

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py
homework_1_1.py test_program_1.py homework_1_2.py
1 from homework_1_1 import CSVDataFile
2 import json
3
4 # Initialize the Batting table
5 batting_csvtable = CSVDataFile("batting", "Batting.csv", ["playerID", "teamID", "yearID", "stint"])
6 batting_csvtable.load()
7
8 # Test find_by_primary_key
9 # If the fields is None
10 ans = batting_csvtable.find_by_primary_key(["abbeych01", "WAS", "1897", "1"])
11 print(json.dumps(ans, indent=2))
12
13 # If the fields is not None
14 ans = batting_csvtable.find_by_primary_key(["abbeych01", "WAS", "1897", "1"], [{"playerID", "lgID", "G", "BB", "SH"}])
```

Run: test_program_1 x

```
D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test_program_1.py
D:/Columbia_University/Course/DB/Homework1/hw1-data/Data/Batting.csv
{
  "SB": "9",
  "BB": "27",
  "stint": "1",
  "SF": "",
  "AB": "300",
  "playerID": "abbeych01",
  "SH": "3",
  "HBP": "4",
  "G": "80",
  "3B": "8",
  "H": "78",
  "HR": "3",
  "1B": "",
  "CS": "",
  "R": "69",
  "RBI": "34",
  "2B": "14",
  "yearID": "1897",
  "lgID": "NL",
  "GIDP": "1",
  "SO": "15",
  "teamID": "WAS"
}
```

The fields have attributes that don't exist in table

161 chars, 3 line breaks 8:1 CRLF: UTF-8 23:59 2018/9/22

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py
homework_1_1.py test_program_1.py homework_1_2.py
10 ans = batting_csvtable.find_by_primary_key(["abbeych01", "WAS", "1897", "1"])
11 print(json.dumps(ans, indent=2))
12 # If the fields is not None
13 ans = batting_csvtable.find_by_primary_key(["abbeych01", "WAS", "1897", "1"], [{"playerID", "lgID", "G", "BB", "SH"}])
14 print(json.dumps(ans, indent=2))
15 # If the fields has values that don't exist in csv file, in the case, I use "CCCC" to test my program
16 ans = batting_csvtable.find_by_primary_key(["abbeych01", "WAS", "1897", "1"], [{"playerID", "lgID", "G", "BB", "CCCC"}])
17 # print(json.dumps(ans, indent=2))
18
```

Run: test_program_1 x

```
D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test_program_1.py
D:/Columbia_University/Course/DB/Homework1/hw1-data/Data/Batting.csv
{
  "G": "80",
  "lgID": "NL",
  "BB": "27",
  "SH": "3",
  "playerID": "abbeych01"
}
```

