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(54) **RATING-BASED SORTING AND DISPLAYING OF REVIEWS**

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(52) **U.S. Cl.** **705/306**; 705/7; 705/14.36; 705/14.66; 707/749; 707/752; 707/758; 709/203; 709/218; 709/250

(58) **Field of Classification Search** 705/10, 705/14, 1.1, 306, 14.36, 14.66; 707/749, 707/752, 758; 709/203, 218, 250
See application file for complete search history.

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(57)　　　**ABSTRACT**

A computer system receives customer reviews for a subject, for example, a product, service, or market participant. Each review includes a rating of the subject and a comment about the subject. The rating may be favorable, unfavorable, or intermediate. The system sorts the reviews in a default order, for example, chronologically, and displays the reviews in the default order on a first webpage. The first webpage includes an input for requesting a non-default order of the reviews, for example, in accordance with the ratings of the reviews. The system sorts the reviews in the non-default order, and, when a user activates the input to request the reviews in the non-default order, displays a second webpage with the reviews in the non-default order. The non-default order may require all reviews with less than favorable ratings to be placed ahead of all reviews with favorable ratings. The system may be Internet-based.
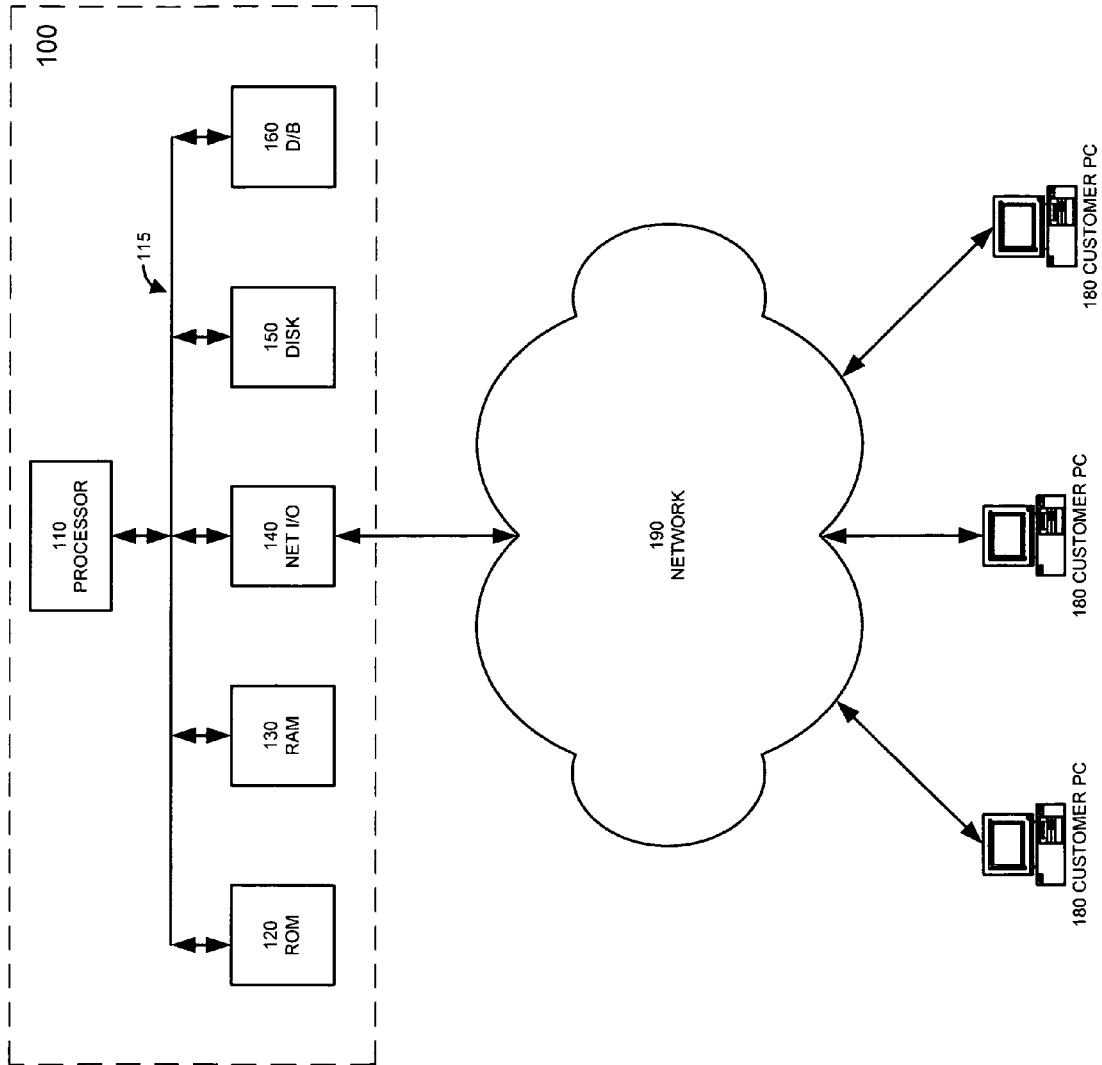
17 Claims, 6 Drawing Sheets
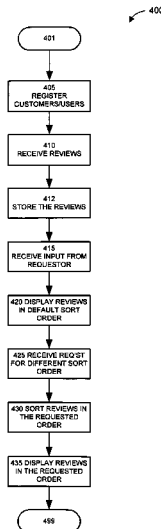
FIG. 1

