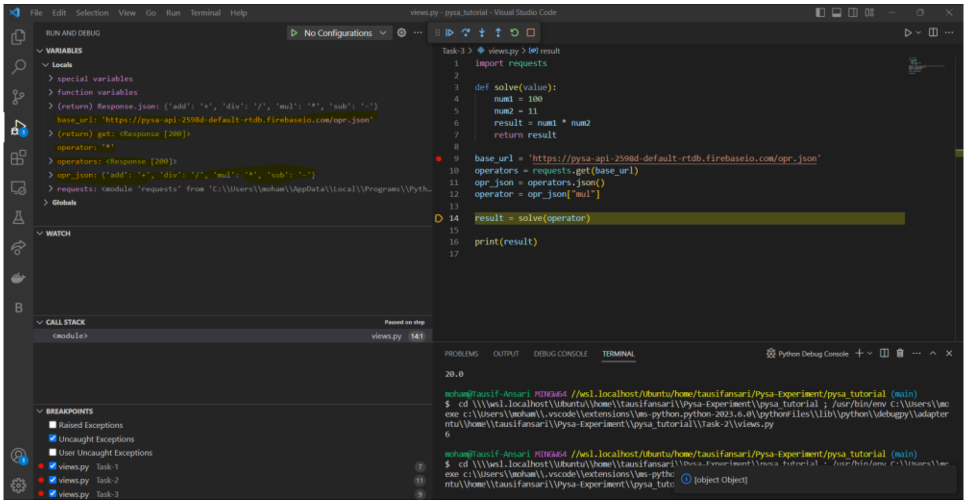
```
<module>    views.py 12:1
```

□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1 7
☑ views.py Task-2 11
☑ views.py Task-3 9

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
VARIABLES
Locals
WATCH
CALL STACK
Paused on step
BREAKPOINTS
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console
Task-3 > views.py > result

```
special variables
function variables
(return) Response.json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
base_url: 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
(return) get: <Response [200]>
operator: '*'
operators: <Response [200]>
opr_json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
requests: <module 'requests' from 'C:\\Users\\moham\\AppData\\Local\\Programs\\Pyth…
Globals
```

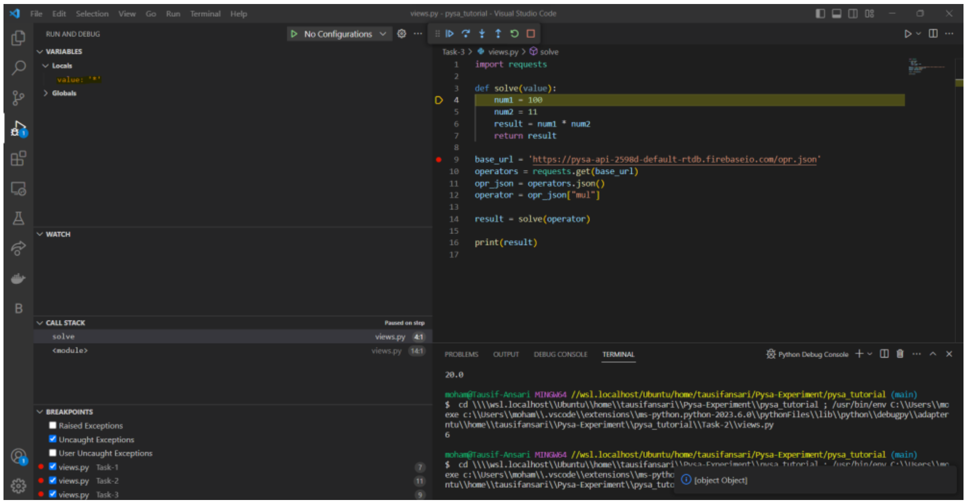
```
<module>    views.py 14:1
```

□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1 7
☑ views.py Task-2 11
☑ views.py Task-3 9

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
Task-3 > views.py > solve
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