The fields have attributes that don't exist in table

Process finished with exit code 0

177 chars, 2 line breaks 12:1 CRLF: UTF-8 23:59 2018/9/22

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py
homework_1_1.py x test_program_1.py x homework_1_2.py x
11 # print(json.dumps(ans, indent=2))
12 # If the fields is not None
13 ans = batting_csvtable.find_by_primary_key(["abercrombie", "WAS", "1897", "1"], [{"playerID": "lgID", "G": "BB", "SH"}])
14 # print(json.dumps(ans, indent=2))
15 # If the fields has values that don't exist in csv file, in the case, I use "CCCCC" to test my program
16 ans = batting_csvtable.find_by_primary_key(["abercrombie", "WAS", "1897", "1"], [{"playerID": "lgID", "G": "BB", "CCCCC"}])
17 print(json.dumps(ans, indent=2))
18
Run: test_program_1 x
D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test_program_1.py
D:\Columbia_University\Course\DB\Homework\hw1-data\Data\Batting.csv
The fields have attributes that don't exist in table
null
Process finished with exit code 0
```

255 chars, 2 line breaks 15:1 CRLF UTF-8 23:57 2018/9/22

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py
homework_1_1.py x test_program_1.py x homework_1_2.py x
12 # If the fields is not None
13 ans = batting_csvtable.find_by_primary_key(["abercrombie", "WAS", "1897", "1"], [{"playerID": "lgID", "G": "BB", "SH"}])
14 # print(json.dumps(ans, indent=2))
15 # If the fields has values that don't exist in csv file, in the case, I use "CCCCC" to test my program
16 ans = batting_csvtable.find_by_primary_key(["abercrombie", "WAS", "1897", "1"], [{"playerID": "lgID", "G": "BB", "CCCCC"}])
17 # print(json.dumps(ans, indent=2))
18
19 # Test find_by_template
20 # If the input is correct and fields is None
21 ans = batting_csvtable.find_by_template(["teamID": "CRV", "yearID": "2006"])
22 print(json.dumps(ans, indent=2))
23
Run: test_program_1 x
[
  {
    "BB": "0",
    "BBP": "0",
    "SB": "0",
    "BBB": "0",
    "SBP": "0",
    "AB": "0",
    "SH": "1",
    "teamID": "CRV",
    "playerID": "aardsda01",
    "yearID": "2006",
    "RBI": "0",
    "G": "45",
    "SO": "0",
    "atint": "1",
    "lgID": "NL",
    "HR": "0",
    "SBP": "0",
    "H": "0",
    "TBB": "0",
    "GIDP": "0",
    "CS": "0",
    "R": "0"
  },
  {
    "BB": "25",
    "BBP": "5"
  }
]
```

180 chars, 3 line breaks 19:1 CRLF UTF-8 0:13 2018/9/23

```
db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py test_program_1
homework_1_1.py test_program_1.py homework_1_2.py
19 # Test find_by_template
20 # If the input t is correct and fields is None
21 ans = batting_csvtable.find_by_template({"teamID": "CHN", "yearID": "2006"})
22 # print(json.dumps(ans, indent=2))
23 # If the input t is correct and fields is not None
24 ans = batting_csvtable.find_by_template({"teamID": "CHN", "yearID": "2006"}, [{"playerID": "yearID", "teamID",
25 "RBI": "G"}])
26 print(json.dumps(ans, indent=2))
27
Run: test_program_1
{
  "RBI": "0",
  "yearID": "2006",
  "teamID": "CHN",
  "G": "45",
  "playerID": "aardada01"
},
{
  "RBI": "53",
  "yearID": "2006",
  "teamID": "CHN",
  "G": "107",
  "playerID": "barreml01"
},
{
  "RBI": "37",
  "yearID": "2006",
  "teamID": "CHN",
  "G": "74",
  "playerID": "blanche01"
},
{
  "RBI": "12",
  "yearID": "2006",
  "teamID": "CHN",
  "G": "71",
  "playerID": "brynmfr01"
},
}
284 chars, 3 line breaks 23:1 CRLF UTF-8 0:16 2018/9/23
```

```
db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py test_program_1
homework_1_1.py test_program_1.py homework_1_2.py
19 # Test find_by_template
20 # If the input t is correct and fields is None
21 ans = batting_csvtable.find_by_template({"teamID": "CHN", "yearID": "2006"})
22 # print(json.dumps(ans, indent=2))
23 # If the input t is correct and fields is not None
24 ans = batting_csvtable.find_by_template({"teamID": "CHN", "yearID": "2006"}, [{"playerID": "yearID", "teamID",
25 "RBI": "G"}])
26 # print(json.dumps(ans, indent=2))
27 # If the input t is incorrect and fields is correct, in this case, "teamid" is not a attribute in csv
28 ans = batting_csvtable.find_by_template({"teamid": "CHN", "yearID": "2006"}, [{"playerID": "yearID", "teamID",
29 "RBI": "G"}])
30 print(json.dumps(ans, indent=2))
31
Run: test_program_1
D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework\test_program_1.py
D:/Columbia_University/Course/DB/Homework1/tw-data/Data/Batting.csv
search condition t has attributes that don't exist in table
null
Process finished with exit code 0
335 chars, 3 line breaks 27:1 CRLF UTF-8 0:20 2018/9/23
```

