```
Last login: Tue Apr 22 10:19:29 on ttys014
(base) sathwik@SATHWIKs-MacBook-Air ~ % cd VISUAL\ STUDIO\ CODE
(base) sathwik@SATHWIKs-MacBook-Air VISUAL STUDIO CODE % cd FLEC
 (base) sathwik@SATHWIKs-MacBook-Air FLEC % cd Flower Main
 (base) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
Traceback (most recent call last):
File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 1, in <module>
       import flwr as fl
ModuleNotFoundError: No module named 'flwr'
 (base) sathwik@SATHWIKs-MacBook-Air Flower_Main % conda activate flec_env
 (flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
 Traceback (most recent call last):
   File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 3, in <module>
       import utils
    File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/utils.py", line 5, in <module>
from sklearn.preprocessing import StandardScaler
ModuleNotFoundError: No module named 'sklearn'
 (flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % pip install -U scikit-learn
Collecting scikit-learn
Downloading scikit_learn-1.6.1-cp39-cp39-macosx_12_0_arm64.whl.metadata (31 kB)

Requirement already satisfied: numpy>=1.19.5 in /Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages (from scikit-learn) (1.26.4)
Collecting scipy>=1.6.0 (from scikit-learn)
Using cached scipy-1.13.1-cp39-cp39-macosx_12_0_arm64.whl.metadata (60 kB) Collecting joblib>=1.2.0 (from scikit-learn)
Downloading joblib-1.5.0-py3-none-any.whl.metadata (5.6 kB) Collecting threadpoolctl>=3.1.0 (from scikit-learn)
   Downloading threadpoolctl-3.6.0-py3-none-any.whl.metadata (13 kB)
Downloading scikit_learn-1.6.1-cp39-cp39-macosx_12_0_arm64.whl (11.1 MB)
Downloading joblib-1.5.0-py3-none-any.whl (307 kB) Using cached scipy-1.13.1-cp39-cp39-macosx_12_0_arm64.whl (30.3 MB)
Downloading threadpoolctl-3.6.0-py3-none-any.whl (18 kB)
Installing collected packages: threadpoolctl, scipy, joblib, scikit-learn
Successfully installed joblib-1.5.0 scikit-learn-1.6.1 scipy-1.13.1 threadpoolctl-3.6.0
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
 Traceback (most recent call last):
   File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 50, in <module>
       eval_fn=get_eval_fn(model),
   File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 21, in get_eval_fn
   _, (X_test, y_test) = utils.load_data()
File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/utils.py", line 64, in load_data
       x = StandardScaler().fit transform(X)
   File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/sklearn/utils/_set_output.py", line 319, in wrapped
   data_to_wrap = f(self, X, *args, **kwargs)
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/sklearn/base.py", line 918, in fit_transform
   return self.fit(X, **fit_params).transform(X)
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/sklearn/preprocessing/_data.py", line 894, in fit
       return self.partial_fit(X, y, sample_weight)
    File "/Users/sathwik/opt/anaconda3/envs/flec env/lib/python3.9/site-packages/sklearn/base.pv", line 1389, in wrapper
       return fit_method(estimator, *args, **kwargs)
   File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/sklearn/preprocessing/_data.py", line 930, in partial_fit X = validate_data(
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/sklearn/utils/validation.py", line 2944, in validate_data
       out = check_array(X, input_name="X", **check_params)
   File \ "/Users/sathwik/opt/anaconda3/envs/flec\_env/lib/python3.9/site-packages/sklearn/utils/validation.py", \ line \ 1055, \ in \ check\_array \ line \ 1055, \ li
       array = asarray with order(array, order=order, dtype=dtype, xp=xp)
    File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/sklearn/utils/_array_api.py", line 839, in _asarray_with_order
 array = numpy.asarray(array, order=order, dtype=dtype)
ValueError: could not convert string to float: 'MARVIK Soft Silicone Adjustable Band Strap Compatible for Oneplus Smart Band & Oppo Smart Band'
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
Traceback (most recent call last):
   File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 53, in <module>
File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", listrategy = fl.server.strategy.FedAvg(
TypeError: __init__() got an unexpected keyword argument 'eval_fn'
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
WARNING: DEPRECATED FEATURE: flwr.server.start_server() is deprecated.
