

```
model.save('realtime.h5')
```

```
-----
```

```
-----  
NameError                                Traceback (most recent call  
last)
```

```
/tmp/wsuser/ipykernel_229/2455004301.py in <module>  
----> 1 model.save('realtime.h5')
```

```
NameError: name 'model' is not defined
```

```
!tar -zcvf realtime.tgz realtime.h5
```

```
tar: realtime.h5: Cannot stat: No such file or directorytar:  
Exiting with failure status due to previous errors
```

```
!pip install watson-machine-learning-client
```

```
Collecting watson-machine-learning-client
```

```
  Downloading watson_machine_learning_client-1.0.391-py3-none-any.whl  
(538 kB)
```

```
Requirement already satisfied: certifi in  
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-  
machine-learning-client) (2022.9.24)
```

```
Requirement already satisfied: tqdm in  
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-  
machine-learning-client) (4.62.3)
```

```
Requirement already satisfied: urllib3 in  
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-  
machine-learning-client) (1.26.7)
```

```
Requirement already satisfied: tabulate in /opt/conda/envs/Python-  
3.9/lib/python3.9/site-packages (from watson-machine-learning-client)  
(0.8.9)
```

```
Requirement already satisfied: lomond in  
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-  
machine-learning-client) (0.3.3)
```

```
Requirement already satisfied: requests in /opt/conda/envs/Python-  
3.9/lib/python3.9/site-packages (from watson-machine-learning-client)  
(2.26.0)
```

```
Requirement already satisfied: pandas in  
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-  
machine-learning-client) (1.3.4)
```

```
Requirement already satisfied: boto3 in  
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-  
machine-learning-client) (1.18.21)
```

```
Requirement already satisfied: ibm-cos-sdk in /opt/conda/envs/Python-  
3.9/lib/python3.9/site-packages (from watson-machine-learning-client)  
(2.11.0)
```

```
Requirement already satisfied: jmespath<1.0.0,>=0.7.1 in  
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from boto3-  
>watson-machine-learning-client) (0.10.0)
```

Requirement already satisfied: boto3<1.22.0,>=1.21.21 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from boto3->watson-machine-learning-client) (1.21.41)
Requirement already satisfied: s3transfer<0.6.0,>=0.5.0 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from boto3->watson-machine-learning-client) (0.5.0)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from
boto3<1.22.0,>=1.21.21->boto3->watson-machine-learning-client)
(2.8.2)
Requirement already satisfied: six>=1.5 in /opt/conda/envs/Python-
3.9/lib/python3.9/site-packages (from python-dateutil<3.0.0,>=2.1->
boto3<1.22.0,>=1.21.21->boto3->watson-machine-learning-client)
(1.15.0)
Requirement already satisfied: ibm-cos-sdk-s3transfer==2.11.0 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-
sdk->watson-machine-learning-client) (2.11.0)
Requirement already satisfied: ibm-cos-sdk-core==2.11.0 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-
sdk->watson-machine-learning-client) (2.11.0)
Requirement already satisfied: charset-normalizer~=2.0.0 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from requests->
watson-machine-learning-client) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in /opt/conda/envs/Python-
3.9/lib/python3.9/site-packages (from requests->watson-machine-
learning-client) (3.3)
Requirement already satisfied: pytz>=2017.3 in /opt/conda/envs/Python-
3.9/lib/python3.9/site-packages (from pandas->watson-machine-learning-
client) (2021.3)
Requirement already satisfied: numpy>=1.17.3 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from pandas->
watson-machine-learning-client) (1.20.3)
Installing collected packages: watson-machine-learning-client
Successfully installed watson-machine-learning-client-1.0.391

!pip install ibm_watson_machine_learning

Requirement already satisfied: ibm_watson_machine_learning in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (1.0.257)
Requirement already satisfied: packaging in /opt/conda/envs/Python-
3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning)
(21.3)
Requirement already satisfied: tabulate in /opt/conda/envs/Python-
3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning)
(0.8.9)
Requirement already satisfied: pandas<1.5.0,>=0.24.2 in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from
ibm_watson_machine_learning) (1.3.4)
Requirement already satisfied: importlib-metadata in
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from
ibm_watson_machine_learning) (4.8.2)