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

File Edit View Navigate Code Refactor Run Tools VCS Window Help

db_homework test_program_1.py

test_program_1.py

```
23 # print(json.dumps(ans, indent=2))
24 # If the input t is correct and fields is not None
25 Bats = batting_csvtable.find_by_template(["teamID": "CIN", "yearID": "2006"], ["playerID", "yearID", "teamID",
26 # "RBI", "G"])
27 # print(json.dumps(ans, indent=2))
28 # If the input t is incorrect and fields is correct, In this case, "teamID" is not a attribute in csv
29 # ans = batting_csvtable.find_by_template(["teamID": "CIN", "yearID": "2006"], ["playerID", "yearID", "teamID",
30 # "RBI", "G"])
31 # print(json.dumps(ans, indent=2))
32 # If the input t is correct and fields is incorrect, In this case, "playerID" is not a attribute in csv
33 # ans = batting_csvtable.find_by_template(["teamID": "CIN", "yearID": "2006"], ["playerID", "yearID", "teamID",
34 # "RBI", "G"])
35 print(json.dumps(ans, indent=2))
36
```

Run: test_program_1

D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test_program_1.py
D:\Columbia_University\Course\DB\Homework\hw1-data\Data\Batting.csv
fields have attributes that don't exist in table
null
Process finished with exit code 0