VARIABLES
Locals
value: '*'
Globals

WATCH

CALL STACK — Paused on step

solve	views.py	4:1
<module>	views.py	14:1

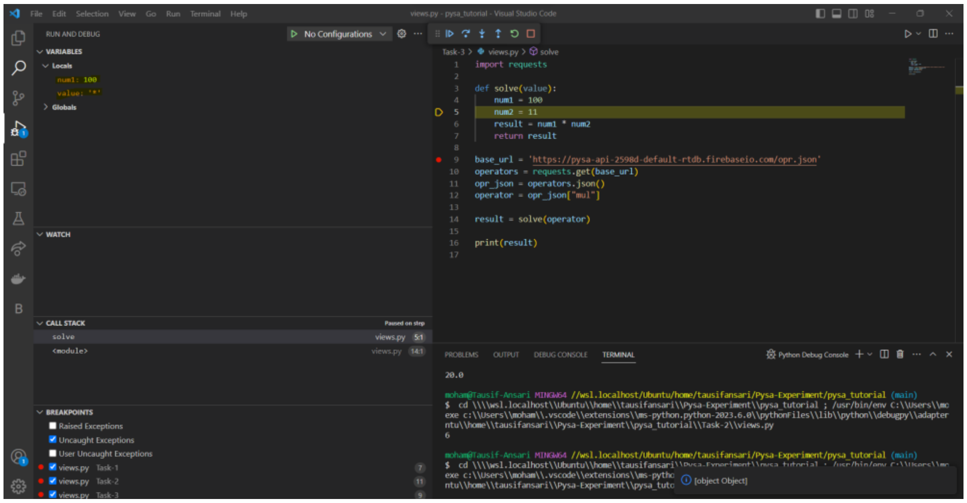
BREAKPOINTS

- ☐ Raised Exceptions
- ☑ Uncaught Exceptions
- ☐ User Uncaught Exceptions
- ● ☑ views.py Task-1 7
- ● ☑ views.py Task-2 11
- ● ☑ views.py Task-3 9

```
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
Task-3 > views.py > solve
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

VARIABLES
Locals
num1: 100
value: '*'
Globals

WATCH

CALL STACK — Paused on step

solve	views.py	5:1
<module>	views.py	14:1

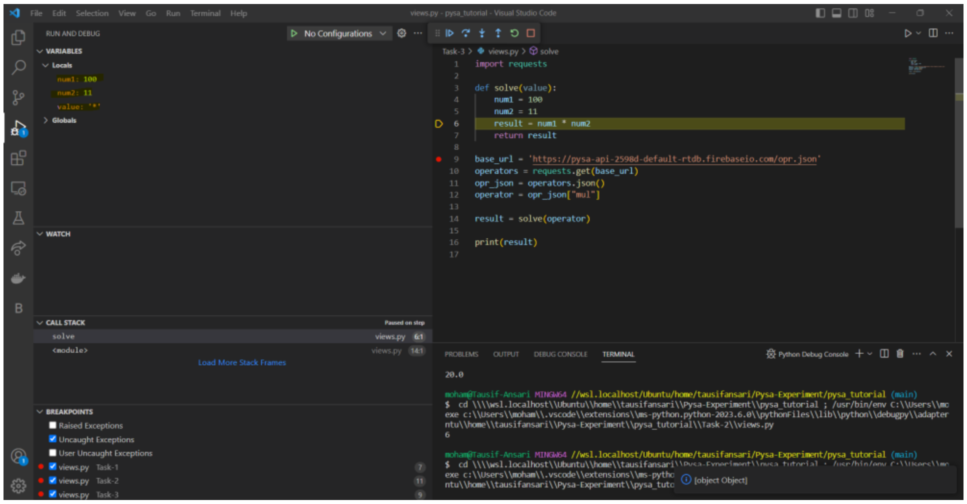
BREAKPOINTS

- ☐ Raised Exceptions
- ☑ Uncaught Exceptions
- ☐ User Uncaught Exceptions
- ● ☑ views.py Task-1 7
- ● ☑ views.py Task-2 11
- ● ☑ views.py Task-3 9

```
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
Task-3 > views.py > solve
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

