In [97]:
```python
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```
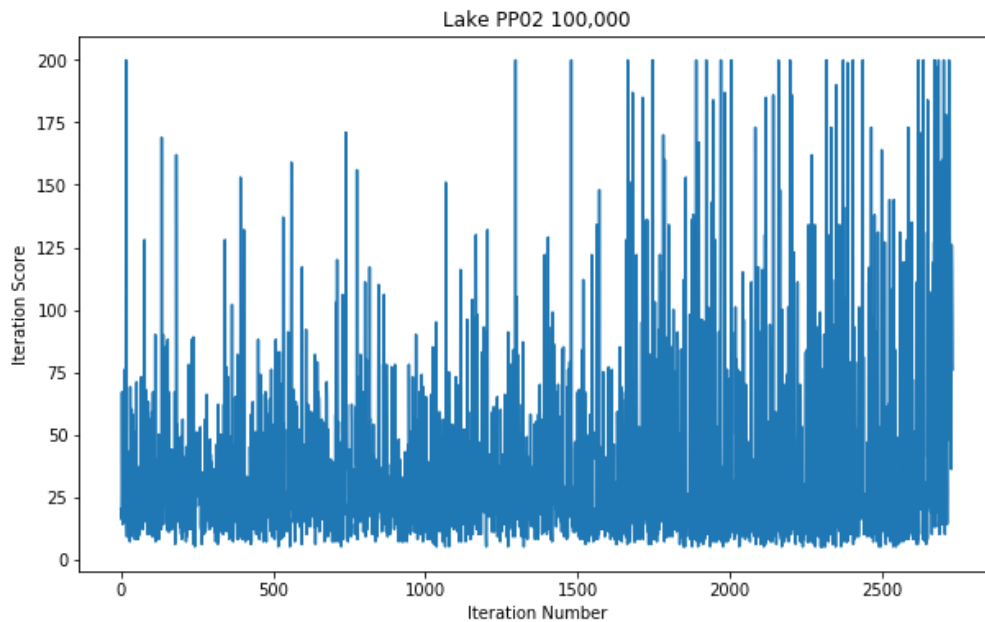
In [113]:
```python
# LAKE PP02 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_pp02_100000.csv")
lake_pp02_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x_h = pd.to_numeric(lake_pp02_100000_df.index.values)
pp02_hy = pd.to_numeric(lake_pp02_100000_df.l.values)
ax.set_title("Lake PP02 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x_h , pp02_hy);
```
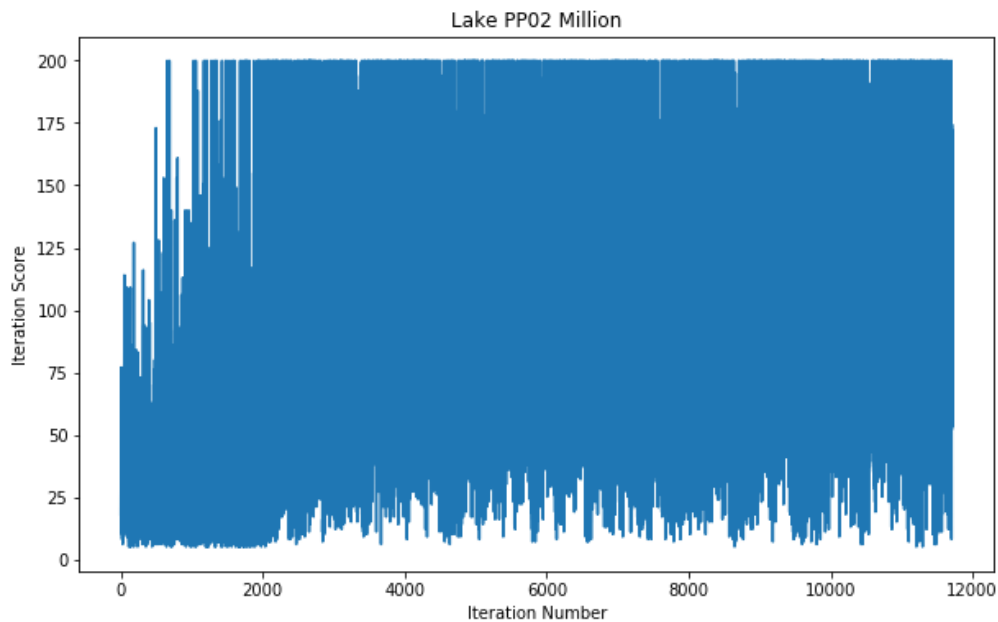
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:5: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  """
```

