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**Primary key:**

People: playerId

Managers: playerId, teamID, yearID, inseason

Appearances: yearID, teamID, playerId

Batting: playerId, yearID, teamID, stint

Fielding: playerId, yearID, teamID, stint, POS

Teams: yearID, teamID

**PART 1**

Paths

- Base resource (collection)
  - POST: /api/<resource> creates (inserts) a new sub-resource (row) in the containing resource (table).

Example:

POST: 127.0.0.1:5000/api/people

Result:

```
1 {
2   "playerID": "dff2",
3   "birthCountry": "USA"
4 }
```

Body Cookies Headers (4) Test Results

Pretty Raw Preview

Successfully insert

GET 127.0.0.1:5000/api/people?playerID=dff2&fields=playerID,birthCountry&offset=0&limit=10

<input checked="" type="checkbox"/>	offset	0	
<input checked="" type="checkbox"/>	limit	10	
	Key	Value	Description

Body Cookies Headers (4) Test Results Status: 200 OK Time:

Pretty Raw Preview JSON

```
1 {
2   "data": [
3     {
4       "playerID": "dff2",
5       "birthCountry": "USA"
6     }
7   ],
8   "links": [
9     {
10      "current": "/api/people?playerID=dff2&fields=playerID,birthCountry&offset=0&limit=10"
11    },
12    {
13      "next": "/api/people?playerID=dff2&fields=playerID,birthCountry&offset=10&limit=10"
14    }
15  ]
16 }
```

- GET: /api/<resource>[query\_expression],[&field\_expression]

Example:

GET:127.0.0.1:5000/api/people?nameLast=Williams&nameFirst=Ted&fields=playerID,birthCountry

Result:

```
1 {
2   "data": [
3     {
4       "playerID": "willite01",
5       "birthCountry": "USA"
6     }
7   ],
8   "links": [
9     {
10      "current": "/api/people?nameLast=Williams&nameFirst=Ted&fields=playerID,birthCountry"
11    },
12    {
13      "next": "/api/people?nameLast=Williams&nameFirst=Ted&fields=playerID,birthCountry&offset=10&limit=10"
14    }
15  ]
16 }
```

- Specific resource (collection element)
  - GET: /api/<resource>/<primary\_key>[?fields\_expression] returns the identified resource (row).

Example:

GET: 127.0.0.1:5000/api/people/willite01

Result:

```
7
8     "birthCountry": "USA",
9     "birthState": "CA",
10    "birthCity": "San Diego",
11    "deathYear": "2002",
12    "deathMonth": "7",
13    "deathDay": "5",
14    "deathCountry": "USA",
15    "deathState": "FL",
16    "deathCity": "Inverness",
17    "nameFirst": "Ted",
18    "nameLast": "Williams",
19    "nameGiven": "Theodore Samuel",
20    "weight": "205",
21    "height": "75",
22    "bats": "L",
23    "throws": "R",
24    "debut": "1939-04-20",
25    "finalGame": "1960-09-28",
26    "retroID": "willt103",
27    "bbrefID": "willite01"
28  },
29 ],
30 "links": [
31   {
32     "current": "/api/people/willite01"
33   },
34   {
35     "next": "/api/people/willite01?offset=10&limit=10"
36   }
37 ]
```

- PUT: /api/<resource>/<primary\_key> updates the resource (row).

Example:

The screenshot shows a REST client interface. At the top, the method is set to **PUT** and the URL is `127.0.0.1:5000/api/people/dff2`. Below the URL bar, there are tabs for **Params**, **Authorization**, **Headers (1)**, **Body** (which is selected and highlighted with an orange underline), and **P**. Under the **Body** tab, there are four radio buttons: **form-data**, **x-www-form-urlencoded**, **raw** (which is selected with an orange dot), and **bi**. The body content is a JSON object displayed in a code editor with line numbers 1 through 4. The third line, containing `"birthCountry": "United States"`, is highlighted in blue.

```
1 {  
2   "playerID": "dff2",  
3   "birthCountry": "United States"  
4 }
```

Result:

The screenshot shows the JSON response of the PUT request in a code editor with line numbers 1 through 16. The response is a JSON object with a `"data"` array containing one object and a `"links"` array containing two objects. A search bar is visible on the right side of the code editor.

```
1 {  
2   "data": [  
3     {  
4       "playerID": "dff2",  
5       "birthCountry": "United States"  
6     }  
7   ],  
8   "links": [  
9     {  
10      "current": "/api/people?playerID=dff2&fields=playerID,birthCountry&offset=0&limit=10"  
11    },  
12    {  
13      "next": "/api/people?playerID=dff2&fields=playerID,birthCountry&offset=10&limit=10"  
14    }  
15  ]  
16 }
```

- DELETE: /api/<resource>/<primary\_key> deletes the identified resource.