337 chars, 3 line breaks 32:1 CRLF UTF-8 0:24 2018/9/23

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

File Edit View Navigate Code Refactor Run Tools VCS Window Help

db_homework test_program_1.py

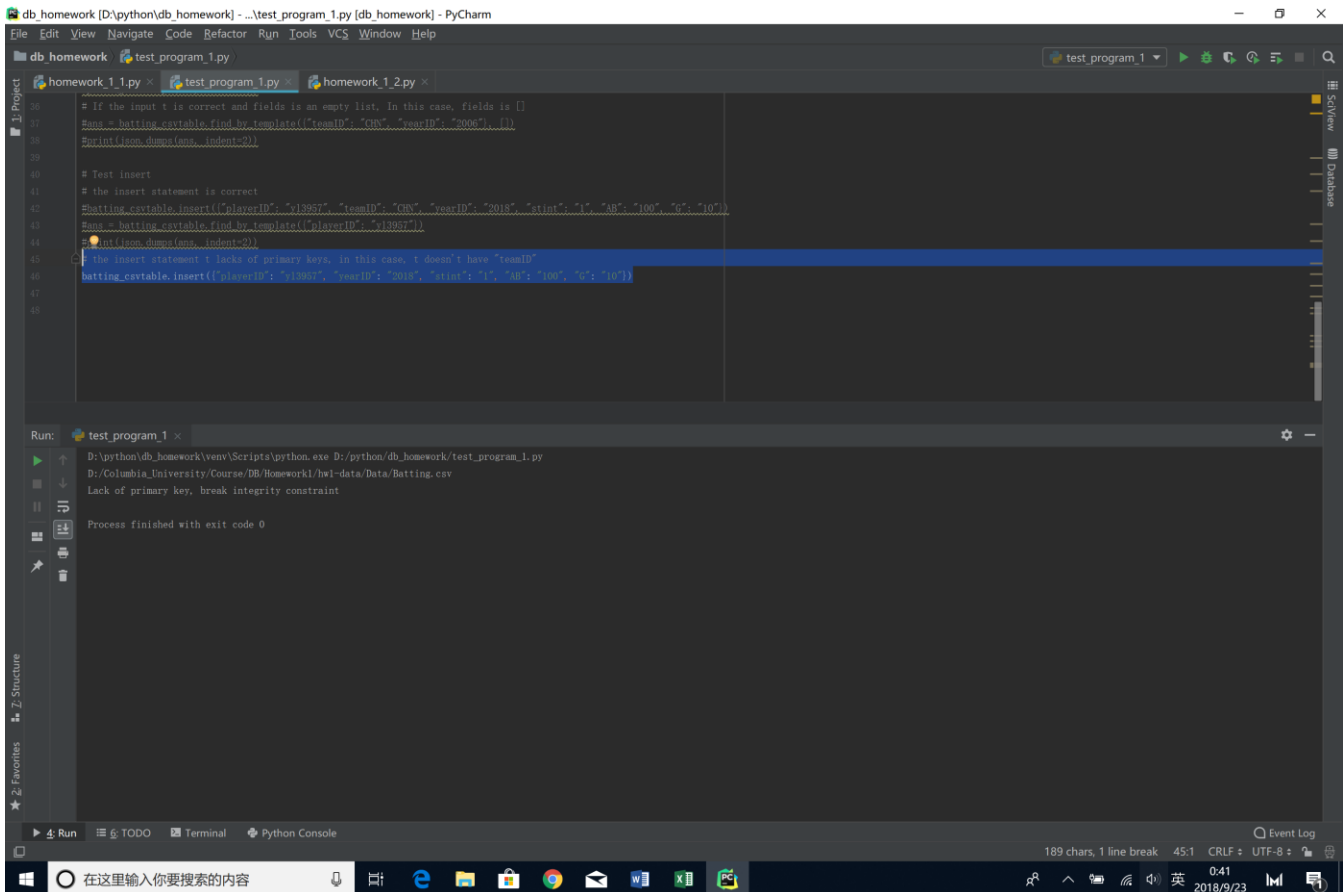
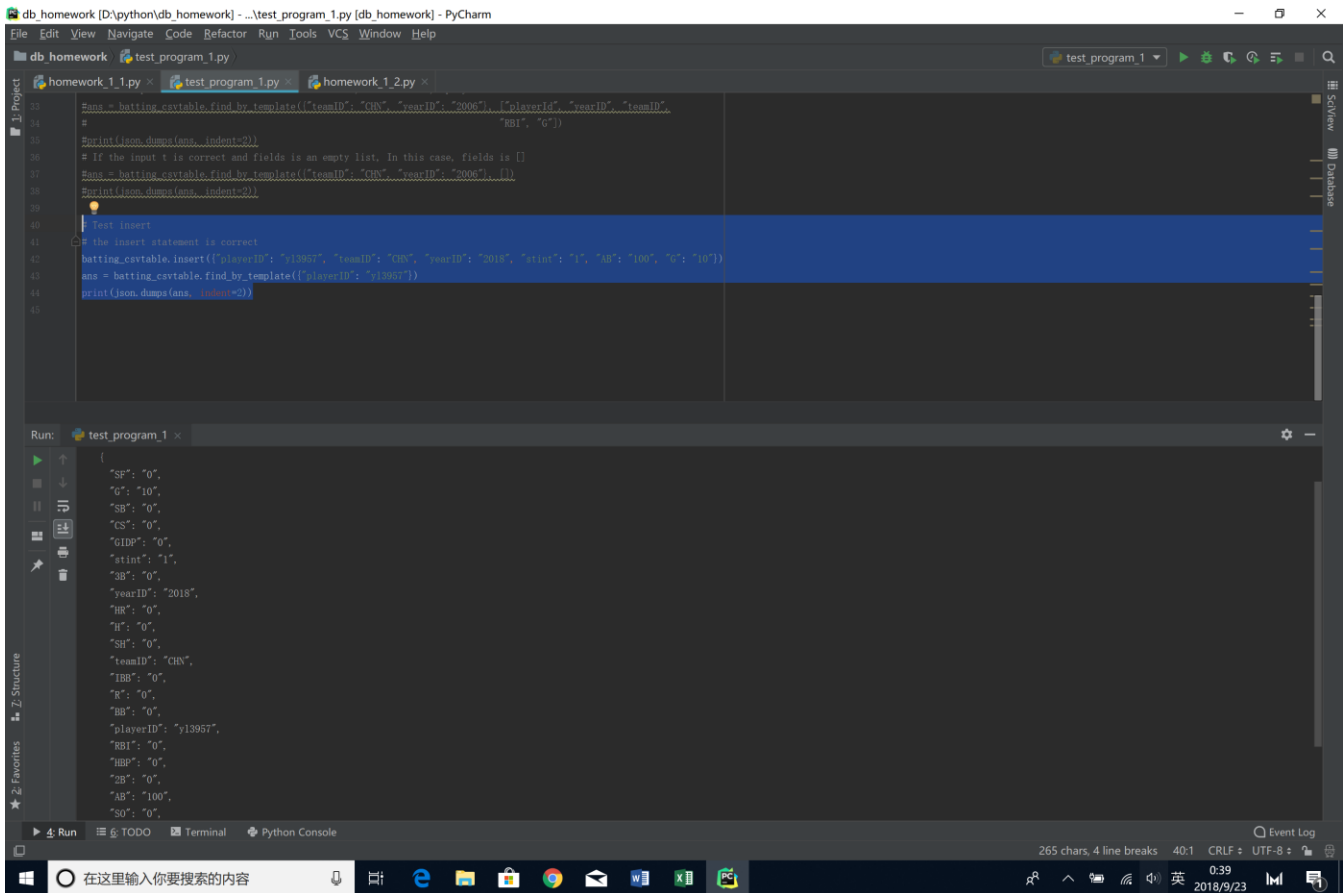
test_program_1.py

```
27 # print(json.dumps(ans, indent=2))
28 # If the input t is incorrect and fields is correct, In this case, "teamID" is not a attribute in csv
29 Bats = batting_csvtable.find_by_template(["teamID": "CIN", "yearID": "2006"], ["playerID", "yearID", "teamID",
30 # "RBI", "G"])
31 # print(json.dumps(ans, indent=2))
32 # If the input t is correct and fields is incorrect, In this case, "playerID" is not a attribute in csv
33 Bats = batting_csvtable.find_by_template(["teamID": "CIN", "yearID": "2006"], ["playerID", "yearID", "teamID",
34 # "RBI", "G"])
35 # print(json.dumps(ans, indent=2))
36 # If the input t is correct and fields is an empty list, In this case, fields is []
37 # ans = batting_csvtable.find_by_template(["teamID": "CIN", "yearID": "2006"], [])
38 print(json.dumps(ans, indent=2))
39
```