In [114]:
```python
# LAKE PP02 MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_pp02_million.csv")
lake_pp02_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x_m = pd.to_numeric(lake_pp02_million_df.index.values)
pp02_my = pd.to_numeric(lake_pp02_million_df.l.values)
ax.set_title("Lake PP02 Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x_m , pp02_my);
```
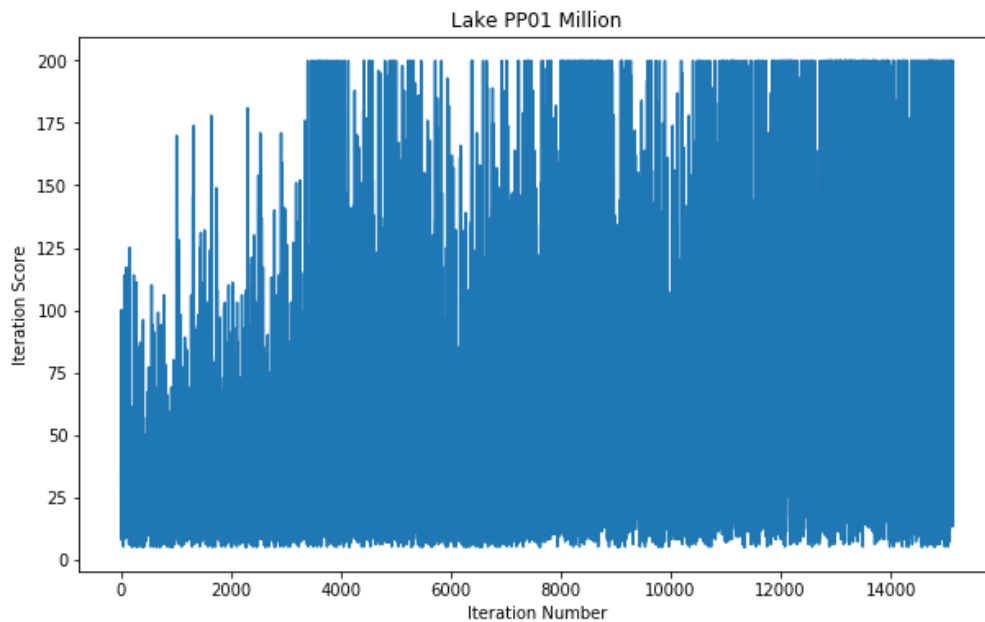
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.