!Auction Marketplace!

Member Profile: ReliableSeller   3456   ☆   *Authoritative Participant* — 206

— 202   — 204   — 208

Participant Since: February 29, 2000 — 210
Operating From: Kalamazoo, Michigan, U.S.A.

- View Feedback
- Go to Store
- Include in My Market Participants
- Now Selling

	All Ratings	Last 30 Days	Last 90 Days	Last 180 Days	Last Year
Ratings Received:	34561	2321	6008	9388	17657
Feedback Grade:	33631				
Favorable Rating Ratio:	98.3%	99.4%	98.5%	98.3%	97.9%
Favorable Ratings Left:	33986	2307	5917	9233	17283
Unfavorable Ratings Left:	355	11	51	99	244
Intermediate Ratings Left:	220	3	40	56	130

— 212
Current Sort: Date (Latest to Oldest)

(250 — Sort By Rating: Fav-to-UnFav)

(255 — Sort By Rating: UnFav-to-Fav)

— 230

234   235

— 231   — 232

Rating	Comment	From		Date of Comment	Item
+	++++++	Purchaser	EZGoing1965	September 26, 2006	A123098
+	Good Transaction, Highly Recommended	Purchaser	MarciDarci	September 26, 2006	F129007
+	Excellent!!!!!!	Purchaser	MentzaMan	September 26, 2006	J189009
+	OK	Purchaser	ZigiZaggy	September 26, 2006	A230006
+	Great seller, good communication	Purchaser	BonkyBoy	September 26, 2006	B597832
+	Terrific product.	Purchaser	SmileyWiley	September 26, 2006	G980656
+	Fast shipping!	Purchaser	RetroGrade	September 25, 2006	F704356
+	Would deal with again	Purchaser	HoweyO'Roark	September 25, 2006	I165892
+	excellent	Purchaser	GailWyning	September 25, 2006	U462793
+	Good Transaction, Highly Recommended	Purchaser	MarciDarci	September 25, 2006	F129007
+	Acceptable	Purchaser	Growzer	September 25, 2006	A123098
+	e!!@#$	Purchaser	MrTwister	September 25, 2006	F129007
+	Excellent!!!!!!	Purchaser	MentzaMan	September 25, 2006	J189009
+	OK	Purchaser	DomFrancon	September 25, 2006	A230006
+	Super Duper	Purchaser	KeatingPete	September 25, 2006	B597832
+	Very good	Purchaser	AndyKrinolog	September 25, 2006	G980656
-	part missing, not responsive to email	Purchaser	tinyshorty	September 25, 2006	F704356
+	Pleasure to buy from	Purchaser	EllieToohey	September 24, 2006	I165892
+	fits nicely	Purchaser	FreeRadical	September 24, 2006	U462793
+	thanks a lot!	Purchaser	AlyssaRosen	September 24, 2006	F129007

— 233

— 260

Page 1 of 1729   ← Previous 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 Next →

FIG. 2A

!Auction Marketplace!

Member Profile: ReliableSeller   3456   ☆   *Authoritative Participant*

Participant Since: February 29, 2000

Operating From: Kalamazoo, Michigan, U.S.A.