Run: test_program_1

D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test_program_1.py
D:\Columbia_University\Course\DB\Homework\hw1-data\Data\Batting.csv
the input fields can't be an empty list
null
Process finished with exit code 0

197 chars, 2 line breaks 36:1 CRLF UTF-8 0:26 2018/9/23



db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py
homework_1_1.py x test_program_1.py x homework_1_2.py x
# Test insert
# the insert statement is correct
Batting_csvtable.insert({"playerID": "v13957", "teamID": "CHW", "yearID": "2018", " stint": "1", "AB": "100", "G": "10"})
Row = Batting_csvtable.find_by_template({"playerID": "v13957"})
Print(json.dumps(row, indent=2))
# the insert statement t lacks of primary keys, in this case, t doesn't have "teamID"
Batting_csvtable.insert({"playerID": "v13957", "yearID": "2018", " stint": "1", "AB": "100", "G": "10"})
# if the new row has same key as one row has in csv file, in this case, ("aardada01", "SPN", "2004", "1")
# already exists in csv file
Batting_csvtable.insert({"playerID": "aardada01", "teamID": "SPN", "yearID": "2004", " stint": "1", "AB": "100"})
```

Run: test_program_1 x

D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test_program_1.py
D:/Columbia_University/Course/DB/Homework/hw1-data/Data/Batting.csv
Duplicate Key

Process finished with exit code 0

246 chars, 2 line breaks 47:1 CRLF UTF-8

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
db_homework test_program_1.py
homework_1_1.py x test_program_1.py x homework_1_2.py x
# the insert statement is correct
Batting_csvtable.insert({"playerID": "v13957", "teamID": "CHW", "yearID": "2018", " stint": "1", "AB": "100", "G": "10"})
Row = Batting_csvtable.find_by_template({"playerID": "v13957"})
Print(json.dumps(row, indent=2))
# the insert statement t lacks of primary keys, in this case, t doesn't have "teamID"
Batting_csvtable.insert({"playerID": "v13957", "yearID": "2018", " stint": "1", "AB": "100", "G": "10"})
# if the new row has same key as one row has in csv file, in this case, ("aardada01", "SPN", "2004", "1")
# already exists in csv file
Batting_csvtable.insert({"playerID": "aardada01", "teamID": "SPN", "yearID": "2004", " stint": "1", "AB": "100"})
# if t has attributes that don't exist in csv file, in this case, "XXXX" doesn't exist in csv file
Batting_csvtable.insert({"playerID": "aardada01", "teamID": "CHW", "yearID": "2004", " stint": "1", "XXXX": "100"})
```

Run: test_program_1 x

D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test_program_1.py
D:/Columbia_University/Course/DB/Homework/hw1-data/Data/Batting.csv
The column has attributes that don't exist in table

Process finished with exit code 0

215 chars, 1 line break 50:1 CRLF UTF-8

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

File Edit View Navigate Code Refactor Run Tools VCS Window Help

db_homework test_program_1.py

homework_1_1.py x test_program_1.py homework_1_2.py x

```
43 # Run = batting.csvtable.find_by_template({"playerID": "v13957"})
44 # Print(json.dumps(ans, indent=2))
45 # the insert statement t lacks of primary keys, in this case, t doesn't have "teamID"
46 # batting.csvtable.insert({"playerID": "v13957", "yearID": "2018", " stint": "1", "AB": "100", "G": "10"})
47 # if the new row has same key as one row has in csv file, in this case, ("aardsda01", "SPN", "2004", "1")
48 # already exists in csv file
49 # batting.csvtable.insert({"playerID": "aardsda01", "teamID": "SPN", "yearID": "2004", "stint": "1", "AB": "100"})
50 # If t has attributes that don't exist in csv file, in this case, "CCCCC" doesn't exist in csv file
51 # batting.csvtable.insert({"playerID": "aardsda01", "teamID": "CHN", "yearID": "2004", "stint": "1", "CCCCC": "100"})
52 # If t has primary keys that are null
53 batting.csvtable.insert({"playerID": "aardsda01", "teamID": "", "yearID": "2004", "stint": "1"})
54
55
```

Run: test_program_1 x

D:\python\db_homework\venv\Scripts\python.exe D:/python/db_homework/test_program_1.py
D:/Columbia_University/Course/DB/Homework1/hwl-data/Data/Batting.csv
Primary keys are null

Process finished with exit code 0

134 chars, 1 line break 52:1 CRLF: UTF-8 0:56 2018/9/23

db_homework [D:\python\db_homework] - ...test_program_1.py [db_homework] - PyCharm

File Edit View Navigate Code Refactor Run Tools VCS Window Help

db_homework test_program_1.py

homework_1_1.py x test_program_1.py homework_1_2.py x

```
48 # already exists in csv file
49 # batting.csvtable.insert({"playerID": "aardsda01", "teamID": "SPN", "yearID": "2004", "stint": "1", "AB": "100"})
50 # If t has attributes that don't exist in csv file, in this case, "CCCCC" doesn't exist in csv file
51 # batting.csvtable.insert({"playerID": "aardsda01", "teamID": "CHN", "yearID": "2004", "stint": "1", "CCCCC": "100"})
52 # If t has primary keys that are null
53 # batting.csvtable.insert({"playerID": "aardsda01", "teamID": "", "yearID": "2004", "stint": "1"})
54
55 # test delete
56 # If the deletion statement t is correct
57 batting.csvtable.delete({"playerID": "aardsda01", "yearID": "2004", "stint": "1"})
58 ans = batting.csvtable.find_by_template({"playerID": "aardsda01", "yearID": "2004", "stint": "1"})
59 print(ans)
60
```