In [115]:
```python
# LAKE PP01 MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_ppo1_million.csv")
lake_pp01_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_pp01_million_df.index.values)
pp01_my = pd.to_numeric(lake_pp01_million_df.l.values)
ax.set_title("Lake PP01 Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , pp01_my);
```
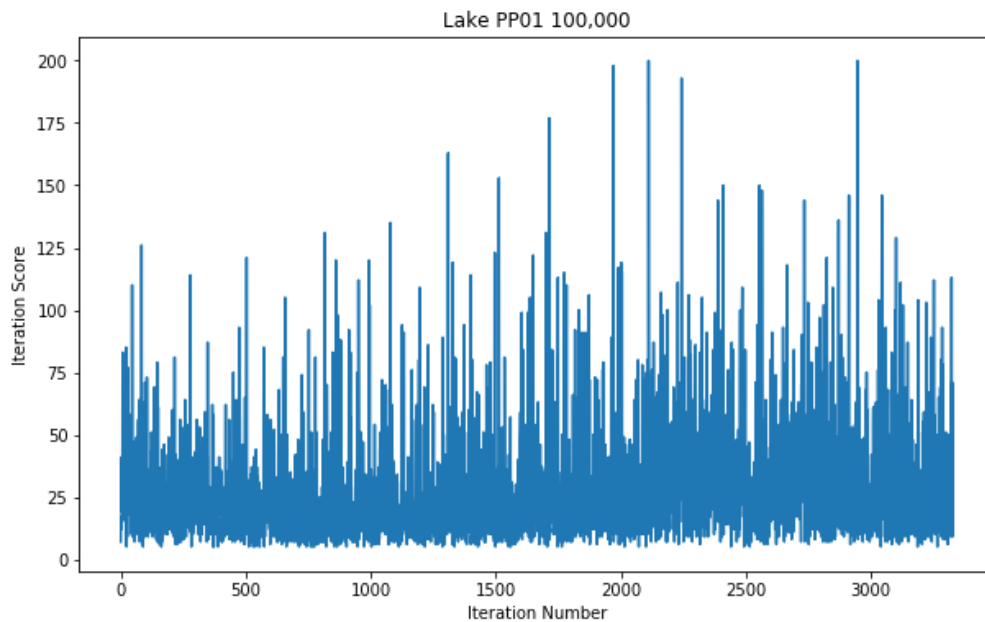
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.

In [116]:
```python
# LAKE PP01 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_ppo1_100000.csv")
lake_pp01_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_pp01_100000_df.index.values)
pp01_hy = pd.to_numeric(lake_pp01_100000_df.l.values)
ax.set_title("Lake PP01 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , pp01_hy);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```

In [117]:
```python
# LAKE DQN Million
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_dqn_million.csv")
lake_dqn_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_dqn_million_df.index.values)
dqn_my = pd.to_numeric(lake_dqn_million_df.l.values)
ax.set_title("Lake DQN Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x , dqn_my);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```
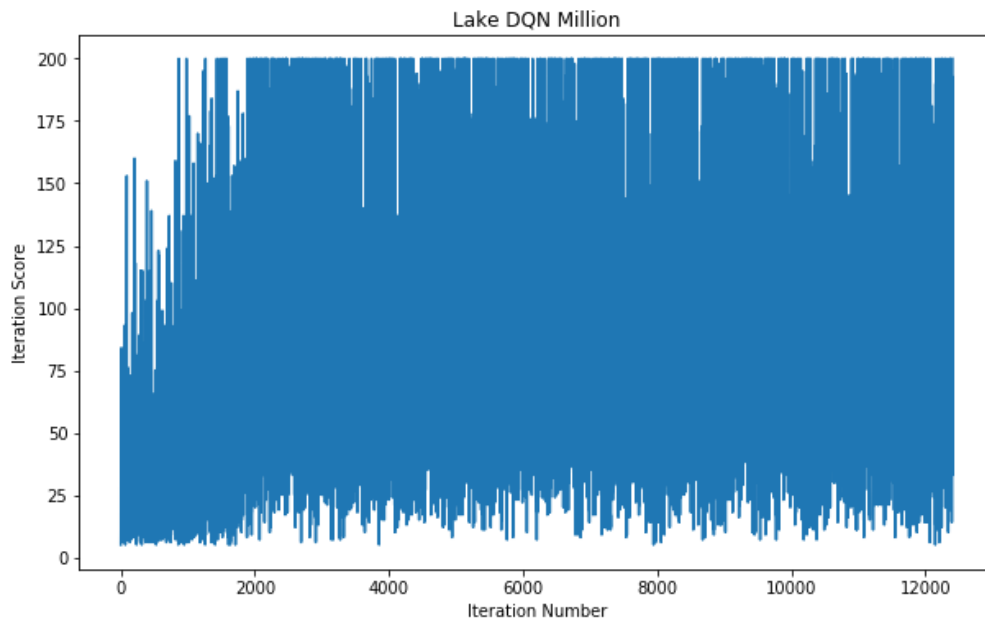
In [118]:
```python
# LAKE DDPG Million
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_ddpg_million.csv")
lake_ddpg_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_ddpg_million_df.index.values)
y = pd.to_numeric(lake_ddpg_million_df.l.values)
ax.set_title("Lake DDPG Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);

# Moving average dangerous, maybe like k-nearest neigbors type of thing
```

```
---------------------------------------------------------------------------
FileNotFoundError                         Traceback (most recent call last)
<ipython-input-118-e66eee649061> in <module>
      1 # LAKE DDPG Million
      2 # Read in File as pandas dataframe
----> 3 file_data = pd.read_csv("lake/lake_ddpg_million.csv")
      4 lake_ddpg_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=
file_data.iloc[1:,].as_matrix())
      5

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in parser_f(filepath_or_buffer, sep, delimiter, header, names, index_co
l, usecols, squeeze, prefix, mangle_dupe_cols, dtype, engine, converters, true_
values, false_values, skipinitialspace, skiprows, nrows, na_values, keep_defaul
t_na, na_filter, verbose, skip_blank_lines, parse_dates, infer_datetime_format,
keep_date_col, date_parser, dayfirst, iterator, chunksize, compression, thousan
ds, decimal, lineterminator, quotechar, quoting, escapechar, comment, encoding,
dialect, tupleize_cols, error_bad_lines, warn_bad_lines, skipfooter, doublequot
e, delim_whitespace, low_memory, memory_map, float_precision)
    676                     skip_blank_lines=skip_blank_lines)
    677
--> 678         return _read(filepath_or_buffer, kwds)
    679
    680     parser_f.__name__ = name

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _read(filepath_or_buffer, kwds)
    438
    439     # Create the parser.
--> 440     parser = TextFileReader(filepath_or_buffer, **kwds)
    441
    442     if chunksize or iterator:

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, f, engine, **kwds)
    785                 self.options['has_index_names'] = kwds['has_index_names']
    786
--> 787             self._make_engine(self.engine)
    788
    789     def close(self):

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _make_engine(self, engine)
   1012     def _make_engine(self, engine='c'):
   1013         if engine == 'c':
-> 1014             self._engine = CParserWrapper(self.f, **self.options)
   1015         else:
   1016             if engine == 'python':

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, src, **kwds)
   1706             kwds['usecols'] = self.usecols
   1707
-> 1708         self._reader = parsers.TextReader(src, **kwds)
   1709
   1710         passed_names = self.names is None

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader.__cinit__()

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader._setup_parser_sourc
e()

FileNotFoundError: File b'lake/lake_ddpg_million.csv' does not exist
```