	All Ratings	Last 30 Days	Last 90 Days	Last 180 Days	Last Year
Ratings Received:	34561	2321	6008	9388	17657
Feedback Grade:	33631				
Favorable Rating Ratio:	98.3%	99.4%	98.5%	98.3%	97.9%
Favorable Ratings Left:	33986	2307	5917	9233	17283
Unfavorable Ratings Left:	355	11	51	99	244
Intermediate Ratings Left:	220	3	40	56	130

- ◦ View Feedback
- ◦ Go to Store
- ◦ Include in My Market Participants
- ◦ Now Selling

Current Sort: Date (Latest to Oldest)   (250   Sort By Rating: Fav-to-UnFav)   (255   Sort By Rating: UnFav-to-Fav)

Rating	Comment	From		Date of Comment	Item
-	part missing, not responsive to email	Purchaser	tinyshorty	September 25, 2006	F704356
-	cheater, avoid, has not shipped as promised	Purchaser	RalphEubanknote	September 21, 2006	H008970
-	not responsive at all	Purchaser	RearndMental	September 15, 2006	I897000
-	@#$%head, I want a refund	Purchaser	YNot65	September 14, 2006	B989776
-	false advertising	Purchaser	eBoyInAction	September 12, 2006	H098070
-	item never received.	Purchaser	JohnnyDeGault	September 9, 2006	G888659
-	open dispute, real bad	Purchaser	MidasHulligan	September 3, 2006	V998007
-	lost my money	Purchaser	AnnTalpy	September 3, 2006	I430220
-	avoid avoid avoid	Purchaser	BerthaMaria	September 1, 2006	J980061
-	Fraudulent business	Purchaser	BenderBey	August 30, 2006	F113211
-	did not pay within time allowed	Seller	SmoothOperator	August 24, 2006	A766590
-	what a waste of time and money!	Purchaser	KlausTrofobic	August 21, 2006	E488774
-	tried to upsell	Purchaser	KomikAhdzi	August 15, 2006	Q301891
-	good merchandise, manners need improvement	Purchaser	MiniStrel	August 10, 2006	Z556120
-	slow shipping	Purchaser	HawkingEye	August 4, 2006	F876008
-	needed it for company party; did not receive in time	Purchaser	TheGoldenOne	August 1, 2006	Q970542
-	read the small print before bidding	Purchaser	EqualityOrFreedom	August 1, 2006	R557188
-	)(*&^%$#! and then some	Purchaser	ChooseOne	July 25, 2006	C991044
-	I think he sold my email address to a spammer	Purchaser	OrTheOther	July 15, 2006	W776001
-	don't shop with this one	Purchaser	MelKontent	July 10, 2006	A123098

Page 1 of 1729   ← Previous 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 Next →

FIG. 2B

Books 'N Stuff

WonderCam **Opti101**

Availability: In stock, ready for delivery

Picture

Price: $188.00 **Buy**

Technical description:

- 6.2-megapixel sensor captures enough detail for quality 12 x 17-inch prints

- 4.5x optical zoom; 2.7-inch LCD display

- Capture QuickTime movies (640 x 480) at 60 frames per second; built-in editing functions

- High-performance 0.3-second start-up and 0.1-second shutter lag

- Powered by Lithium-ion battery (battery and charger included); stores images on XSD memory cards

REVIEWS:

☆☆☆ ☆☆   Terrific Camera!   Reviewed by Glen Grant   Review Posted: Sep 26, 2006

I researched several cameras for my trip to Bora Bora. It came down to this one and DCF 1200, since I have been a big fan of WonderCam and previously owned two other cameras. Although packed with features, the price tag of DCF was too much. If you are like me, they look pretty much the same. However, let me point out several differences between the two cameras.

1) The Opti101 is the newest camera from WonderCam,

2) The Opti101 has 2.7" LCD screen, while the DCF has a 2.5" screen.

3) Both cameras have movie modes. But, the new Opti101 can record at 60fps!! That's great for those videos we all take on vacation. The max on the DCF is 30fps.

4) Then there is the built-in flash, additional user options, included 8 Gig XSD card, and lots of other stuff. There is simply no comparison.

☆☆☆ ☆☆   Love it   Reviewed by LeeAnn Ngu   Review Posted: Sep 18, 2006

I got this camera for my birthday 2 days ago, and just LUV it! Get one yourself.

☆☆☆☆   Small, lots of features   Reviewed by Kari Yambin   Review Posted: Sep 17, 2006

All I can say is WOW! More than meets my expectations. Why just four stars then? The ON/OFF switch is placed very awkwardly, so sometimes I turn the camera on or off when I don't mean to.

☆☆☆ ☆☆   What a deal!   Reviewed by Abe Timistic   Review Posted: Sep 16, 2006

There is no other camera with all those features for the price. And you get it from WonderCam, a company known for its wonderful (pun intended) customer service. I highly recommend it.

