Arpan Venugopal, Tanya Tandon

MyPandas

1) readCSV

```
80      //The main function prints everything
81⊖     public static void main(String[] args) throws IOException {
82          String path="Test.csv";
83          //Testing readCSV function //
84          MyDataFrame obj1=readCSV(path);
85          System.out.println(obj1);
```

Console ⊠ Problems Debug Shell

terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (13-De

State ||	Gender ||	Year ||	Name ||	Count	
AK ||	F ||	1910 ||	Mary ||	14	
WE ||	F ||	1910 ||	Annie ||	12	
AS ||	F ||	1910 ||	Anna ||	10	
DF ||	F ||	1910 ||	Margaret ||	8	
SD ||	F ||	1910 ||	Helen ||	7	
AK ||	M ||	2017 ||	Kayson ||	5	
AK ||	M ||	2017 ||	Kenneth ||	5	
AK ||	M ||	2017 ||	Malakai ||	5	

2) concat

```
87          //Testing concat function
88          String path="Test2.csv";
89          MyDataFrame obj1=readCSV(path);
90          MyDataFrame obj2=readCSV(path);
91          MyDataFrame obj3=concat(obj1,obj2);
92          System.out.println(obj3);
```

Console ⊠ Problems Debug Shell

erminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (13-Dec-2018, 2:

State ||	Gender ||	Year ||	Name ||	Count	
AK ||	F ||	1910 ||	Mary ||	14	
WE ||	F ||	1910 ||	Annie ||	12	
AS ||	F ||	1910 ||	Anna ||	10	
DF ||	F ||	1910 ||	Margaret ||	8	
SD ||	F ||	1910 ||	Helen ||	7	
AK ||	F ||	1910 ||	Mary ||	14	
WE ||	F ||	1910 ||	Annie ||	12	
AS ||	F ||	1910 ||	Anna ||	10	
DF ||	F ||	1910 ||	Margaret ||	8	
SD ||	F ||	1910 ||	Helen ||	7	

3) writeCSV


```java
88          String path="Test2.csv";
89          MyDataFrame obj1=readCSV(path);
90          MyDataFrame obj2=readCSV(path);
91          MyDataFrame obj3=concat(obj1,obj2);
92          System.out.println(obj3);
93          writeCSV(obj3,"Output2.csv");
```

Console output:

```
State ||      Gender ||       Year ||       Name ||     Count
   AK ||           F ||       1910 ||       Mary ||        14
   WE ||           F ||       1910 ||      Annie ||        12
   AS ||           F ||       1910 ||       Anna ||        10
   DF ||           F ||       1910 ||   Margaret ||         8
   SD ||           F ||       1910 ||      Helen ||         7
   AK ||           F ||       1910 ||       Mary ||        14
   WE ||           F ||       1910 ||      Annie ||        12
   AS ||           F ||       1910 ||       Anna ||        10
   DF ||           F ||       1910 ||   Margaret ||         8
   SD ||           F ||       1910 ||      Helen ||         7
```

Excel (Output2):

	A	B	C	D	E
1	State	Gender	Year	Name	Count
2	AK	F	1910	Mary	14
3	WE	F	1910	Annie	12
4	AS	F	1910	Anna	10
5	DF	F	1910	Margaret	8
6	SD	F	1910	Helen	7
7	AK	F	1910	Mary	14
8	WE	F	1910	Annie	12
9	AS	F	1910	Anna	10
10	DF	F	1910	Margaret	8
11	SD	F	1910	Helen	7
12					

MyDataFrame

1) Head and Tail


```java
95          MyDataFrame obj2=obj1.head(10);
96          System.out.println("Head Output");
97          System.out.println(obj2);
98          MyDataFrame obj3=obj1.tail(10);
99          System.out.println("Tail output");
100         System.out.println(obj3);
101
```