             Instead, use the `flower-superlink` CLI command to start a SuperLink as shown below:
                           $ flower-superlink --insecure
             To view usage and all available options, run:
                           $ flower-superlink --help
             Using `start server()` is deprecated.
                    This is a deprecated feature. It will be removed
                    entirely in future versions of Flower.
                    Starting Flower server, config: {'num_rounds': 10}
Traceback (most recent call last):
   File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 60, in <module>
   fl.server.start_server(
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/app.py", line 243, in start_server
       initialized_config.num_rounds,
AttributeError: 'dict' object has no attribute 'num rounds'
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
             : DEPRECATED FEATURE: flwr.server.start_server() is deprecated.
Instead, use the `flower-superlink` CLI command to start a Superlink as shown below:
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             To view usage and all available options, run:
                          $ flower-superlink --help
             Using `start_server()` is deprecated.
                    This is a deprecated feature. It will be removed
                    entirely in future versions of Flower.
                   Starting Flower server, config: num_rounds=10, no round_timeout Flower ECE: gRPC server running (10 rounds), SSL is disabled
INFO:
INFO:
                    [INIT]
```

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Requesting initial parameters from one random client
Traceback (most recent call last):
  File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 62, in <module>
    fl.server.start server(
  File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/app.py", line 255, in start_server
  hist = run_f1(
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/server.py", line 492, in run_f1
  File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server.py", line 93, in fit
    self.parameters = self._get_initial_parameters(server_round=0, timeout=timeout)
  File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server.py", line 284, in _get_initial_parameters
    get_parameters_res = random_client.get_parameters(
  File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/superlink/fleet/grpc_bidi/grpc_client_proxy.py", line 73, in get_pa
rameters
  res_wrapper: ResWrapper = self.bridge.request(
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/superlink/fleet/grpc_bidi/grpc_bridge.py", line 147, in request self._raise_if_closed()
  File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/superlink/fleet/grpc_bidi/grpc_bridge.py", line 82, in _raise_if_cl
osed
    raise GrpcBridgeClosed()
flwr.server.superlink.fleet.grpc bidi.grpc bridge.GrpcBridgeClosed
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
WARNING: DEPRECATED FEATURE: flwr.server.start_server() is deprecated.
Instead, use the `flower-superlink` CLI command to start a Superlink as shown below:
                    $ flower-superlink --insecure
         To view usage and all available options, run:
                    $ flower-superlink --help
         Using `start server()` is deprecated.
              This is a deprecated feature. It will be removed
              entirely in future versions of Flower.
              Starting Flower server, config: num_rounds=10, no round_timeout Flower ECE: gRPC server running (10 rounds), SSL is disabled
INFO:
INFO :
INFO:
              [INIT]
INFO:
              Using initial global parameters provided by strategy
INFO: Starting evaluation of initial global parameters
Traceback (most recent call last):
  File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 62, in <module>
    fl.server.start server(
  File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/app.py", line 255, in start_server
  hist = run_fl(
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/server.py", line 492, in run_fl
  hist, elapsed_time = server.fit(
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/server.py", line 95, in fit
  res = self.strategy.evaluate(0, parameters=self.parameters)
File "/Users/sathwik/opt/anaconda3/envs/flec_env/lib/python3.9/site-packages/flwr/server/strategy/fedavg.py", line 167, in evaluate
    eval_res = self.evaluate_fn(server_round, parameters_ndarrays, {})
TypeError: evaluate() takes 2 positional arguments but 3 were given (flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
         : DEPRECATED FEATURE: flur.server.start_server() is deprecated.