Requirement already satisfied: requests in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (2.26.0)

Requirement already satisfied: urllib3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (1.26.7)

Requirement already satisfied: lomond in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (0.3.3)

Requirement already satisfied: certifi in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (2022.9.24)

Requirement already satisfied: ibm-cos-sdk==2.11.* in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (2.11.0)

Requirement already satisfied: ibm-cos-sdk-s3transfer==2.11.0 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-sdk==2.11.*->ibm_watson_machine_learning) (2.11.0)

Requirement already satisfied: ibm-cos-sdk-core==2.11.0 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-sdk==2.11.*->ibm_watson_machine_learning) (2.11.0)

Requirement already satisfied: jmespath<1.0.0,>=0.7.1 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-sdk==2.11.*->ibm_watson_machine_learning) (0.10.0)

Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-sdk-core==2.11.0->ibm-cos-sdk==2.11.*->ibm_watson_machine_learning) (2.8.2)

Requirement already satisfied: pytz>=2017.3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from pandas<1.5.0,>=0.24.2->ibm_watson_machine_learning) (2021.3)

Requirement already satisfied: numpy>=1.17.3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from pandas<1.5.0,>=0.24.2->ibm_watson_machine_learning) (1.20.3)

Requirement already satisfied: six>=1.5 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from python-dateutil<3.0.0,>=2.1->ibm-cos-sdk-core==2.11.0->ibm-cos-sdk==2.11.*->ibm_watson_machine_learning) (1.15.0)

Requirement already satisfied: charset-normalizer~=2.0.0 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from requests->ibm_watson_machine_learning) (2.0.4)

Requirement already satisfied: idna<4,>=2.5 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from requests->ibm_watson_machine_learning) (3.3)

Requirement already satisfied: zipp>=0.5 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from importlib-metadata->ibm_watson_machine_learning) (3.6.0)

Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from packaging->ibm_watson_machine_learning) (3.0.4)

```
from ibm_watson_machine_learning import APIClient
```

```
cloud_credentials={
    "url":"https://eu-gb.ml.cloud.ibm.com",
    "apikey":"KZSSJEn3LCpwAfSGnyJ3mb5yDLW449PGtQpVNiqlXbBO"
}
```

```
client=APIClient(cloud_credentials)
```

