```
ap-south-1
S3 bucket created successfully
_____
s3://bankapplication-project/xgboost-formyproject/output
_____
Success: downloaded bank clean.csv.
Success: Data loaded into dataframe.
(28831, 61) (12357, 61)
train instance count has been renamed in sagemaker>=2.
See: https://sagemaker.readthedocs.io/en/stable/v2.html for details.
train instance type has been renamed in sagemaker>=2.
See: https://sagemaker.readthedocs.io/en/stable/v2.html for details.
train max run has been renamed in sagemaker>=2.
See: https://sagemaker.readthedocs.io/en/stable/v2.html for details.
train use spot instances has been renamed in sagemaker>=2.
See: https://sagemaker.readthedocs.io/en/stable/v2.html for details.
train max wait has been renamed in sagemaker>=2.
See: https://sagemaker.readthedocs.io/en/stable/v2.html for details.
train volume size has been renamed in sagemaker>=2.
See: https://sagemaker.readthedocs.io/en/stable/v2.html for details.
2024-08-05 08:19:12 Starting - Starting the training job...
2024-08-05 08:19:32 Starting - Preparing the instances for training...
2024-08-05 08:20:06 Downloading - Downloading the training image...
2024-08-05 08:20:37 Training - Training image download completed. Training in progress....
2024-08-05 08:21:02 Uploading - Uploading generated training model[2024-08-05 08:20:55.679]
ip-10-0-124-169.ap-south-1.compute.internal:7 INFO utils.py:28] RULE_JOB_STOP_SIGNAL_FILENAME: None
[2024-08-05 08:20:55.701 ip-10-0-124-169.ap-south-1.compute.internal:7 INFO profiler config parser.py:111] User has
disabled profiler.
[2024-08-05:08:20:55:INFO] Imported framework sagemaker xgboost container training
[2024-08-05:08:20:55:INFO] Failed to parse hyperparameter objective value binary:logistic to Json.
Returning the value itself
[2024-08-05:08:20:55:INFO] No GPUs detected (normal if no gpus installed)
[2024-08-05:08:20:55:INFO] Running XGBoost Sagemaker in algorithm mode
[2024-08-05:08:20:55:INFO] Determined delimiter of CSV input is ','
[2024-08-05:08:20:55:INFO] Determined delimiter of CSV input is ','
[2024-08-05:08:20:55:INFO] files path: /opt/ml/input/data/train
[2024-08-05:08:20:55:INFO] Determined delimiter of CSV input is ','
[2024-08-05:08:20:55:INFO] files path: /opt/ml/input/data/validation
[2024-08-05:08:20:55:INFO] Determined delimiter of CSV input is ','
[2024-08-05:08:20:55:INFO] Single node training.
[2024-08-05:08:20:55:INFO] Train matrix has 28831 rows and 59 columns
[2024-08-05:08:20:55:INFO] Validation matrix has 12357 rows
[2024-08-05 08:20:55.830 ip-10-0-124-169.ap-south-1.compute.internal:7 INFO json config.py:92] Creating hook from
json config at /opt/ml/input/config/debughookconfig.json.
```

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[2024-08-05 08:20:55.831 ip-10-0-124-169.ap-south-1.compute.internal:7 INFO hook.py:207] tensorboard_dir has not been set for the hook. SMDebug will not be exporting tensorboard summaries.
```

 $[2024-08-05\ 08:20:55.832\ ip-10-0-124-169.ap-south-1.compute.internal:7\ INFO\ hook.py:259]\ Saving\ to\ /opt/ml/output/tensors$

[2024-08-05 08:20:55.832 ip-10-0-124-169.ap-south-1.compute.internal:7 INFO state_store.py:77] The checkpoint config file /opt/ml/input/config/checkpointconfig.json does not exist.

[2024-08-05:08:20:55:INFO] Debug hook created from config

[08:20:55] WARNING: ../src/learner.cc:1061: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval metric if you'd like to restore the old behavior.