VARIABLES
Locals
num1: 100
num2: 11
value: '*'
Globals

WATCH

CALL STACK — Paused on step

solve	views.py	6:1
<module>	views.py	14:1

Load More Stack Frames

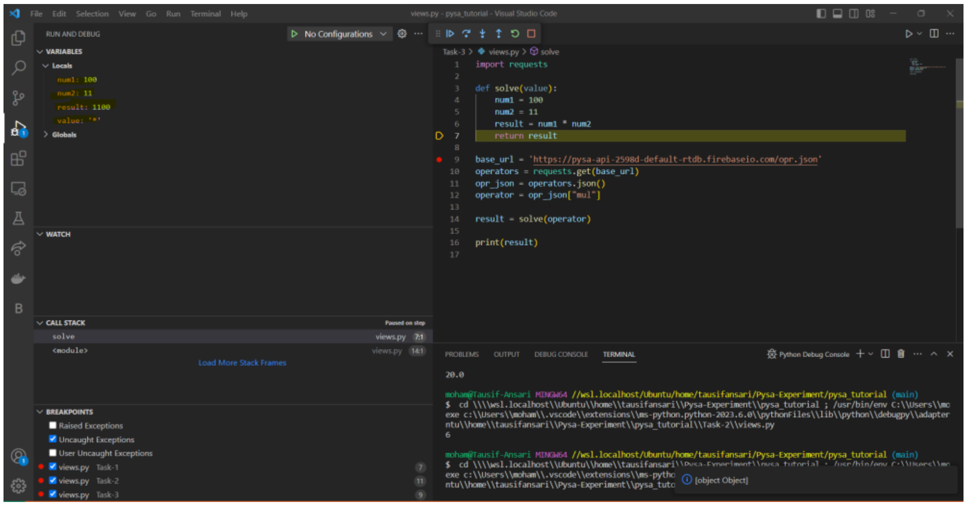
BREAKPOINTS

- ☐ Raised Exceptions
- ☑ Uncaught Exceptions
- ☐ User Uncaught Exceptions
- ● ☑ views.py Task-1 7
- ● ☑ views.py Task-2 11
- ● ☑ views.py Task-3 9

```
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
Task-3 > views.py > solve
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

VARIABLES
Locals
num1: 100
num2: 11
result: 1100
value: '*'
Globals

WATCH

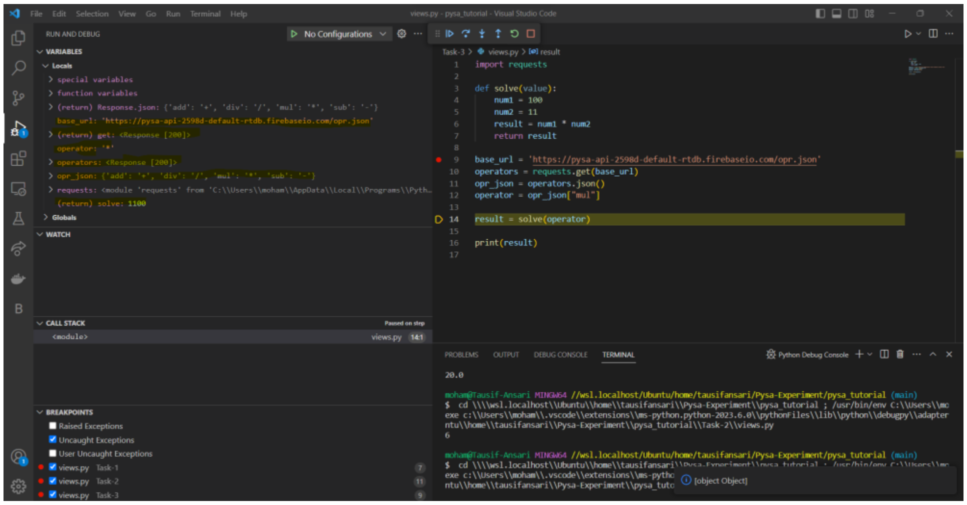
CALL STACK — Paused on step
solve views.py 7:1
<module> views.py 14:1
Load More Stack Frames

BREAKPOINTS
□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1 7
☑ views.py Task-2 11
☑ views.py Task-3 9

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
Task-3 > views.py > result
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

VARIABLES
Locals
> special variables
> function variables
> (return) Response.json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
base_url: 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
> (return) get: <Response [200]>
operator: '*'
> operators: <Response [200]>
> opr_json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
> requests: <module 'requests' from 'C:\\Users\\moham\\AppData\\Local\\Programs\\Pyth…
(return) solve: 1100
Globals

WATCH

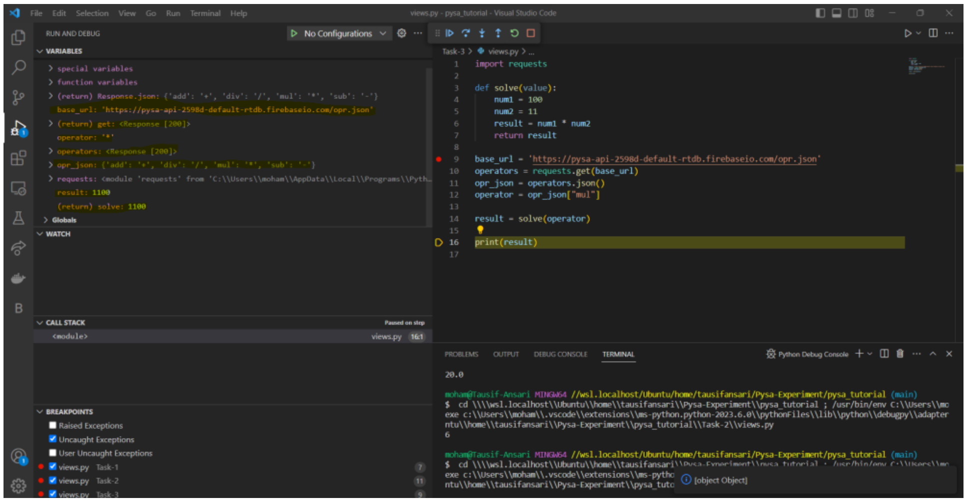
CALL STACK — Paused on step
<module> views.py 14:1

BREAKPOINTS
□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1 7
☑ views.py Task-2 11
☑ views.py Task-3 9

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]


File Edit Selection View Go Run Terminal Help