Console output:

```
        State ||      Gender ||      Year ||       Name ||    Count
           AK ||           F ||      1910 ||       Mary ||       14
           WE ||           F ||      1910 ||      Annie ||       12
           AS ||           F ||      1910 ||       Anna ||       10
           DF ||           F ||      1910 ||   Margaret ||        8
           SD ||           F ||      1910 ||      Helen ||        7
           AK ||           M ||      2017 ||     Kayson ||        5
           AK ||           M ||      2017 ||    Kenneth ||        5
           AK ||           M ||      2017 ||    Malakai ||        5
           AK ||           M ||      2017 ||     Martin ||        5
           AK ||           M ||      2017 ||     Matteo ||        5

Tail output
        State ||      Gender ||      Year ||       Name ||    Count
           AK ||           M ||      2017 ||        Roy ||        5
           AK ||           M ||      2017 ||       Sage ||        5
           AK ||           M ||      2017 ||       Sean ||        5
           AK ||           M ||      2017 ||     Skyler ||        5
           AK ||           M ||      2017 ||    Stanley ||        5
           AK ||           M ||      2017 ||     Tanner ||        5
           AK ||           M ||      2017 ||    Thaddeus ||       5
           AK ||           M ||      2017 ||     Trevor ||        5
           AK ||           M ||      2017 ||       Wade ||        5
           AK ||           M ||      2017 ||   Zachariah ||       5
```
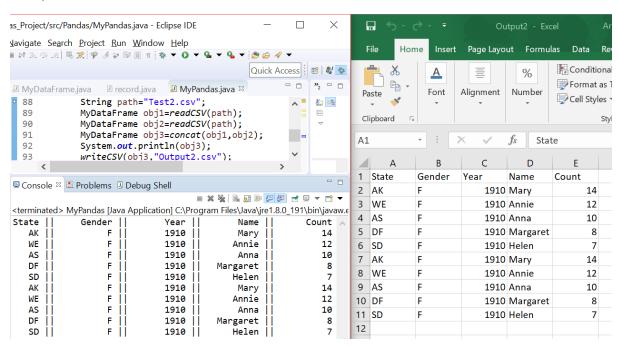
2) Dtype (int index) & dtype(String)

```
103              //dtype(int) function
104              System.out.println(obj1.dType(3));
105              System.out.println(obj1.dType(4));
106
107              //dtype(string) function
108              System.out.println(obj1.dType("State"));
109              System.out.println(obj1.dType("Count"));
```

Console ⊠ Problems Debug Shell

<terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (1

```
Integer
String
String
Integer
```

3) Slice
   a. Slice(int index)

```
111                    //Slicing slice(int index)
112                    MyDataFrame obj4 = obj1.slice(1);
113                    System.out.println(obj4);
```

Console ⊠ Problems Debug Shell

<terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\b

```
|    State |
|      AK  |
|      WE  |
|      AS  |
|      DF  |
|      SD  |
|      AK  |
|      AK  |
|      AK  |
|      AK  |
|      AK  |
|      AK  |
```

   b. Slice(String name)

```
114                    //Slicing slice(String)
115                    MyDataFrame obj5 = obj1.slice("Year");
116                    System.out.println(obj5);
```

Console ⊠ Problems Debug Shell

<terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\java

```
|   Year  |
|   1910  |
|   1910  |
|   1910  |
|   1910  |
|   1910  |
|   2017  |
|   2017  |
|   2017  |
|   2017  |
|   2017  |
|   2017  |
|   2017  |
|   2017  |
```

c. Slice(int[] indexarr)

```java
118                 //Slicing slice(int[] )
119                 int b[]= {2,4};
120                 MyDataFrame obj6 = obj1.slice(b);
121                 System.out.println(obj6);
122
123                         |
```

Console ⊠ Problems Debug Shell
<terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\

```
|   Gender ||        Name |
|        F ||        Mary |
|        F ||       Annie |
|        F ||        Anna |
|        F ||    Margaret |
|        F ||       Helen |
|        M ||      Kayson |
|        M ||     Kenneth |
|        M ||     Malakai |
|        M ||      Martin |
```

d. Slice(String[] indexarr)

```java
123                 //Slicing slice(String[] )
124                 String c[]= {"Year","Count"};
125                 MyDataFrame obj7 = obj1.slice(c);
126                 System.out.println(obj7);
127
```

Console ⊠ Problems Debug Shell
<terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\

```
|   Year ||    Count |
|   1910 ||       14 |
|   1910 ||       12 |
|   1910 ||       10 |
|   1910 ||        8 |
|   1910 ||        7 |
|   2017 ||        5 |
|   2017 ||        5 |
|   2017 ||        5 |
|   2017 ||        5 |
|   2017 ||        5 |
|   2017 ||        5 |
|   2017 ||        5 |
|   2017 ||        5 |
|   2017 ||        5 |
```

4) Filtering

```java
128                 //Filtering
129                 MyDataFrame obj8 = obj1.filter("Count",">=",10);
130                 System.out.println(obj8);
```