Example:

DELETE
127.0.0.1:5000/api/people/dff2

Params

Authorization

Headers (1)

Body ●

Pre-requests

KEY	VALUE
Key	Value

Body

Cookies

Headers (4)

Test Results

Pretty

Raw

Preview

JSON

1
null

Result:

```

{
  "data": [
    {
      "playerID": "dff2",
      "yearID": "2018",
      "stint": "1",
      "teamID": "Columbia",
      "lgID": "null_block",
      "G": "null_block",
      "AB": "null_block",
      "R": "null_block",
      "H": "null_block",
      "2B": "null_block",
      "3B": "null_block",
      "HR": "null_block",
      "RBI": "null_block",
      "SB": "null_block",
      "CS": "null_block",
      "BB": "null_block",
      "SO": "null_block",
      "IBB": "null_block",
      "HBP": "null_block",
      "SH": "null_block",
      "SF": "null_block",
      "GIDP": "null_block"
    }
  ],
  "links": [
    {
      "current": "/api/batting?playerID=dff2"
    },
    {
      "next": "/api/batting?playerID=dff2&offset=10&limit=10"
    }
  ]
}

```

- Dependent resource/related resources:

- GET:

/api/<resource>/<primary\_key>/<related\_resource>[query\_expression][fields\_expression] returns the set of resource related to a specific resource by a relationship, and which match a query.

Example:

GET: 127.0.0.1:5000/api/people/willite01/batting

Result:

```
[{"stint": "1",
  "teamID": "BOS",
  "lgID": "AL",
  "G": "148",
  "AB": "531",
  "R": "109",
  "H": "169",
  "2B": "28",
  "3B": "4",
  "HR": "30",
  "RBI": "126",
  "SB": "1",
  "CS": "1",
  "BB": "144",
  "SO": "45",
  "IBB": "",
  "HBP": "0",
  "SH": "0",
  "SF": "",
  "GIDP": "10"
},
{"links": [
  {
    "current": "/api/people/willite01/batting"
  },
  {
    "next": "/api/people/willite01/batting?offset=10&limit=10"
  }
]}]
```

```

    "stint": "1",
    "teamID": "BOS",
    "lgID": "AL",
    "G": "113",
    "AB": "310",
    "R": "56",
    "H": "98",
    "2B": "15",
    "3B": "0",
    "HR": "29",
    "RBI": "72",
    "SB": "1",
    "CS": "1",
    "BB": "75",
    "SO": "41",
    "IBB": "7",
    "HBP": "3",
    "SH": "0",
    "SF": "2",
    "GIDP": "7"
  },
  "links": [
    {
      "current": "/api/people/willite01/batting?offset=10&limit=10"
    },
    {
      "next": "/api/people/willite01/batting?offset=20&limit=10"
    }
  ]
}

```

- POST: /api/<resource>/<primary\_key>/<related\_resource> creates a new related resource.

Example:



127.0.0.1:5000/api/people/dff2/batting

POST 127.0.0.1:5000/api/people/dff2/batting

Params Authorization Headers (1) Body Pre-

form-data x-www-form-urlencoded raw bina

```
1 {
2   "yearID": "2018",
3   "teamID": "Columbia",
4   "stint": "1"
5 }
```

Body Cookies Headers (4) Test Results

Pretty Raw Preview JSON

```
1 null
```

Result:

```
1 {
2   "data": [
3     {
4       "playerID": "dff2",
5       "yearID": "2018",
6       "teamID": "Columbia",
7       "stint": "1"
8     }
9   ],
10  "links": [
11    {
12      "current": "/api/batting?playerID=dff2&fields=playerID,yearID,teamID,stint&offset=0&limit=10"
13    },
14    {
15      "next": "/api/batting?playerID=dff2&fields=playerID,yearID,teamID,stint&offset=10&limit=10"
16    }
17  ]
18 }
```

## Part 2

### Custom Queries

- GET: /api/teammates/<playerid> will return the IDs, names, first year, last year and count of seasons as teammates for every player that was a teammate of playerid on any team in any season. The first few elements in the response to /api/teammates/willite01 would be something like

Example:

GET: 127.0.0.1:5000/api/teammates/willite01

Result:

The screenshot shows a REST client interface with the following components:

- Request Bar:** Method: GET, URL: 127.0.0.1:5000/api/teammates/willite01, Buttons: Send, Save.
- Params Tab:** A table with columns KEY, VALUE, and DESCRIPTION. It contains a single row with 'Key', 'Value', and 'Description'.
- Body Tab:** Status: 200 OK, Time: 46 ms, Size: 1.29 KB, Download button.
- Response Body:** A JSON array of player data. The first few elements are: [{"playerID": "willite01", "ID": "agganha01", "max(b.yearID)": "1955", "min(b.yearID)": "1954", "c": 2}, {"playerID": "willite01", "ID": "andreer01", "max(b.yearID)": "1946", "min(b.yearID)": "1946", "c": 1}, {"playerID": "willite01", "ID": "asproke01", "max(b.yearID)": "1958", "min(b.yearID)": "1957", "c": 2}, {"playerID": "willite01", "ID": "atkinja01", "max(b.yearID)": "1952", "min(b.yearID)": "1950", "c": 2}, {"playerID": "willite01", "ID": "aukerel01", "max(b.yearID)": "1939", "min(b.yearID)": "1939", "c": 1}, {"playerID": "willite01", "ID": "auldsle01", "max(b.yearID)": "1947", "min(b.yearID)": "1947", "c": 1}, {"playerID": "willite01", "ID": "avilabo01", "max(b.yearID)": "1959", "min(b.yearID)": "1959", "c": 1}, {"playerID": "willite01", "ID": "bakerfl01", "max(b.yearID)": "1954", "min(b.yearID)": "1953", "c": 2}, {"playerID": "willite01", "ID": "battma01", "max(b.yearID)": "1951", "min(b.yearID)": "1947", "c": 5}], [{"current": "/api/teammates/willite01", "next": "/api/teammates/willite01?offset=10&limit=10"}].

```

{
  "data": [
    {
      "playerID": "willite01",
      "ID": "agganha01",
      "max(b.yearID)": "1955",
      "min(b.yearID)": "1954",
      "c": 2
    },
    {
      "playerID": "willite01",
      "ID": "andreer01",
      "max(b.yearID)": "1946",
      "min(b.yearID)": "1946",
      "c": 1
    },
    {
      "playerID": "willite01",
      "ID": "asproke01",
      "max(b.yearID)": "1958",
      "min(b.yearID)": "1957",
      "c": 2
    },
    {
      "playerID": "willite01",
      "ID": "atkinja01",
      "max(b.yearID)": "1952",
      "min(b.yearID)": "1950",
      "c": 2
    },
    {
      "playerID": "willite01",
      "ID": "atkinja01",
      "max(b.yearID)": "1952",
      "min(b.yearID)": "1950",
      "c": 2
    }
  ]
}

```

- `/api/people/<playerid>/career_stats` returns a summary of the career stats for a player. An example for Ted Williams might have the following data.

Example:

GET: 127.0.0.1:5000/api/people/willite01/career\_stats

Result:

```
{
  "data": [
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1939",
      "G_all": "149",
      "hits": 185.0,
      "ABs": 565.0,
      "A": "11",
      "E": "19"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1940",
      "G_all": "144",
      "hits": 193.0,
      "ABs": 561.0,
      "A": "13",
      "E": "13"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1940",
      "G_all": "144",
      "hits": 193.0,
      "ABs": 561.0,
      "A": "2",
      "E": "0"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1941",
      "G_all": "143",
      "hits": 185.0,
      "ABs": 456.0,
      "A": "11",
      "E": "11"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1942",
      "G_all": "150",
      "hits": 186.0,
      "ABs": 522.0,
      "A": "15",
      "E": "4"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1946",
      "G_all": "150",
      "hits": 176.0,
      "ABs": 514.0,
      "A": "7",
      "E": "10"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1947",
      "G_all": "156",
      "hits": 181.0,
      "ABs": 528.0,
      "A": "10",
      "E": "9"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1948",
      "G_all": "137",
      "hits": 188.0,
      "ABs": 509.0,
      "A": "9",
      "E": "5"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1949",
      "G_all": "155",
      "hits": 194.0,
      "ABs": 566.0,
      "A": "12",
      "E": "6"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1950",
      "G_all": "89",
      "hits": 106.0,
      "ABs": 334.0,
      "A": "7",
      "E": "8"
    }
  ],
  "links": [
    {
      "current": "/api/people/willite01/career_stats",
      "next": "/api/people/willite01/career_stats?offset=10&limit=10"
    }
  ]
}
```

```

    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1949",
      "G_all": "155",
      "hits": 194,
      "ABs": 566,
      "A": "12",
      "E": "6"
    },
    {
      "playerID": "willite01",
      "teamID": "BOS",
      "yearID": "1950",
      "G_all": "89",
      "hits": 106,
      "ABs": 334,
      "A": "7",
      "E": "8"
    }
  ],
  "links": [
    {
      "current": "/api/people/willite01/career_stats"
    },
    {
      "next": "/api/people/willite01/career_stats?offset=10&limit=10"
    }
  ]
}
```

- GET /api/roster?teamid=<teamid>&yearid=<yearid> returns the roster and stats for a team in a year.