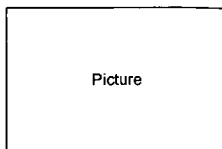| 340 Show More Reviews – Current Sort | 350 Sort By Star Number -- Highest First | 360 Sort By Star Number -- Lowest First) |

FIG. 3A

Books 'N Stuff

WonderCam Opti101

Availability: In stock, ready for delivery

Picture

Price: $188.00 Buy

Technical description:

- 6.2-megapixel sensor captures enough detail for quality 12 x 17-inch prints

- 4.5x optical zoom; 2.7-inch LCD display

- Capture QuickTime movies (640 x 480) at 60 frames per second; built-in editing functions

- High-performance 0.3-second start-up and 0.1-second shutter lag

- Powered by Lithium-ion battery (battery and charger included); stores images on XSD memory cards

REVIEWS:

☆   Look elsewhere   Reviewed by Ann Happy   Review Posted: Sep 15, 2006

What's most important about electronics? That it work, of course. This one was dead out of the box. They exchanged it, but the new one died 6 weeks later, just outside of the free exchange period. So now I am stuck waiting for the warranty repair. I am not a happy camper.

☆   No image stabilizer   Reviewed by Rick Libin   Review Posted: Aug 1, 2006

A camera in this class should have image stabilization. This one does not. So, even with the modest optical zoom range provided, it's hard to take a decent picture at the top of the range. I returned mine.

☆   Not waterproof, not water resistant   Reviewed by Red Hatter   Review Posted: June 21, 2006

I took it to the pool and it got splashed with just the tiniest drop of water. It's dead now, and they won't replace it or fix it.

☆   Spend a little more on a real camera   Reviewed by Ted Fontana   Review Posted: May 16, 2006

I know this is no dSLR, but still, look at that shutter lag. I am not just talking about sports event photography, but every day picture taking. My niece was getting a new patch at the cub scout meeting, and I missed it because of the #$%%^ shutter lag. Do yourself a favor and get a real camera!

☆   Too big   Reviewed by C. Potamkin   Review Posted: May 1, 2006

You better have big pockets if you intend to carry this cam in them. Isn't it supposed to be portable?

☆☆   Proprietary batter with horrible capacity   Reviewed by Earl Adopter   Review Posted: March 20, 2006

Being the first one to review it, the only bad thing about the camera is that it uses a proprietary battery and the capacity of the battery is just horrible. 122 pics is all it was good for on the first charge.

| 340 Show More Reviews – Current Sort | 350 Sort By Star Number -- Highest First | 360 Sort By Star Number -- Lowest First) |

