In [12]:
```
1 test_templates()
```

```
******************************
Test name =  Test2
Template =  {'birthMonth': '9', 'nameLast': 'Williams'}
Fields =  ['nameLast', 'nameFirst', 'birthMonth', 'birthYear']
[{'nameLast': 'Williams', 'nameFirst': 'Bernie', 'birthMonth': '9', 'birthYear': '1968'}, {'nameLast': 'Williams', 'n
ameFirst': 'Don', 'birthMonth': '9', 'birthYear': '1931'}, {'nameLast': 'Williams', 'nameFirst': 'Don', 'birthMonth':
'9', 'birthYear': '1935'}, {'nameLast': 'Williams', 'nameFirst': 'Nick', 'birthMonth': '9', 'birthYear': '1993'}, {'n
ameLast': 'Williams', 'nameFirst': 'Randy', 'birthMonth': '9', 'birthYear': '1975'}, {'nameLast': 'Williams', 'nameFi
rst': 'Stan', 'birthMonth': '9', 'birthYear': '1936'}]
Result table:
[
  {
    "nameLast": "Williams",
    "nameFirst": "Bernie",
    "birthMonth": "9",
    "birthYear": "1968"
  },
  {
    "nameLast": "Williams",
    "nameFirst": "Don",
    "birthMonth": "9",
    "birthYear": "1931"
  },
  {
    "nameLast": "Williams",
    "nameFirst": "Don",
    "birthMonth": "9",
    "birthYear": "1935"
  },
  {
    "nameLast": "Williams",
    "nameFirst": "Nick",
    "birthMonth": "9",
    "birthYear": "1993"
  },
  {
    "nameLast": "Williams",
    "nameFirst": "Randy",
    "birthMonth": "9",
    "birthYear": "1975"
  },
  {
    "nameLast": "Williams",
    "nameFirst": "Stan",
    "birthMonth": "9",
    "birthYear": "1936"
  }
]


******************************
Test name =  Test3
Template =  {'nameFirst': 'Ted', 'nameLast': 'Williams'}
Fields =  ['nameLast', 'nameFirst', 'birthMonth', 'birthYear']
[{'nameLast': 'Williams', 'nameFirst': 'Ted', 'birthMonth': '8', 'birthYear': '1918'}]
Result table:
[
  {
    "nameLast": "Williams",
    "nameFirst": "Ted",
    "birthMonth": "8",
    "birthYear": "1918"
  }
]


******************************
Test name =  Test4
Template =  {'nameFirst': 'Ted', 'nameLast': 'Williams'}
Fields =  ['nameLast', 'nameFirst', 'birthMonth', 'birthYear']
Exception =  No such key_column in columns
```

In [13]:
```
1 test_key()
```

```
*******************************
Test name =  Primary_key Test 1
String =  ['willite01']
[OrderedDict([('playerID', 'willite01'), ('birthYear', '1918'), ('birthMonth', '8'), ('birthDay', '30'), ('birthCount
ry', 'USA'), ('birthState', 'CA'), ('birthCity', 'San Diego'), ('deathYear', '2002'), ('deathMonth', '7'), ('deathDa
y', '5'), ('deathCountry', 'USA'), ('deathState', 'FL'), ('deathCity', 'Inverness'), ('nameFirst', 'Ted'), ('nameLas
t', 'Williams'), ('nameGiven', 'Theodore Samuel'), ('weight', '205'), ('height', '75'), ('bats', 'L'), ('throws',
'R'), ('debut', '1939-04-20'), ('finalGame', '1960-09-28'), ('retroID', 'willt103'), ('bbrefID', 'willite01')])]
Result table:
[
  {
    "playerID": "willite01",
    "birthYear": "1918",
    "birthMonth": "8",
    "birthDay": "30",
    "birthCountry": "USA",
    "birthState": "CA",
    "birthCity": "San Diego",
    "deathYear": "2002",
    "deathMonth": "7",
    "deathDay": "5",
    "deathCountry": "USA",
    "deathState": "FL",
    "deathCity": "Inverness",
    "nameFirst": "Ted",
    "nameLast": "Williams",
    "nameGiven": "Theodore Samuel",
    "weight": "205",
    "height": "75",
    "bats": "L",
    "throws": "R",
    "debut": "1939-04-20",
    "finalGame": "1960-09-28",
    "retroID": "willt103",
    "bbrefID": "willite01"
  }
```

```
*******************************
Test name =  Primary_key Test 2
String =  ['alvarcl01']
[{'nameLast': 'Alvarez', 'nameFirst': 'Clemente', 'birthMonth': '5', 'birthYear': '1968'}]
Result table:
[
  {
    "nameLast": "Alvarez",
    "nameFirst": "Clemente",
    "birthMonth": "5",
    "birthYear": "1968"
  }
]
```

```
*******************************
Test name =  Primary_key Test 3
String =  ['aardsda01', '2015', 'ATL', '1']
[{'playerID': 'aardsda01', 'yearID': '2015', 'teamID': 'ATL', 'AB': '1', 'H': '0', 'HR': '0'}]
Result table:
[
  {
    "playerID": "aardsda01",
    "yearID": "2015",
    "teamID": "ATL",
    "AB": "1",
    "H": "0",
    "HR": "0"
  }
]
```

In [14]:
```
1 test_inserts()
```

```
*******************************
Test name =  Insert Test 1
Row to insert =  {'playerID': 'dff1', 'nameLast': 'Ferguson', 'nameFirst': 'Donald'}
[]
{'playerID': 'dff1', 'nameLast': 'Ferguson', 'nameFirst': 'Donald'}


*******************************
Test name =  Find after insert 1
String =  ['dff1']
[{'nameLast': 'Ferguson', 'nameFirst': 'Donald', 'birthMonth': '', 'birthYear': ''}]
Result table:
[
  {
    "nameLast": "Ferguson",
    "nameFirst": "Donald",
    "birthMonth": "",
    "birthYear": ""
  }
]


*******************************
Test name =  Insert Test 2
Row to insert =  {'playerID': 'dff1', 'nameLast': 'Ferguson', 'nameFirst': 'Donald'}
[OrderedDict([('playerID', 'dff1'), ('birthYear', ''), ('birthMonth', ''), ('birthDay', ''), ('birthCountry', ''),
('birthState', ''), ('birthCity', ''), ('deathYear', ''), ('deathMonth', ''), ('deathDay', ''), ('deathCountry', ''),
('deathState', ''), ('deathCity', ''), ('nameFirst', 'Donald'), ('nameLast', 'Ferguson'), ('nameGiven', ''), ('weigh
t', ''), ('height', ''), ('bats', ''), ('throws', ''), ('debut', ''), ('finalGame', ''), ('retroID', ''), ('bbrefID',
'')])]
Exception =  This row exists
OK. Did not insert duplicate key.
```

In [4]:
```
1 test_deletes()
```

```
*******************************
Test name =  Delete Test 1
Template =  {'birthMonth': '9', 'nameLast': 'Williams'}
calling the function


*******************************
Test name =  Find after delete 1
Template =  {'birthMonth': '9', 'nameLast': 'Williams'}
Fields =  None
[]
Result table:
[]


*******************************
Test name =  Delete Test 1
Template =  {'birthMonth': '13', 'nameLast': 'Williams'}
calling the function
OK, do not delete here
```