Instead, use the `flower-superlink` CLI command to start a Superlink as shown below:
                    $ flower-superlink --insecure
         To view usage and all available options, run:
                    $ flower-superlink --help
         Using `start_server()` is deprecated.
              This is a deprecated feature. It will be removed
              entirely in future versions of Flower.
INFO:
              Starting Flower server, config: num_rounds=10, no round_timeout
INFO:
              Flower ECE: gRPC server running (10 rounds), SSL is disabled
INFO:
              Using initial global parameters provided by strategy Starting evaluation of initial global parameters
INFO:
INFO:
              initial parameters (loss, other metrics): 0.6931471805599453, {'accuracy': 0.7389460932768019}
TNFO :
INFO:
INFO:
               [ROUND 1]
              configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures
INFO:
INFO:
              No fit_metrics_aggregation_fn provided fit progress: (1, 0.5694376583985128, {'accuracy': 0.7492645150125465}, 5.378952041)
INFO:
              configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO :
              No evaluate_metrics_aggregation_fn provided
INFO:
INFO:
              configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures
INFO:
INFO:
TNFO :
              fit progress: (2, 0.5773281197060411, {'accuracy': 0.7518170805572381}, 5.783789125) configure_evaluate: strategy sampled 2 clients (out of 2)
INFO:
              aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO:
              [ROUND 3]
              configure_fit: strategy sampled 2 clients (out of 2)
aggregate_fit: received 2 results and 0 failures
INFO:
INFO:
              fit progress: (3, 0.5809825602970023, {'accuracy': 0.7520550315825907}, 6.182482916) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO:
INFO:
INFO
               [ROUND 4]
              configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures
INFO:
INFO :
INFO:
               fit progress: (4, 0.5848299046174564, {'accuracy': 0.7526174612788786}, 6.603212624999999)
              configure_evaluate: strategy sampled 2 clients (out of 2)
INFO:
               aggregate_evaluate: received 2 results and 0 failures
```

```
INFO:
                [ROUND 5]
INFO:
INFO :
                configure_fit: strategy sampled 2 clients (out of 2)
INFO:
                aggregate_fit: received 2 results and 0 failures fit progress: (5, 0.5863307044265705, {'accuracy': 0.7524876698105044}, 7.066025583)
INFO:
               configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO
INFO:
                [ROUND 6]
INFO:
                configure_fit: strategy sampled 2 clients (out of 2)
                aggregate_fit: received 2 results and 0 failures fit progress: (6, 0.5858982584229347, {'accuracy': 0.7524444059877131}, 7.451603499999999)
TNFO :
INFO:
               configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO
INFO:
                [ROUND 7]
INFO:
                configure_fit: strategy sampled 2 clients (out of 2)
               aggregate_fit: received 2 results and 0 failures
fit progress: (7, 0.5876214999967737, {'accuracy': 0.7524227740763174}, 7.8050190829999995)
configure_evaluate: strategy sampled 2 clients (out of 2)
aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO :
INFO:
INFO
                FROUND 81
INFO:
INFO :
                configure_fit: strategy sampled 2 clients (out of 2)
                aggregate_fit: received 2 results and 0 failures
fit progress: (8, 0.5886419339768737, {'accuracy': 0.75266072510167}, 8.210763625)
configure_evaluate: strategy sampled 2 clients (out of 2)
TNFO:
INFO:
INFO:
                aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO
                [ROUND 91
INFO:
               configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (9, 0.5876318043441806, {'accuracy': 0.7533745781777278}, 8.622084416)
INFO:
TNFO :
INFO:
               configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
                [ROUND 10]
INFO:
INFO :
                configure_fit: strategy sampled 2 clients (out of 2)
               configure_it: Strategy Sampleu 2 Clients (Out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (10, 0.5883227049047568, ('accuracy': 0.7527905165700441}, 9.006807375) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO :
INFO:
INFO
                [SUMMARY]
INFO:
INFO:
                Run finished 10 round(s) in 9.12s
TNFO:
                    History (loss, distributed):
round 1: 0.5694376677274704
INFO:
INFO:
                                round 2: 0.5773281157016754
                                round 3: 0.5809825658798218
INFO:
INFO:
                                round 4: 0.5848298966884613
INFO:
                                round 5: 0.5863306969404221
INFO:
                                round 6: 0.5858982503414154
TNFO :
                                round 7: 0.5876215100288391
                                round 8: 0.5886419415473938
INFO:
                                round 9: 0.5876317918300629
round 10: 0.5883226990699768
INFO:
INFO:
                    History (loss, centralized):
round 0: 0.6931471805599453
INFO:
                                round 1: 0.5694376583985128
INFO
INFO:
                                round 2: 0.5773281197060411
INFO:
                                round 3: 0.5809825602970023
                                round 4: 0.5848299046174564
TNFO:
                                round 5: 0.5863307044265705
INFO:
INFO
                                round 6: 0.5858982584229347
INFO:
                                round 7: 0.5876214999967737
                                round 8: 0.5886419339768737
TNFO :
                                round 9: 0.5876318043441806
                                round 10: 0.5883227049047568
INFO:
                     History (metrics, centralized): {'accuracy': [(0, 0.7389460932768019),
INFO:
INFO:
TNFO
                                         (1, 0.7492645150125465),
                                        (2, 0.7518170805572381).
INFO:
INFO
                                         (3, 0.7520550315825907),
TNFO :
                                         (4, 0.7526174612788786).
                                         (5, 0.7524876698105044),
INFO:
                                        (6, 0.7524444059877131),
(7, 0.7524227740763174),
INFO :
INFO:
INFO
                                         (8, 0.75266072510167)
INFO:
                                        (9. 0.7533745781777278)
                                        (10, 0.7527905165700441)]}
INFO:
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
  File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 40
     round metrics.append(
SyntaxError: invalid syntax
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
  File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 40
     round_metrics.append(
SvntaxError: invalid svntax
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
  File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower Main/server.pv", line 40
     round_metrics.append(
SyntaxError: invalid syntax
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 40
     round_metrics.append(
SyntaxError: invalid syntax
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py WARNING: DEPRECATED FEATURE: flwr.server.start_server() is deprecated.
          Instead, use the `flower-superlink` CLI command to start a SuperLink as shown below:
```

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$ flower-superlink --insecure
            To view usage and all available options, run:
                         $ flower-superlink --help
            Using `start_server()` is deprecated.
                   This is a deprecated feature. It will be removed
                   entirely in future versions of Flower.
TNFO:
                  Starting Flower server, config: num_rounds=10, no round_timeout Flower ECE: gRPC server running (10 rounds), SSL is disabled
INFO:
INFO:
                    [INIT]
                  Using initial global parameters provided by strategy Starting evaluation of initial global parameters
INFO:
INFO:
                   initial parameters (loss, other metrics): 0.6931471805599453, {'accuracy': 0.5996365838885523}
INFO:
INFO:
INFO:
                   [ROUND 1]
INFO:
                   configure_fit: strategy sampled 2 clients (out of 2)
INFO:
                    aggregate_fit: received 2 results and 0 failures
                   No fit metrics aggregation fn provided
INFO:
                    fit progress: (1, 0.649434809466835, {'accuracy': 0.6271091113610798}, 7.808081791999999)
TNFO :
                  configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
                  No evaluate_metrics_aggregation_fn provided
INFO:
INFO:
                   [ROUND 2]
                  configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures
INFO:
INFO:
                  fit progress: (2, 0.6450829846769357, {'accuracy': 0.6364540970840183}, 8.294623542) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
TNFO :
INFO:
INFO:
INFO:
INFO :
                   [ROUND 31
                  configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (3, 0.642660512458961, {'accuracy': 0.6400017305529117}, 8.71327666699999) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO:
INFO:
INFO:
INFO:
INFO:
                   [ROUND 4]
                   configure_fit: strategy sampled 2 clients (out of 2)
INFO:
INFO:
                    aggregate_fit: received 2 results and 0 failures