In [119]:
```python
# LAKE DDPG 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_ddpg_100000.csv")
lake_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_ddpg_100000_df.index.values)
y = pd.to_numeric(lake_ddpg_100000_df.l.values)
ax.set_title("Lake DDPG 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

```
---------------------------------------------------------------------------
FileNotFoundError                         Traceback (most recent call last)
<ipython-input-119-72b1099225a8> in <module>
      1 # LAKE DDPG 100000
      2 # Read in File as pandas dataframe
----> 3 file_data = pd.read_csv("lake/lake_ddpg_100000.csv")
      4 lake_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=f
ile_data.iloc[1:,].as_matrix())
      5

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in parser_f(filepath_or_buffer, sep, delimiter, header, names, index_co
l, usecols, squeeze, prefix, mangle_dupe_cols, dtype, engine, converters, true_
values, false_values, skipinitialspace, skiprows, nrows, na_values, keep_defaul
t_na, na_filter, verbose, skip_blank_lines, parse_dates, infer_datetime_format,
keep_date_col, date_parser, dayfirst, iterator, chunksize, compression, thousan
ds, decimal, lineterminator, quotechar, quoting, escapechar, comment, encoding,
dialect, tupleize_cols, error_bad_lines, warn_bad_lines, skipfooter, doublequot
e, delim_whitespace, low_memory, memory_map, float_precision)
    676                     skip_blank_lines=skip_blank_lines)
    677
--> 678         return _read(filepath_or_buffer, kwds)
    679
    680     parser_f.__name__ = name