Python 3.7 and 3.8 frameworks are deprecated and will be removed in a future release. Use Python 3.9 framework instead.

```
client.spaces.get_details()
```

```
{'resources': [{'entity': {'compute': [{'crn':
'crn:vl:bluemix:public:pm-20:eu-gb:a/baf2fc8d7ee845f0b6f7ac004c72284e:
66c03ce9-a400-4357-8963-42f65995d1d6::',
    'guid': '66c03ce9-a400-4357-8963-42f65995d1d6',
    'name': 'Watson Machine Learning-oy',
    'type': 'machine_learning'}]},
'description': '',
'name': 'realtime_deploy',
'scope': {'bss_account_id': 'baf2fc8d7ee845f0b6f7ac004c72284e'},
'stage': {'production': False},
'status': {'state': 'active'},
'storage': {'properties': {'bucket_name': 'ea8ff2b0-81e6-4923-
aa78-fe4cbelddcd18',
    'bucket_region': 'eu-gb-standard',
    'credentials': {'admin': {'access_key_id':
'e999e8ed9ad2445ca88ae10af451d567',
    'api_key': 'fkP3B06ykhgejJJwiaTEmtxAjRznQ1cnQoFwx6ZYhi2q',
    'secret_access_key':
'3148c14f7dfbe93c803cd44ab7906253620836f95549b74f',
    'service_id': 'ServiceId-a8d83975-cb8a-45b6-8a0b-2ef8c5e46143'}},
    'editor': {'access_key_id': 'f024630ce04d42339708fac182f0ab39',
    'api_key': 'mcCE4FeS7xgQJkxKtxFFqWepQy8KM4G1SCVBCSN-fwUj',
    'resource_key_crn': 'crn:vl:bluemix:public:cloud-object-
storage:global:a/baf2fc8d7ee845f0b6f7ac004c72284e:b3296065-0e0c-41e2-
94ef-9ce2d0f52335::',
    'secret_access_key':
'7153814f9855ae7da467ce49bbfcfbac82758402be72ecb',
    'service_id': 'ServiceId-c681d0d0-1da1-4b75-a76e-966b2d01ac94'}},
    'viewer': {'access_key_id': '3a85fecc33094296a617c4fb8671a6a8',
    'api_key': 'h7Q07ClgcxsXIiQxTxqzr0810f0RSup70bHelCsAsueb',
    'resource_key_crn': 'crn:vl:bluemix:public:cloud-object-
storage:global:a/baf2fc8d7ee845f0b6f7ac004c72284e:b3296065-0e0c-41e2-
94ef-9ce2d0f52335::',
    'secret_access_key':
'402f3531b91713996a937d5d03b47f6dc8f1392371275b8a',
```

```

        'service_id': 'ServiceId-f4cdb334-b0d8-4f02-9cff-
ffb579be7ad9'}}},
        'endpoint_url': 'https://s3.eu-gb.cloud-object-
storage.appdomain.cloud',
        'guid': 'b3296065-0e0c-41e2-94ef-9ce2d0f52335',
        'resource_crn': 'crn:v1:bluemix:public:cloud-object-
storage:global:a/baf2fc8d7ee845f0b6f7ac004c72284e:b3296065-0e0c-41e2-
94ef-9ce2d0f52335::'},
        'type': 'bmcos_object_storage'}}},
        'metadata': {'created_at': '2022-11-12T08:02:21.536Z',
        'creator_id': 'IBMid-663003YGW8',
        'id': '4afa8b26-897b-4309-b86e-5a89d939e183',
        'updated_at': '2022-11-12T08:02:35.769Z',
        'url': '/v2/spaces/4afa8b26-897b-4309-b86e-5a89d939e183'}}}]}}

```

```

space_uid='4afa8b26-897b-4309-b86e-5a89d939e183'
space_uid

```

```

{"type": "string"}

```

```

client.set.default_space(space_uid)

```

```

{"type": "string"}

```

```

software_space_uid=client.software_specifications.get_uid_by_name('ten
sorflow_rt22.1-py3.9')
software_space_uid

```

```

{"type": "string"}

```

```

model_details=client.repository.store_model(model='realtime.tgz',meta_
props={
    client.repository.ModelMetaNames.NAME:"REALTIME_CLOUD",
    client.repository.ModelMetaNames.TYPE:"tensorflow_2.7",

client.repository.ModelMetaNames.SOFTWARE_SPEC_UID:software_space_uid}
)

```

```

model_details

```

```

{'entity': {'hybrid_pipeline_software_specs': [],
  'software_spec': {'id': 'acd9c798-6974-5d2f-a657-ce06e986df4d',
    'name': 'tensorflow_rt22.1-py3.9'},
    'type': 'tensorflow_2.7'},
  'metadata': {'created_at': '2022-11-16T05:16:59.092Z', 'id':
    '7ae82130-e43e-49ce-b956-2cec8d7eef6b', 'modified_at':
    '2022-11-16T05:17:02.845Z',
    'name': 'REALTIME_CLOUD',
    'owner': 'IBMid-663003YGW8',
    'resource_key': '69f3a279-4383-4834-918c-3d37712db844',
    'space_id': '4afa8b26-897b-4309-b86e-5a89d939e183'},
  'system': {'warnings': []}}

```

```
model_id=client.repository.get_model_id(model_details)
model_id

{"type":"string"}

client.repository.download(model_id,'REALTIME_CLOUD.tar.gb')

Successfully saved model content to file: 'REALTIME_CLOUD.tar.gb'

{"type":"string"}
```