                  fit progress: (4, 0.6407977965864662, {'accuracy': 0.6441334256294886}, 9.121858207999999) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
TNFO :
INFO:
INFO:
INFO:
INFO:
                   [ROUND 5]
                  configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (5, 0.6395850865974738, {'accuracy': 0.6462317210348706}, 9.603223958)
INFO:
INFO:
TNFO :
                   configure_evaluate: strategy sampled 2 clients (out of 2)
INFO:
INFO:
                   aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO
                  configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (6, 0.6385530402223942, {'accuracy': 0.6489789737821234}, 10.024144542) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO :
INFO:
INFO:
INFO:
INFO:
INFO:
                   [ROUND 7]
                  configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (7, 0.6378477839639671, {'accuracy': 0.6517911222635632}, 10.4731845) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
TNFO :
INFO:
INFO:
INFO:
INFO:
                   [ROUND 8]
                  configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (8, 0.6374828857026104, {'accuracy': 0.6537812581119667}, 10.87948725)
INFO:
INFO:
TNFO :
                  configures: (a, 0.37402007020104, tacturary: 0.0037
configure_evaluate: strategy sampled 2 clients (out of 2)
aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO:
INFO:
                  cround 9] configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures fit progress: (9, 0.6375604625976817, {'accuracy': 0.6522021285800813}, 11.320039625) configure_evaluate: strategy sampled 2 clients (out of 2) aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO
INFO:
INFO:
TNEO .
INFO:
INFO:
                   [ROUND 10]
                  configure_fit: strategy sampled 2 clients (out of 2) aggregate_fit: received 2 results and 0 failures
INFO:
INFO:
                  fit progress: (10, 0.6372774600941610, {'accuracy': 0.6531323007700961}, 11.744377250000001) configure_evaluate: strategy sampled 2 clients (out of 2)
TNFO :
INFO:
                   aggregate_evaluate: received 2 results and 0 failures
INFO:
INFO:
INFO:
                   [SUMMARY]
                  Run finished 10 round(s) in 11.91s
INFO:
INFO:
                         History (loss, distributed):
TNFO:
                                      round 1: 0.6494348049163818
round 2: 0.6450829803943634
INFO:
TNFO:
                                      round 3: 0.6424660682678223
round 4: 0.6407977938652039
INFO:
TNFO :
                                       round 5: 0.6395850777626038
                                       round 6: 0.6385530233383179
INFO:
INFO :
                                       round 7: 0.6378477811813354
INFO:
                                       round 8: 0.6374828815460205
                                       round 9: 0.6375604569911957
INFO:
                                       round 10: 0.6372774839401245
```

```
INFO:
                    History (loss, centralized):
                              round 0: 0.6931471805599453
round 1: 0.649434809466835
INFO:
INFO :
INFO:
                              round 2: 0.6450829846769357
                              round 3: 0.6424660512458961
INFO:
                              round 4: 0.6407977965864662
round 5: 0.6395850865974738
INFO:
INFO:
INFO:
                              round 6: 0.6385530402223942
INFO:
                              round 7: 0.6378477839639671
                              round 8: 0.6374828857026104
INFO:
TNFO :
                              round 9: 0.6375604625976817
                              round 10: 0.6372774600041616
INFO:
TNFO:
                   History (metrics, centralized): {'accuracy': [(0, 0.5996365838885523),
INFO:
                                      (1, 0.6271091113610798),
INFO
INFO:
                                      (2, 0.6364540970840183),
                                      (3, 0.6400017305529117),
INFO:
INFO:
                                      (4, 0.6441334256294886)
INFO:
                                      (5, 0.6462317210348706),
                                      (6, 0.6489789737821234),
(7, 0.6517911222635632),
INFO:
INFO:
INFO
                                      (8, 0.6537812581119667),
INFO:
                                      (9. 0.6522021285800813)
INFO :
                                      (10, 0.6531323007700961)]}
TNFO:
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
Traceback (most recent call last):
File "/Users/sathwik/VISUAL STUDIO CODE/FLEC/Flower_Main/server.py", line 76, in <module>
     strategy = fl.server.strategy.FedAvg(
TypeError: __init__() got an unexpected keyword argument 'min_eval_clients' (flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main % python server.py
         : DEPRECATED FEATURE: flwr.server.start_server() is deprecated.