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _read(filepath_or_buffer, kwds)
    438
    439     # Create the parser.
--> 440     parser = TextFileReader(filepath_or_buffer, **kwds)
    441
    442     if chunksize or iterator:

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, f, engine, **kwds)
    785             self.options['has_index_names'] = kwds['has_index_names']
    786
--> 787         self._make_engine(self.engine)
    788
    789     def close(self):

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _make_engine(self, engine)
   1012     def _make_engine(self, engine='c'):
   1013         if engine == 'c':
-> 1014             self._engine = CParserWrapper(self.f, **self.options)
   1015         else:
   1016             if engine == 'python':

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, src, **kwds)
   1706             kwds['usecols'] = self.usecols
   1707
-> 1708         self._reader = parsers.TextReader(src, **kwds)
   1709
   1710         passed_names = self.names is None

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader.__cinit__()

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader._setup_parser_sourc
e()

FileNotFoundError: File b'lake/lake_ddpg_100000.csv' does not exist
```

```
In [120]:  k = 100
           y2 = []
           for i in range(len(y) - k):
               num = 0
               for j in range(k):
                   num += y[i+j]
               y2.append(num/k)

           # LAKE DDPG 100000
           # Read in File as pandas dataframe
           file_data = pd.read_csv("lake/lake_ddpg_100000.csv")
           lake_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
           .iloc[1:,].as_matrix())

           #PLOTTING
           fig, ax = plt.subplots(1,1, figsize=(10,6))
           x2 = pd.to_numeric(lake_ddpg_100000_df.iloc[:-k].index.values)
           #y = pd.to_numeric(lake_ddpg_100000_df.l.values)
           ax.set_title("Lake DDPG 100000")
           ax.set_xlabel("Iteration Number")
           ax.set_ylabel("Iteration Score")
           ax.plot(x2, y2);
```

```
        -------------------------------------------------------------------------
        FileNotFoundError                         Traceback (most recent call last)
        <ipython-input-120-7e1f5240869e> in <module>
             10 # LAKE DDPG 100000
             11 # Read in File as pandas dataframe
        ---> 12 file_data = pd.read_csv("lake/lake_ddpg_100000.csv")
             13 lake_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=f
        ile_data.iloc[1:,].as_matrix())
             14


        ~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
        sers.py in parser_f(filepath_or_buffer, sep, delimiter, header, names, index_co
        l, usecols, squeeze, prefix, mangle_dupe_cols, dtype, engine, converters, true_
        values, false_values, skipinitialspace, skiprows, nrows, na_values, keep_defaul
        t_na, na_filter, verbose, skip_blank_lines, parse_dates, infer_datetime_format,
        keep_date_col, date_parser, dayfirst, iterator, chunksize, compression, thousan
        ds, decimal, lineterminator, quotechar, quoting, escapechar, comment, encoding,
        dialect, tupleize_cols, error_bad_lines, warn_bad_lines, skipfooter, doublequot
        e, delim_whitespace, low_memory, memory_map, float_precision)
            676                         skip_blank_lines=skip_blank_lines)
            677
        --> 678         return _read(filepath_or_buffer, kwds)
            679
            680     parser_f.__name__ = name


        ~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
        sers.py in _read(filepath_or_buffer, kwds)
            438
            439     # Create the parser.
        --> 440     parser = TextFileReader(filepath_or_buffer, **kwds)
            441
            442     if chunksize or iterator:


        ~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
        sers.py in __init__(self, f, engine, **kwds)
            785                 self.options['has_index_names'] = kwds['has_index_names']
            786
        --> 787         self._make_engine(self.engine)
            788
            789     def close(self):


        ~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
        sers.py in _make_engine(self, engine)
           1012     def _make_engine(self, engine='c'):
           1013         if engine == 'c':
        -> 1014             self._engine = CParserWrapper(self.f, **self.options)
           1015         else:
           1016             if engine == 'python':


        ~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
        sers.py in __init__(self, src, **kwds)
           1706             kwds['usecols'] = self.usecols
           1707
        -> 1708         self._reader = parsers.TextReader(src, **kwds)
           1709
           1710         passed_names = self.names is None


        pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader.__cinit__()


        pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader._setup_parser_sourc
        e()