Run: test_program_1 x

D:\python\db_homework\venv\Scripts\python.exe D:/python/db_homework/test_program_1.py
D:/Columbia_University/Course/DB/Homework1/hwl-data/Data/Batting.csv
[]

Process finished with exit code 0

247 chars, 4 line breaks 55:1 CRLF: UTF-8 1:00 2018/9/23

db_homework [D:\python\db_homework] - ...test.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help

db_homework test.py
Project db_homework D:\python\db_homework
  venv library root
  homework_1_1.py
  homework_1_2.py
  test.py
  test_program_1.py
  External Libraries
  Scratches and Consoles

homework_1_1.py test_program_1.py test.py homework_1_2.py
1 from homework_1_1 import CSVDataTable
2 import json
3
4 # Initialize the Batting table
5 batting_csvtable = CSVDataTable("batting", "Batting.csv", ["playerID", "teamID", "yearID", "stint"])
6 batting_csvtable.load()
7
8 # test save()
9 # insert one row to csv file and save the data into csv file, then load csv file again and insert the same row as
10 # before, the program will raise an error because duplicate key, finally print the new row
11 batting_csvtable.insert({"playerID": "y13957", "teamID": "ML", "yearID": "2018", "stint": "1", "AB": "100"})
12 batting_csvtable.save()
13 batting_csvtable.load()
14 batting_csvtable.insert({"playerID": "y13957", "teamID": "ML", "yearID": "2018", "stint": "1", "AB": "100"})
15 ans = batting_csvtable.find_by_template({"playerID": "y13957"})
16 print(json.dumps(ans, indent=2))
17
```

Run: test x

D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test.py

Duplicate Key

```
{
  "stint": "1",
  "lgID": "0",
  "AB": "0",
  "SF": "0",
  "CS": "0",
  "teamID": "ML",
  "H": "0",
  "SO": "0",
  "yearID": "2018",
  "AB": "0",
  "playerID": "y13957",
  "RBI": "0",
  "SH": "0",
  "SB": "0",
  "BB": "0",
  "IBB": "0",
  "K": "0",
}
```

14:1 CRLF UTF-8 2018/9/23

db_homework [D:\python\db_homework] - ...test.py [db_homework] - PyCharm

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help

db_homework test.py
Project db_homework D:\python\db_homework
  venv library root
  homework_1_1.py
  homework_1_2.py
  test.py
  test_program_1.py
  External Libraries
  Scratches and Consoles

homework_1_1.py test_program_1.py test.py homework_1_2.py
13 # batting_csvtable.load()
14 # batting_csvtable.insert({"playerID": "y13957", "teamID": "ML", "yearID": "2018", "stint": "1", "AB": "100"})
15 # ans = batting_csvtable.find_by_template({"playerID": "y13957"})
16 # print(json.dumps(ans, indent=2))
17
18 # delete the new row and print the row
19 batting_csvtable.delete({"playerID": "y13957", "teamID": "ML", "yearID": "2018", "stint": "1", "AB": "100"})
20 batting_csvtable.save()
21 batting_csvtable.load()
22 ans = batting_csvtable.find_by_template({"playerID": "y13957"})
23 print(json.dumps(ans, indent=2))
24
25
```

Run: test x

D:\python\db_homework\venv\Scripts\python.exe D:\python\db_homework/test.py

Process finished with exit code 0

23:1 CRLF UTF-8 2018/9/23