views.py - pysa_tutorial - Visual Studio Code
RUN AND DEBUG
No Configurations
Task-3 > views.py > ...
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

VARIABLES
> special variables
> function variables
> (return) Response.json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
base_url: 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
> (return) get: <Response [200]>
operator: '*'
> operators: <Response [200]>
> opr_json: {'add': '+', 'div': '/', 'mul': '*', 'sub': '-'}
> requests: <module 'requests' from 'C:\\Users\\moham\\AppData\\Local\\Programs\\Pyth…
result: 1100
(return) solve: 1100
Globals

WATCH

CALL STACK — Paused on step
<module> views.py 16:1

BREAKPOINTS
□ Raised Exceptions
☑ Uncaught Exceptions
□ User Uncaught Exceptions
☑ views.py Task-1 7
☑ views.py Task-2 11
☑ views.py Task-3 9

```python
import requests

def solve(value):
    num1 = 100
    num2 = 11
    result = num1 * num2
    return result

base_url = 'https://pysa-api-2598d-default-rtdb.firebaseio.com/opr.json'
operators = requests.get(base_url)
opr_json = operators.json()
operator = opr_json["mul"]

result = solve(operator)

print(result)
```

```
20.0

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-python.python-2023.6.0\\pythonFiles\\lib\\python\\debugpy\\adapter
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial\\Task-2\\views.py
6

moham@Tausif-Ansari MINGW64 //wsl.localhost/Ubuntu/home/tausifansari/Pysa-Experiment/pysa_tutorial (main)
$  cd \\\wsl.localhost\\Ubuntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tutorial ; /usr/bin/env C:\\Users\\mo
exe c:\\Users\\moham\\.vscode\\extensions\\ms-pytho
ntu\\home\\tausifansari\\Pysa-Experiment\\pysa_tuto
```

ⓘ [object Object]