        FileNotFoundError: File b'lake/lake_ddpg_100000.csv' does not exist
```
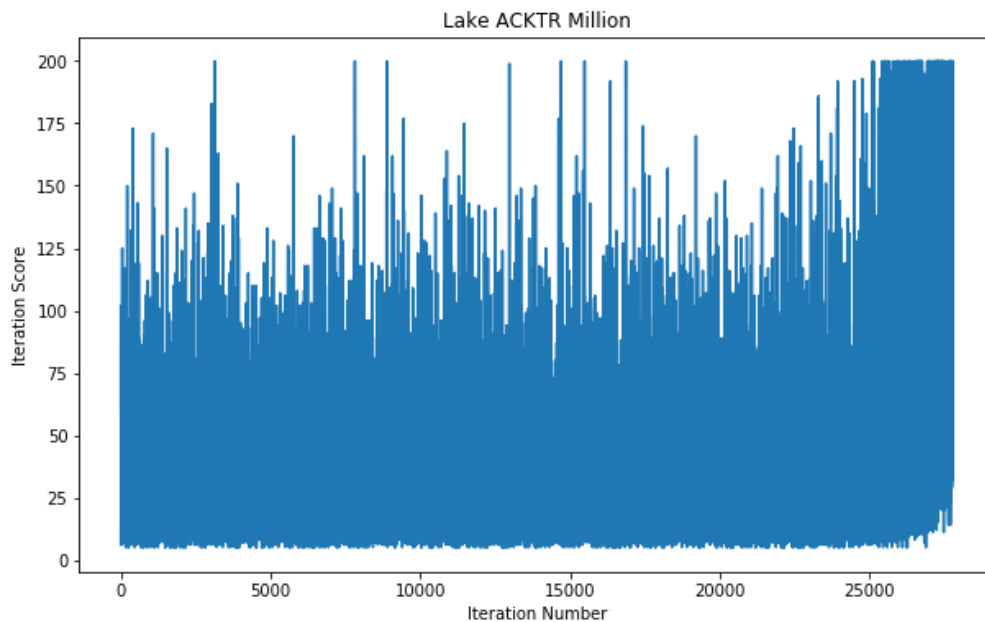
In [ ]:
```python
# LAKE ACKTR 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acktr_100000.csv")
lake_acktr_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acktr_100000_df.index.values)
y = pd.to_numeric(lake_acktr_100000_df.l.values)
ax.set_title("Lake ACKTR 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

