Okay, so now we are going to see how it is possible to build a URM.

There are different ways to estimate the opinion of a user for an item, without asking for an opinion explicitly.

The implicit opinions collected in this way are called Implicit Ratings.

It may be, for instance the total viewing time of a movie, the number of times  a user has listened to a song, or the fact that a user has made a purchase.

In the case of movies, we can assume that if a user has stopped watching

While instead, if the viewing time corresponds more or less to the length of the movie, probably the user has enjoyed it.

Of course, as you may have notice, this is not an absolute criterion.

The system does not know the user has received an important call, and had to stop watching the movie as a counterexample.

Another way to understand user preferences is, of course asking him or her explicitly to grade the item.

The real point here is to decide how to organize the rating scale.

We may want to use large rating scales to have many possible grades that reflect the opinion of the user precisely.

On the other hand, we have to be aware of the fact that it requires more effort by the user to choose the correct rating on a large rating scale, and therefore we have to expect fewer ratings.

Another option is to up for a simpler, smaller users scale.

In this case, we will receive on average more ratings than before.

Another important decision, is whether we prefer even or odd rating scales.

An even rating scale implies the absence of a neutral element, the one in the middle, you can receive only positive or negative ratings.

The user is in a way forced to express an opinion, and that again will eventually result in fewer ratings.

If we instead opt for an odd rating scale, we have to be aware that the system will receive ratings that are neutral.

The idea is that the possibility of giving a neutral rating will make users more comfortable, and therefore more ratings will be given.

Unfortunately, it's a trend that users prefer giving the neutral rating. So in a way, the system receives more ratings, but a lot of them are useless because they do not express a real opinion.

Users in general tend to publish their rating, only if they had a positive experience.

This evidently creates a bias that effects the rating distribution.