Instead, use the `flower-superlink` CLI command to start a Superlink as shown below:
                    $ flower-superlink --insecure
          To view usage and all available options, run:
                    $ flower-superlink --help
         Using `start_server()` is deprecated.
               This is a deprecated feature. It will be removed
               entirely in future versions of Flower.
TNFO:
              Starting Flower server, config: num_rounds=10, no round_timeout Flower ECE: gRPC server running (10 rounds), SSL is disabled
INFO:
INFO:
               [INIT]
INFO:
              Using initial global parameters provided by strategy
INFO:
              Starting evaluation of initial global parameters initial parameters (loss, other metrics): 0.6931471805599448, {'accuracy': 0.6848151848151848}
INFO:
INFO:
               [ROUND 1]
TNFO :
 \begin{tabular}{ll} ``CINFO: & Flower server terminated gracefully. \\ (flec_env) & sathwik@SATHWIKs-MacBook-Air Flower_Main \% python server.py \\ \end{tabular} 
          : DEPRECATED FEATURE: flwr.server.start_server() is deprecated.
Instead, use the `flower-superlink` CLI command to start a Superlink as shown below:
                    $ flower-superlink --insecure
         To view usage and all available options, run:
                    $ flower-superlink --help
         Using `start server()` is deprecated.
               This is a deprecated feature. It will be removed
               entirely in future versions of Flower.
TNFO :
               Starting Flower server, config: num_rounds=10, no round_timeout
INFO:
               Flower ECE: gRPC server running (10 rounds), SSL is disabled
INFO:
               [INIT]
              Using initial global parameters provided by strategy
Starting evaluation of initial global parameters
initial parameters (loss, other metrics): 0.6931471805599448, {'accuracy': 0.6848151848151848}
INFO:
INFO:
INFO:
INFO :
INFO:
               [ROUND 1]
INFO:
               configure_fit: strategy sampled 11 clients (out of 11)
              aggregate_fit: received 11 results and 0 failures
No fit_metrics_aggregation_fn provided
INFO:
INFO:
               fit progress: (1, 0.6216068515433614, {'accuracy': 0.6795959945566244}, 13.300738749999999)
              configure_evaluate: no clients selected, skipping evaluation
INFO:
INFO:
TNFO :
               FROUND 21
INFO:
               configure_fit: strategy sampled 11 clients (out of 11)
               aggregate_fit: received 11 results and 0 failures
fit progress: (2, 0.6227674374570124, {'accuracy': 0.6797179198754002}, 13.534168166999999)
INFO:
INFO:
INFO:
               configure_evaluate: no clients selected, skipping evaluation
INFO:
INFO:
INFO:
              configure_fit: strategy sampled 11 clients (out of 11)
aggregate_fit: received 11 results and 0 failures
INFO:
               fit progress: (3, 0.6230677433745093, {'accuracy': 0.6790846948327264}, 13.612791541999998)
INFO:
INFO:
              configure_evaluate: no clients selected, skipping evaluation
INFO
               [ROUND 4]
INFO:
INFO :
               configure_fit: strategy sampled 11 clients (out of 11)
               aggregate_fit: received 11 results and 0 failures
fit progress: (4, 0.6229502576862084, {'accuracy': 0.6797297190997978}, 13.6936175)
INFO:
INFO:
               configure_evaluate: no clients selected, skipping evaluation
```

```
INFO :
                 [ROUND 5]
INFO:
INFO :
                 configure_fit: strategy sampled 11 clients (out of 11)