In [121]:
```python
# LAKE ACKTR MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acktr_million.csv")
lake_acktr_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acktr_million_df.index.values)
y = pd.to_numeric(lake_acktr_million_df.l.values)
ax.set_title("Lake ACKTR Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```
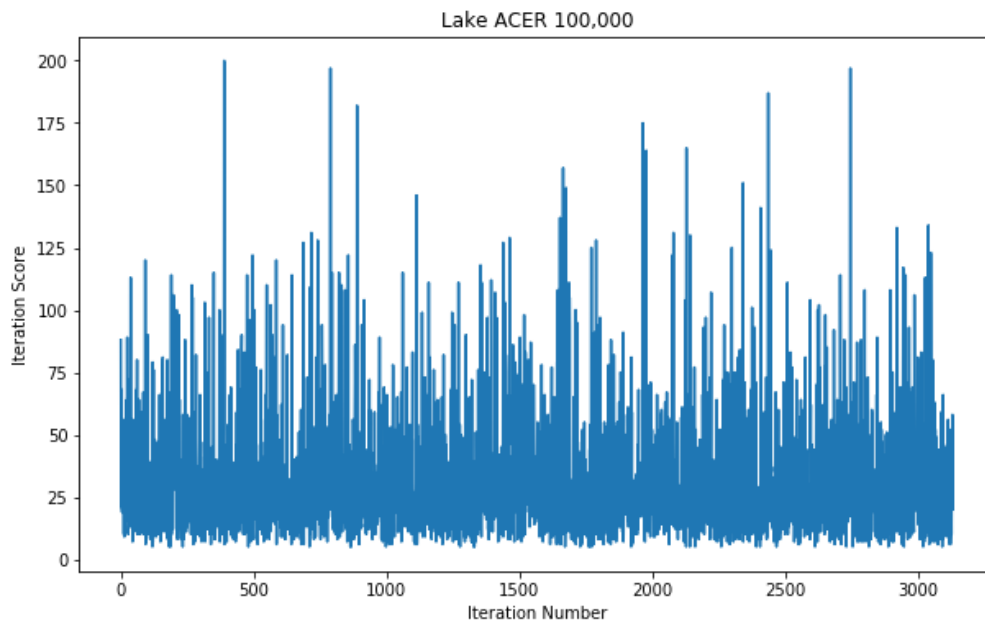
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```

In [122]:
```python
# LAKE ACER 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acer_100000.csv")
lake_acer_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acer_100000_df.index.values)
y = pd.to_numeric(lake_acer_100000_df.l.values)
ax.set_title("Lake ACER 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```
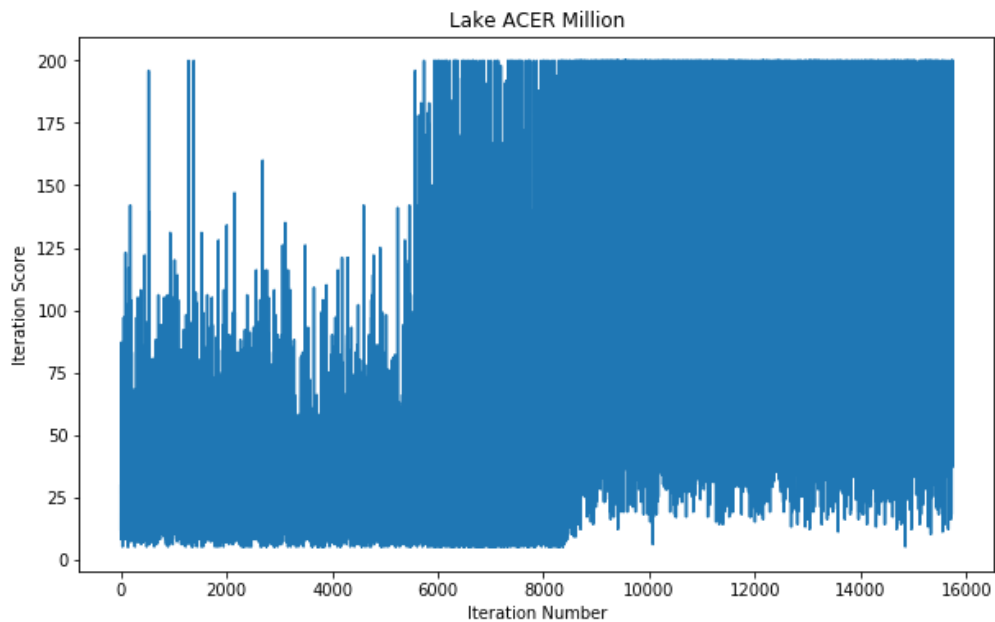
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.