Console ⊠ Problems Debug Shell
terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (13-Dec-201

```
|   State ||   Gender ||     Year ||     Name ||    Count |
|      AK ||        F ||     1910 ||     Mary ||       14 |
|      WE ||        F ||     1910 ||    Annie ||       12 |
|      AS ||        F ||     1910 ||     Anna ||       10 |
```

5) Indexing

a. Loc(int n)

```java
132                 //loc(int n)
133                 MyDataFrame obj9 = obj1.loc(15);
134                 System.out.println(obj9);
135
```

Console ⊠ Problems Debug Shell
terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (13-Dec-

```
|   State ||   Gender ||     Year ||       Name ||    Count |
|      AK ||        M ||     2017 ||    Preston ||        5 |
|      AK ||        M ||     2017 ||      Riley ||        5 |
|      AK ||        M ||     2017 ||      Robin ||        5 |
|      AK ||        M ||     2017 ||        Roy ||        5 |
|      AK ||        M ||     2017 ||       Sage ||        5 |
|      AK ||        M ||     2017 ||       Sean ||        5 |
|      AK ||        M ||     2017 ||     Skyler ||        5 |
|      AK ||        M ||     2017 ||    Stanley ||        5 |
|      AK ||        M ||     2017 ||     Tanner ||        5 |
|      AK ||        M ||     2017 ||   Thaddeus ||        5 |
|      AK ||        M ||     2017 ||     Trevor ||        5 |
|      AK ||        M ||     2017 ||       Wade ||        5 |
|      AK ||        M ||     2017 ||  Zachariah ||        5 |
```

b. Loc(int a,int b)

```
135
136                    //loc(int a,int b)
137                    MyDataFrame obj10 = obj1.loc(15,20);
138                    System.out.println(obj10);
```

State ||	Gender ||	Year ||	Name ||	Count	
AK ||	M ||	2017 ||	Preston ||	5	
AK ||	M ||	2017 ||	Riley ||	5	
AK ||	M ||	2017 ||	Robin ||	5	
AK ||	M ||	2017 ||	Roy ||	5	
AK ||	M ||	2017 ||	Sage ||	5	
AK ||	M ||	2017 ||	Sean ||	5	

6) Sorting

a. Sort(int index)

```
140                    //Sort(int n)
141                    MyDataFrame obj11=obj1.sort(1);
142                    System.out.println(obj11);
```

State ||	Gender ||	Year ||	Name ||	Count	
AK ||	F ||	1910 ||	Mary ||	14	
AK ||	M ||	2017 ||	Kayson ||	5	
AK ||	M ||	2017 ||	Kenneth ||	5	
AK ||	M ||	2017 ||	Malakai ||	5	
AK ||	M ||	2017 ||	Martin ||	5	
AK ||	M ||	2017 ||	Matteo ||	5	
AK ||	M ||	2017 ||	Milo ||	5	
AK ||	M ||	2017 ||	Nico ||	5	
AK ||	M ||	2017 ||	Oscar ||	5	
AK ||	M ||	2017 ||	Otto ||	5	

b. Sort(String name)

```
14                    //Sort(String name)
15                    MyDataFrame obj12=obj1.sort("Name");
16                    System.out.println(obj12);
17
```

State ||	Gender ||	Year ||	Name ||	Count	
AS ||	F ||	1910 ||	Anna ||	10	
WE ||	F ||	1910 ||	Annie ||	12	
SD ||	F ||	1910 ||	Helen ||	7	
AK ||	M ||	2017 ||	Kayson ||	5	
AK ||	M ||	2017 ||	Kenneth ||	5	
AK ||	M ||	2017 ||	Malakai ||	5	
DF ||	F ||	1910 ||	Margaret ||	8	
AK ||	M ||	2017 ||	Martin ||	5	
AK ||	F ||	1910 ||	Mary ||	14	
AK ||	M ||	2017 ||	Matteo ||	5	
AK ||	M ||	2017 ||	Milo ||	5	

7) Aggregation (getMin(int index) getMin(String name) getMax(int index) getMax(Strig name)

```
148                    //Aggregation
149         System.out.println(obj1.getMin(5));
150         System.out.println(obj1.getMin("State"));
151         System.out.println(obj1.getMax(3));
152         System.out.println(obj1.getMax("Count"));
153
```

Console ⊠ Problems Debug Shell

<terminated> MyPandas [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (13-

```
5
AK
2017
14
```