INFO:
                 aggregate_fit: received 11 results and 0 failures fit progress: (5, 0.6230417863798112, {'accuracy': 0.6793128131710809}, 13.845306583000001)
INFO:
INFO:
                 configure_evaluate: no clients selected, skipping evaluation
INFO:
INFO:
                 [ROUND 6]
                configure_fit: strategy sampled 11 clients (out of 11) aggregate_fit: received 11 results and 0 failures fit progress: (6, 0.6229692911704791, {'accuracy': 0.679332478545077}, 13.92554883299999) configure_evaluate: no clients selected, skipping evaluation
INFO:
INFO:
INFO:
INFO:
INFO:
INFO:
                configure_fit: strategy sampled 11 clients (out of 11)
aggregate_fit: received 11 results and 0 failures
fit progress: (7, 0.6228550843275429, {'accuracy': 0.6793403446946754}, 14.09676175)
INFO:
INFO:
INFO:
INFO:
                 configure_evaluate: no clients selected, skipping evaluation
INFO:
INFO :
                 FROUND 81
                configure_fit: strategy sampled 11 clients (out of 11)
aggregate_fit: received 11 results and 0 failures
fit progress: (8, 0.6228191488407107, {'accuracy': 0.67976904984779}, 14.175553833)
configure_evaluate: no clients selected, skipping evaluation
INFO:
INFO:
INFO:
INFO :
TNFO:
                 [ROUND 9]
INFO:
INFO:
                configure_fit: strategy sampled 11 clients (out of 11)
aggregate_fit: received 11 results and 0 failures
INFO:
INFO
                 fit progress: (9, 0.6231631696609145, {'accuracy': 0.6790178325611397}, 14.247790417)
INFO:
                configure_evaluate: no clients selected, skipping evaluation
INFO:
TNFO :
                 [ROUND 10]
INFO:
                 configure_fit: strategy sampled 11 clients (out of 11)
                 aggregate_fit: received 11 results and 0 failures
fit progress: (10, 0.6230544168767959, {'accuracy': 0.6793403446946754}, 14.895655625000002)
INFO:
INFO:
INFO :
                 configure_evaluate: no clients selected, skipping evaluation
INFO:
INFO :
                Run finished 10 round(s) in 14.90s
History (loss, centralized):
round 0: 0.6931471805599448
round 1: 0.6216068515433614
INFO:
INFO:
INFO :
INFO:
INFO:
                                  round 2: 0.6227674374570124
round 3: 0.6230677433745093
INFO:
INFO:
                                  round 4: 0.6229502576862084
INFO :
                                  round 5: 0.6230417863798112
round 6: 0.6229692911704791
INFO:
INFO:
                                 round 7: 0.6228550843275429
round 8: 0.6228191488407107
INFO:
INFO:
                                  round 9: 0.6231631696609145
                                  round 10: 0.6230544168767959
INFO:
INFO:
                      History (metrics, centralized):
                      {'accuracy': [(0, 0.6848151848151848), (1, 0.6795959945566244),
TNFO :
INFO:
                                          (2, 0.6797179198754002),
(3, 0.6790846948327264),
INFO :
INFO:
INFO
                                           (4, 0.6797297190997978),
                                           (5, 0.6793128131710809).
INFO:
INFO :
                                           (6, 0.679332478545077),
INFO:
                                           (7, 0.6793403446946754),
INFO:
                                           (8, 0.67976904984779),
TNFO:
                                          (9, 0.6790178325611397)
INFO:
                                          (10, 0.6793403446946754)]}
(flec_env) sathwik@SATHWIKs-MacBook-Air Flower_Main %
```