FIG. 3B

400

401

405
REGISTER
CUSTOMERS/USERS

410
RECEIVE REVIEWS

412
STORE THE REVIEWS

415
RECEIVE INPUT FROM
REQUESTOR

420 DISPLAY REVIEWS
IN DEFAULT SORT
ORDER

425 RECEIVE REQ'ST
FOR DIFFERENT SORT
ORDER

430 SORT REVIEWS IN
THE REQUESTED
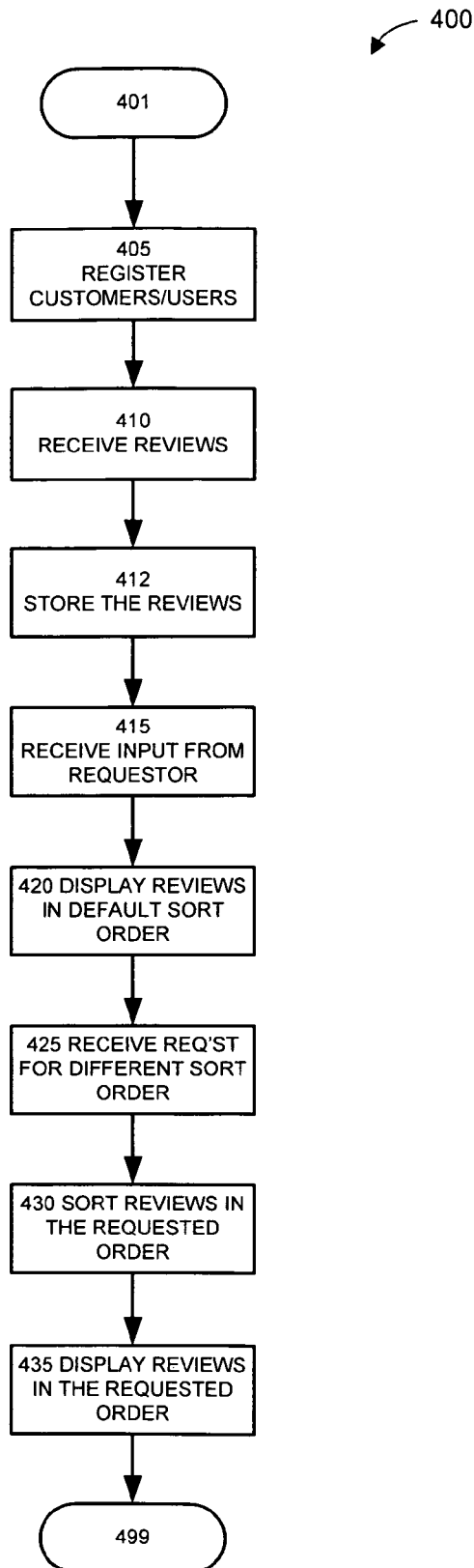ORDER

435 DISPLAY REVIEWS
IN THE REQUESTED
ORDER

499

FIG. 4

RATING-BASED SORTING AND DISPLAYING OF REVIEWS

FIELD OF THE INVENTION

The present invention relates generally to apparatus, methods, and articles of manufacture for providing, searching through, and sorting of customer review information.

BACKGROUND

Many on-line businesses have thrived providing services and products, and facilitating customer decision-making by enabling customers and even non-customers to publish their opinions about products, services, suppliers of products and services, and purchasers of products and services. Amazon.com is one well-known example of a company using this business model. Amazon enables the users of its web portal to publish product reviews and product ratings. Another well-known example of review- and rating-based business model is eBay.com. This company enables an on-line marketplace where participants—both buyers and sellers—can rate each other based on the transactions conducted in that marketplace. Similarly, Nextag.com enables the users of its website to leave reviews and ratings for both sellers and products. Other examples of such services abound.

A large number of bad or even neutral ratings can be a kiss of death for a market participant, product, or service. On eBay, for example, buyers and sellers tend to shun those participants who have accumulated more than a small percentage of ratings that are less than "positive." It follows that even marginal participants have mostly good ratings. At the same time, it is practically impossible to maintain an unblemished record after having participated in a reasonable number of transactions: mistakes, disagreements, misunderstandings, and frustrated expectations all take place on occasion.

For many market participants, products, and services, large numbers of reviews and ratings are available. Indeed, for quite a few market participant, products, and services, ratings and reviews number in the thousands and even in the tens of thousands. Again, such reviews are likely to be overwhelmingly positive. When a consumer attempts to evaluate the reputation of a market participant based on the ratings and reviews, the consumer may need to sift through a large number of reviews to get to the negative review or reviews. This problem arises because the reviews are listed chronologically. The consumer may need to view page after page of positive ratings and reviews before finding a few negative or neutral ratings and reviews. Yet it is the negative (or less than positive) ratings that are likely to be most significant for evaluating trustworthiness. A similar problem exists when searching through certain product and service reviews and ratings.

It is desirable to improve ratings-based feedback sorting and display for online transactions.

SUMMARY

A need thus exists to facilitate the process of searching, sorting, and displaying on-line reviews based on feedback ratings. A need also exists for apparatus for facilitating on-line searching, sorting, and displaying of reviews based on feedback ratings. A need also exists for memories storing program code embodying steps for searching, sorting, and displaying on-line reviews based on feedback ratings.

Embodiments of the present invention are directed to methods, apparatus, and articles of manufacture that may satisfy one or more of these needs. In some embodiments, the inven-

tion herein disclosed is a computer-implemented method. In accordance with the method, a computer system, such as an Internet portal, receives from a plurality of customers reviews for a plurality of subjects, each subject of the plurality of subjects being selected from a group consisting of a product, a service, and a market participant, the plurality of subjects including a first subject. The customer reviews include a first plurality of reviews for the first subject. Each review of the first plurality of reviews includes a rating of the first subject and a comment associated with the first subject. The rating and comment may be submitted following the same transaction. The first plurality of reviews is sorted in a default order to obtain a default ordered first plurality of reviews. At least a first subset of the default ordered first plurality of reviews is displayed on a first display page. The first display page includes a first input for requesting a first non-default ordered display of the first plurality of reviews in accordance with a first non-default order, which is different from the default order. The first subset includes a plurality of contiguous reviews, for example, the top-ordered reviews that can fit on the first page. The system receives from a customer through the first input a first request for the first non-default ordered display of the first plurality of reviews, sorts the first plurality of reviews in the first non-default order to obtain a first non-default ordered first plurality of reviews, and, in response to the first request, displays on a second display page at least a second subset of the first non-default ordered first plurality of reviews, the second subset including a plurality of contiguous reviews. For example, the second subset includes top-ordered reviews that can fit on the second page.