Example:

GET: 127.0.0.1:5000/api/roster?teamid=BOS&yearid=2004

Result:

127.0.0.1:5000/api/roster?teamid=BOS&yearid=2004

GET

127.0.0.1:5000/api/roster?teamid=BOS&yearid=2004

Send

Save

Params

Authorization

Headers (1)

Body

Pre-request Script

Tests

Cookies

Coc

KEY	VALUE	DESCRIPTION
<input checked="" type="checkbox"/> teamid	BOS	
<input checked="" type="checkbox"/> yearid	2004	
Key	Value	Description

Body

Cookies

Headers (4)

Test Results

Status: 200 OK

Time: 491 ms

Size: 1.94 KB

Download

Pretty

Raw

Preview

```
{
  "data": [
    {
      "nameLast": "Adams",
      "nameFirst": "Terry",
      "playerID": "adamste01",
      "teamID": "BOS",
      "yearID": "2004",
      "G_all": "19",
      "hits": "0",
      "ABs": "0",
      "A": "1",
      "E": "1",
      {
        "nameLast": "Alvarez",
        "nameFirst": "Abe",
        "playerID": "alvarab01",
        "teamID": "BOS",
        "yearID": "2004",
        "G_all": "1",
        "hits": "0",
        "ABs": "0",
        "A": "0",
        "E": "0",
        {
          "nameLast": "Anderson",
          "nameFirst": "Jimmy",
          "playerID": "anderji02",
          "teamID": "BOS",
          "yearID": "2004",
          "G_all": "5",
          "hits": "0",
          "ABs": "0",
          "A": "0",
          "E": "0",
          {
            "nameLast": "Arroyo",
            "nameFirst": "Bronson",
            "playerID": "arroybr01",
            "teamID": "BOS",
            "yearID": "2004",
            "G_all": "32",
            "hits": "0",
            "ABs": "6",
            "A": "16",
            "E": "2",
            {
              "nameLast": "Astacio",
              "nameFirst": "Pedro",
              "playerID": "astacpe01",
              "teamID": "BOS",
              "yearID": "2004",
              "G_all": "5",
              "hits": "0",
              "ABs": "0",
              "A": "0",
              "E": "0",
              {
                "nameLast": "Bellhorn",
                "nameFirst": "Mark",
                "playerID": "bellhma01",
                "teamID": "BOS",
                "yearID": "2004",
                "G_all": "138",
                "hits": "138",
                "ABs": "523",
                "A": "349",
                "E": "11",
                {
                  "nameLast": "Brown",
                  "nameFirst": "Jamie",
                  "playerID": "brownja04",
                  "teamID": "BOS",
                  "yearID": "2004",
                  "G_all": "4",
                  "hits": "0",
                  "ABs": "0",
                  "A": "0",
                  "E": "0",
                  {
                    "nameLast": "Cabrera",
                    "nameFirst": "Orlando",
                    "playerID": "cabreor01",
                    "teamID": "BOS",
                    "yearID": "2004",
                    "G_all": "58",
                    "hits": "67",
                    "ABs": "228",
                    "A": "147",
                    "E": "8",
                    {
                      "nameLast": "Castillo",
                      "nameFirst": "Frank",
                      "playerID": "castifr01",
                      "teamID": "BOS",
                      "yearID": "2004",
                      "G_all": "2",
                      "hits": "0",
                      "ABs": "0",
                      "A": "0",
                      "E": "0",
                      {
                        "nameLast": "Crespo",
                        "nameFirst": "Cesar",
                        "playerID": "crespce01",
                        "teamID": "BOS",
                        "yearID": "2004",
                        "G_all": "52",
                        "hits": "13",
                        "ABs": "79",
                        "A": "19",
                        "E": "0",
                      }
                    }
                  }
                }
              }
            }
          }
        }
      }
    }
  ],
  "links": {
    "current": "/api/roster?teamid=BOS&yearid=2004",
    "next": "/api/roster?teamid=BOS&yearid=2004&offset=10&limit=10"
  }
}
```

```

2         "playerID": "castifr01",
3         "teamID": "BOS",
4         "yearID": "2004",
5         "G_all": "2",
6         "hits": "0",
7         "ABs": "0",
8         "A": "0",
9         "E": "0"
10    },
11    {
12        "nameLast": "Crespo",
13        "nameFirst": "Cesar",
14        "playerID": "crespce01",
15        "teamID": "BOS",
16        "yearID": "2004",
17        "G_all": "52",
18        "hits": "13",
19        "ABs": "79",
20        "A": "19",
21        "E": "0"
22    }
23 ],
24 "links": [
25     {
26         "current": "/api/roster?teamid=BOS&yearid=2004"
27     },
28     {
29         "next": "/api/roster?teamid=BOS&yearid=2004&offset=10&limit=10"
30     }
31 ]
32 }

```