In [123]:
```python
# LAKE ACER MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_acer_million.csv")
lake_acer_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_acer_million_df.index.values)
y = pd.to_numeric(lake_acer_million_df.l.values)
ax.set_title("Lake ACER Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```
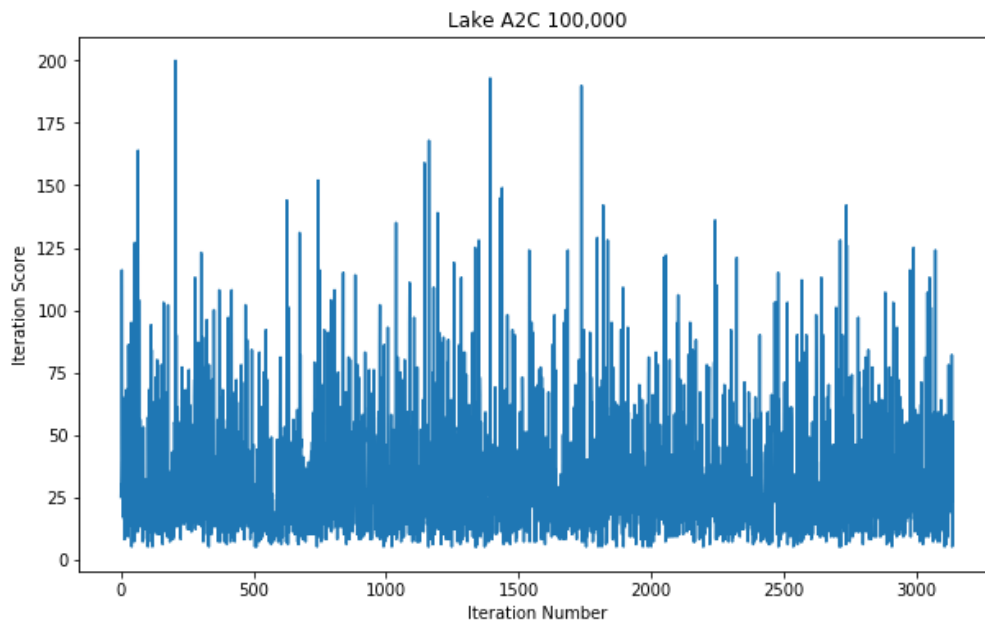
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.

In [124]:
```python
# LAKE A2C 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_a2c_100000.csv")
lake_a2c_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data.
iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_a2c_100000_df.index.values)
y = pd.to_numeric(lake_a2c_100000_df.l.values)
ax.set_title("Lake A2C 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```
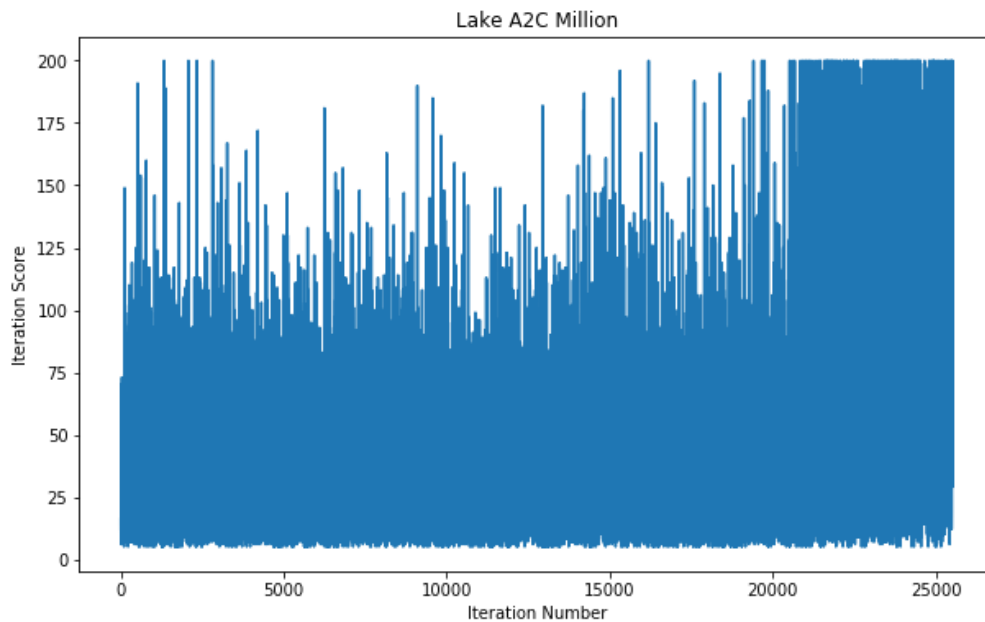
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.

In [125]:
```python
# LAKE A2C MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lake/lake_a2c_million.csv")
lake_a2c_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data
.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lake_a2c_million_df.index.values)
y = pd.to_numeric(lake_a2c_million_df.l.values)
ax.set_title("Lake A2C Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.

Lake A2C Million

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