In aspects of the invention, the default order is chronological beginning with the latest review, and the first non-default order is rating-based with a review having a most favored rating being ordered ahead of a review having a least favored rating.

In aspects of the invention, the default order is chronological beginning with the latest review, and the first non-default order is rating-based with a review having a least favored rating being ordered ahead of a review having a most favored rating.

In aspects of the invention, the first display page further includes a second input for requesting a second non-default ordered display of the first plurality of reviews in accordance with a second non-default order, the second non-default order being different from the default order and from the first non-default order.

In aspects of the invention, each rating in the first plurality of reviews is selected from a group consisting of a favorable rating selection and an unfavorable rating selection.

In aspects of the invention, each rating in the first plurality of reviews is selected from a group consisting of a first rating selection, a second rating selection, and a third rating selection. The first non-default order may be such that each review of the first plurality of reviews that has a first rating selection or a second rating selection is placed ahead of each review of the first plurality of reviews that has a third rating selection, and the reviews of the first plurality of reviews that have first or second rating selections are ordered chronologically.

In aspects of the invention, the second display page further includes a third input for requesting a second non-default ordered display of the first plurality of reviews in accordance with a second non-default order. The second non-default order is different from the default order and from the first non-default order. The method further includes, after the step of displaying the second display page, receiving through the third input a second request for the second non-default ordered display of the first plurality of reviews, sorting the

first plurality of reviews in the second non-default order of the first plurality of reviews to obtain a second non-default ordered first plurality of reviews, and, in response to the second request, displaying at least a third subset of the second non-default ordered first plurality of reviews on a third display page, the third subset including a plurality of contiguous reviews.

In aspects of the invention, each rating in the first plurality of reviews is selected from a group that includes a mutually withdrawn rating selection. Mutually withdrawn reviews (i.e., reviews corresponding to the mutually withdrawn rating selection) result from agreement of two customers to withdraw their respective reviews of each other submitted after a transaction involving the two customers.

In some embodiments, a computer-implemented method of displaying data includes receiving a plurality of reviews relating to a subject, each review of the plurality of reviews comprising a user rating of the subject and a user comment associated with the subject, displaying the first plurality of reviews in a default order, and displaying the plurality of reviews in a non-default order in response to a customer request, the non-default order being different from the default order, the non-default order being based on the user ratings in the reviews. The non-default order may be such that reviews with unfavorable ratings are displayed before reviews with favorable ratings.

In aspects of the invention, one or more memory devices store computer code, wherein the code, when executed by at least one processor coupled to the Internet, configures the processor to perform the steps of any method described throughout this document.

In aspects of the invention, a computer system includes a memory device storing computer code, at least one processor coupled to the memory device so as to execute the computer code, and a network interface coupling the at least one processor to the Internet. The computer code, when executed by the at least one processor, configures the at least one processor to perform the steps of any method described throughout this document.

These and other features and aspects of the present invention will be better understood with reference to the following description, drawings, and appended claims.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 illustrates selected components of a computer-based system configured to perform steps of methods for rating-based sorting and displaying of reviews, in accordance with selected embodiments of the present invention;

FIG. 2A illustrates an exemplary display of a page of a profile of a market participant, in accordance with selected embodiments of the present invention;

FIG. 2B illustrates an exemplary display of a page with the profile of the market participant with a non-default order of ratings, beginning with the least favorable ratings, in accordance with selected embodiments of the present invention;

FIG. 3A illustrates an exemplary display of a page with user ratings and comments relating to a product, in accordance with selected embodiments of the present invention;

FIG. 3B illustrates an exemplary display of a page with the user ratings and comments relating to the product reordered in a non-default order, beginning with the least favorable ratings, in accordance with selected embodiments of the present invention; and

FIG. 4 illustrates selected steps of a process for rating-based sorting and displaying of reviews, in accordance with selected embodiments of the present invention.