[2024-08-05 08:20:55.868 ip-10-0-124-169.ap-south-1.compute.internal:7 INFO hook.py:428] Monitoring the collections: metrics

[2024-08-05 08:20:55.870 ip-10-0-124-169.ap-south-1.compute.internal:7 INFO hook.py:491] Hook is writing from the hook with pid: 7

- [0]#011train-logloss:0.57285#011validation-logloss:0.57388
- [1]#011train-logloss:0.49296#011validation-logloss:0.49483
- [2]#011train-logloss:0.43699#011validation-logloss:0.44017
- [3]#011train-logloss:0.39663#011validation-logloss:0.40048
- [4]#011train-logloss:0.36733#011validation-logloss:0.37209
- [5]#011train-logloss:0.34574#011validation-logloss:0.35146
- [6]#011train-logloss:0.32987#011validation-logloss:0.33640
- [7]#011train-logloss:0.31788#011validation-logloss:0.32478
- [8]#011train-logloss:0.30915#011validation-logloss:0.31662
- [9]#011train-logloss:0.30226#011validation-logloss:0.31044
- [10]#011train-logloss:0.29718#011validation-logloss:0.30609
- [11]#011train-logloss:0.29316#011validation-logloss:0.30271
- [12]#011train-logloss:0.29028#011validation-logloss:0.30029
- [13]#011train-logloss:0.28766#011validation-logloss:0.29825
- [14]#011train-logloss:0.28567#011validation-logloss:0.29661
- [15]#011train-logloss:0.28434#011validation-logloss:0.29565
- [16]#011train-logloss:0.28328#011validation-logloss:0.29466
- [17]#011train-logloss:0.28189#011validation-logloss:0.29366
- [18]#011train-logloss:0.28103#011validation-logloss:0.29344
- [19]#011train-logloss:0.28020#011validation-logloss:0.29296
- [20]#011train-logloss:0.27964#011validation-logloss:0.29269
- [21]#011train-logloss:0.27923#011validation-logloss:0.29267
- [22]#011train-logloss:0.27900#011validation-logloss:0.29280
- [23]#011train-logloss:0.27840#011validation-logloss:0.29243
- [24]#011train-logloss:0.27799#011validation-logloss:0.29234
- [25]#011train-logloss:0.27755#011validation-logloss:0.29206
- [26]#011train-logloss:0.27718#011validation-logloss:0.29196
- [27]#011train-logloss:0.27688#011validation-logloss:0.29192
- [28] #011 train-log loss: 0.27663 #011 validation-log loss: 0.29183
- [29]#011train-logloss:0.27642#011validation-logloss:0.29160
- [30]#011train-logloss:0.27613#011validation-logloss:0.29140
- [31]#011train-logloss:0.27585#011validation-logloss:0.29134
- [32]#011train-logloss:0.27554#011validation-logloss:0.29136
- [33]#011train-logloss:0.27516#011validation-logloss:0.29135
- [34]#011train-logloss:0.27511#011validation-logloss:0.29132

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[35]#011train-logloss:0.27494#011validation-logloss:0.29133
[36]#011train-logloss:0.27468#011validation-logloss:0.29143
[37]#011train-logloss:0.27429#011validation-logloss:0.29122
[38]#011train-logloss:0.27402#011validation-logloss:0.29117
[39]#011train-logloss:0.27385#011validation-logloss:0.29128
[40]#011train-logloss:0.27366#011validation-logloss:0.29118
[41]#011train-logloss:0.27352#011validation-logloss:0.29117
[42]#011train-logloss:0.27316#011validation-logloss:0.29111
[43]#011train-logloss:0.27294#011validation-logloss:0.29095
[44]#011train-logloss:0.27274#011validation-logloss:0.29101
[45]#011train-logloss:0.27254#011validation-logloss:0.29093
[46]#011train-logloss:0.27240#011validation-logloss:0.29085
[47]#011train-logloss:0.27223#011validation-logloss:0.29084
[48]#011train-logloss:0.27210#011validation-logloss:0.29078
[49]#011train-logloss:0.27198#011validation-logloss:0.29069
2024-08-05 08:21:15 Completed - Training job completed
Training seconds: 84
Billable seconds: 32
Managed Spot Training savings: 61.9%
Overall Classification Rate: 88.5%
Predicted
           No Purchase
                         Purchase
Observed
No Purchase 88.5% (10936)
                             0.0\% (0)
           11.5% (1421 ) 0.0% (0
Purchase
[{'ResponseMetadata': {'RequestId': 'ENYD3KAHE4SNBGKC',
 'HostId':
'G5+wQMZG3V2XL4k+CST6SGk2XHf1NiuchzlIIHjikcP5q5OjiJIY4ItRt3MBGcf4LIdn2oM5E+L98rGsvnzyb8GUEnaqVL
bY',
 'HTTPStatusCode': 200,
 'HTTPHeaders': {'x-amz-id-2':
'G5+wQMZG3V2XL4k+CST6SGk2XHf1NiuchzlIIHjikcP5q5OjiJIY4ItRt3MBGcf4LIdn2oM5E+L98rGsvnzyb8GUEnaqVL
bY',
  'x-amz-request-id': 'ENYD3KAHE4SNBGKC',
  'date': 'Mon, 05 Aug 2024 12:50:04 GMT',
  'content-type': 'application/xml',
  'transfer-encoding': 'chunked',
  'server': 'AmazonS3',
  'connection': 'close'},
 'RetryAttempts': 0},
 'Deleted': [{'Key':
worker 0.json'},
```

```
{'Key':
'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/profiler-output/system/incremental/2024080508/1
722846000.algo-1.json'},
 {'Key':
20 worker 0.tfevents'},
 {'Key':
'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/debug-output/collections/00000000/worker 0 c
ollections.json'},
 {'Key': 'xgboost-formyproject/test/test.csv'},
 {'Key':
'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/profiler-output/system/training job end.ts'},
 {'Key':
worker 0.json'},
 {'Key':
worker 0.json'},
 {'Key':
worker 0.json'},
 {'Key':
00 worker 0.tfevents'},
 {'Key': 'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/debug-output/training job end.ts'},
 {'Key':
'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/profiler-output/framework/training job end.ts'},
 {'Key': 'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/output/model.tar.gz'},
worker 0.json'},
 {'Key':
'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/profiler-output/system/incremental/2024080508/1
722846060.algo-1.json'},
 {'Key':
40 worker 0.tfevents'},
 {'Key':
'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/profiler-output/system/incremental/2024080508/1
722845940.algo-1.json'},
 {'Key': 'xgboost-formyproject/train/train.csv'},
 {'Key': 'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/debug-output/claim.smd'},
'xgboost-formyproject/output/sagemaker-xgboost-2024-08-05-08-19-12-579/debug-output/events/00000000010/0000000000
10_worker_0.tfevents'},
 {'Key':
30 worker 0.tfevents'\}]\}]
```