

CSE 1010 Ideas and Impact of Computing
Homework 4
Due 11am, Fri, Oct 31, 2014
Submit Server: Class = cse1010 ; Assignment = hw4

Template java file: cs.fit.edu/~pkc/classes/cse1010/HW4.java
Data file: cs.fit.edu/~pkc/classes/cse1010/movieRatings.txt

To explore how to recommend products in a personalized marketing effort, this assignment attempts to predict how customers would rate movies that they have not watched/rated.

Near the top of HW4.java, implement the two methods:

- `distance`, which calculates the distance between two customers and
- `nearestNeighbor`, which finds the most similar customer with respect to another customer

Detailed description of the methods and their parameters are in HW4.java. Movies are rated 1 to 5; 0 means not rated. A sample dialog with the data file:

Reading in data...

```
Movie 0 1 2 3 4 5 6 7 8 9
Alan 4 5 4 5 5 4 2 5 4 3
Bill 5 3 4 4 3 4 2 1 5 2
Charlie 4 3 3 5 5 3 5 3 0 4
David 4 3 2 3 4 3 0 4 5 4
Earl 1 5 5 5 5 5 5 4 4 5
Frank 4 2 3 4 2 3 2 4 3 3
Grace 5 5 5 5 5 5 5 3 5 5
Harry 4 0 4 4 4 3 3 0 2 3
Irene 4 5 5 5 5 4 5 5 5 5
Jack 5 3 4 3 4 3 3 5 0 2
Ken 2 3 3 5 5 5 4 5 5 5
Paul 5 2 2 3 3 3 2 4 4 3
Rose 5 0 0 0 4 4 5 5 4 5
Saul 5 3 3 3 4 4 3 4 3 5
```

```
Type the customer name: Rose
Type the movie number (0-9): 8
```

Thinking...

```
Alan: 12
Bill: 13
David: 7
Earl: 13
Frank: 12
Grace: 10
Harry: 10
Irene: 8
Ken: 8
Paul: 10
Saul: 3
Nearest Neighbor is Saul
```

```
Predicted rating = 3
Real rating = 4
Error (predicted - real) = -1
```