DETAILED DESCRIPTION

In this document, the words "embodiment" and "variant" refer to particular apparatus, process, or article of manufacture, and not necessarily to the same apparatus, process, or article of manufacture. Thus, "one embodiment" (or a similar expression) used in one place or context can refer to a particular apparatus, process, or article of manufacture; the same or a similar expression in a different place can refer to a different apparatus, process, or article of manufacture. The expression "alternative embodiment" and similar expressions and phrases are used to indicate one of a number of different possible embodiments. The number of possible embodiments is not necessarily limited to two or any other quantity. Characterization of an item as "exemplary" means that the item is used as an example. Such characterization of an embodiment does not necessarily mean that the embodiment is a preferred embodiment; the embodiment may but need not be a currently preferred embodiment. All embodiments are described for illustration purposes and are not strictly limiting.

The words "couple," "connect," and similar expressions with their inflectional morphemes do not necessarily import an immediate or direct connection, but include connections through mediate elements within their meaning.

Contiguous reviews of a subset of reviews means a plurality of reviews that are contiguous within the ordered plurality of reviews from which the subset is drawn. In other words, it means a continuous block of reviews drawn from the ordered set of reviews without changing the order of the reviews.

Causing to be displayed means taking action that results in displaying. For example, a server computer may cause a web page to be displayed by making the web page available for access by a client computer over a network, such as the Internet, which web page the client computer then displays to a user.

Other and further definitions and clarifications of definitions may be found throughout this document.

Reference will now be made in detail to several embodiments of the invention that are illustrated in the accompanying drawings. Same reference numerals are used in the drawings and the description to refer to the same apparatus elements and method steps. The drawings are in simplified form, not to scale, and omit apparatus elements and method steps that can be added to the described systems and methods, while possibly including certain optional elements and steps.

FIG. 1 is a simplified block diagram representation of a computer-based system 100 configured in accordance with selected aspects of the present invention. As shown in FIG. 1, the system 100 is coupled to customer computers 180 via a communication network 190. FIG. 1 does not show many hardware and software modules of the system 100, and omits several physical and logical connections. The system 100 may be implemented as a special purpose data processor, a general-purpose computer, a computer system, or a group of networked computers or computer systems configured to perform the steps of the methods described below. In some embodiments, the system 100 is built on a personal computer platform, such as a Wintel PC or a Mac computer. The personal computer may be a desktop or a notebook computer. The system 100 may function as a server computer. In some embodiments, the system 100 is implemented as a plurality of computers interconnected by a network, such as the network 190.

The system 100 includes a processor 110, read only memory (ROM) module 120, random access memory (RAM) module 130, network interface 140, a mass storage device 150, and a database 160. These components are coupled

together by a bus **115**. In the illustrated embodiment, the processor **110** is a microprocessor, and the mass storage device **150** is a magnetic disk drive. The mass storage device **150** and each of the memory modules **120** and **130** are connected to the processor **110** to allow the processor **110** to write data into and read data from these storage and memory devices. The network interface **140** couples the processor **110** to the network **190**, for example, the Internet. The nature of the network **190** and of the devices that may be interposed between the system **100** and the network **190** determine the kind of network interface **140** used in the system **100**. In some embodiments, for example, the network interface **140** is an Ethernet interface that connects the system **100** to a local area network, which, in turn, connects to the Internet.

The database **160** is used for organizing and storing data that may be needed or desired in performing the method steps described in this document. The database **160** may be a physically separate system coupled to the processor **110**, as illustrated in FIG. **1**. In one alternative embodiment, the processor **110** and the mass storage device **150** are configured to perform the functions of the database **160**.

The processor **110** reads and executes program code instructions stored in the ROM module **120** and/or the storage device **150**. Under control of the program code, the processor **110** configures the system **100** to perform the steps of the methods described throughout this document. In addition to the ROM module **120** and the storage device **150**, the program code instructions may be embodied in other machine-readable storage media, such as additional hard drives, floppy diskettes, CD-ROMs, DVDs, Flash memories, and similar devices. The program code can also be transmitted over a transmission medium, for example, over electrical wiring or cabling, through optical fiber, wirelessly, or by any other form of physical transmission. The transmission can take place over a dedicated link between telecommunication devices, or through a wide- or local-area network, such as the Internet, an intranet, extranet, or any other kind of public or private network. In one embodiment, the program code is downloaded to the system **100** through the network interface **140**.

In a variant of the illustrated embodiment, the system **100** functions as an auction server that enables users at the customer computers **180** to list items (products and/or services) for bidding, to place bids on the listed items, complete sales and purchases of the items, and provide reviews (including ratings and comments) regarding the items and other customers. Those skilled in the art are surely familiar with eBay.com auction website that performs such functions. In another variant of the illustrated embodiment, the system **100** functions as a server implementing an online store for selling items directly and acting as a sales intermediary for other stores. Those skilled in the art should be familiar with the Amazon.com website that performs such functions. In yet another variant of the illustrated embodiment, the system **100** acts as an information provider regarding products, services, and electronic commerce companies. Those skilled in the art are likely familiar with NexTag.com and CNET.com websites that perform such functions.

In an auction variant, the system **100** allows each user to provide ratings related to other auction participants with whom the user was involved in a transaction. The user can rate another participant favorably, unfavorably, or neutrally. Furthermore, mutually withdrawn ratings may be considered as a separate rating category, regardless of the original rating provided prior to withdrawal of the rating/review. Once again, those skilled in the art are familiar with the implementation of ratings by eBay.com. It should be noted, however, that the system **100** may enable the user to select from fewer or greater

than three ratings. For example, the system **100** may enable the user to select from only two ratings, such as favorable and unfavorable. The system **100** may also enable the user to select from a plurality of intermediate ratings between the two extreme ratings. In some embodiments, the user may assign a rating number on a scale with great many gradations, such as a percentage scale from 0-100; indeed, the scale can be made continuous or almost continuous.

The system **100** also enables the users to provide alphanumeric comments associated with the ratings. The system **100** may require submission of a comment with each rating.

Various conditions may be imposed by the system **100** on provision of ratings and comments. For example, the user may be prevented from rating if the user has fewer than a predefined number of total transactions, fewer than a predefined number of transactions with predetermined recency (e.g., transactions within the last month or last year), or if the user's reliability is suspect for any other reason (e.g., the user's transactions resulted in a poor score for the user).

The system **100** stores the ratings using a database, which database may be implemented with the components of the system **100**, or elsewhere. The database may be the database **160**.

FIG. **2A** illustrates an exemplary display of a first page of a profile of a user using a sobriquet or handle "ReliableSeller" on the auction site "!Auction Marketplace!" that may be implemented using the system **100**. The profile includes ReliableSeller's ratings and information derivable from the ratings. In particular, the profile includes a name field **202** with the name of the user (ReliableSeller), a score field **204** with the reliability score of the user, and a user status field **206** (indicative of the user's special status, if any, assigned based on the high number or frequency of transactions). Here, score is calculated by subtracting the total number of unfavorable ratings from the total number of favorable ratings. In another variant, the score is calculated by subtracting the total value of all transactions with unfavorable ratings from the total value of all transactions. Of course, score can be calculated in a variety of other ways. The profile further includes an age field **208** showing when the user first registered with the auction site, a location field **210** showing the user's physical location, a current sort field **212** showing the criteria used to sort the ratings for the current display. As illustrated in FIG. **2**, the ratings in a table **230** are sorted in accordance with the date each rating was provided (i.e., chronologically), from the latest to the oldest. Thus, the rows and columns of the table **230** display information regarding specific transactions and associated ratings and comments. The table **230** is organized in columns that include:

(1) a rating column **231** for listing ratings;

(2) a comment column **232** for listing comments;

(3) a participant column **233** for listing the name/handle of the participant who provided the rating, as well as the side of the transaction of that participant (purchaser or vendor, for example);

(4) a date column **234** for listing the date of the particular rating/comment combination provided; and

(5) an item column **235** for identifying the item associated with the rated transaction.

Each transaction corresponds to a specific row in the table **230**. Thus, the profile shows information regarding the most recent rating. Here, the most recent rating is favorable ("+"), and the associated comment is "++++++," provided by a purchaser EZGoing1965 on Sep. 26, 2006, regarding a transaction involving an item identified as "A123098." The data shown in the fields of the columns of the table **230** may be hyperlinked. For example, clicking on a particular name of

7
8

the participant in the column **233** may cause the system to display the profile of that participant. Similarly, clicking on a particular item in the column **235** may display information regarding the item, such as the item's price.

The display shown in FIG. **2A** is a contiguous subset of the reviews that may (and in the illustrated example, does) continue on one or more additional pages, for example, listing additional transactions with associated ratings and comments. The pages can be navigated using buttons **260**, for example, going to an immediately previous page by clicking on Previous, going to an immediately following page by clicking on Next, or by jumping to a selected page of the button corresponding to the selected page's number appearing among the buttons **260** (pages 1 through 9 of the profile). In FIG. **2A**, the Previous button is greyed out because the page appearing in the Figure is the first page of the ratings; the Next button is bolded and underlined, indicating that it can be clicked on or otherwise activated.

Among the ratings shown in FIG. **2A**, only one is a negative (unfavorable) rating. The viewer of the page would need to view page after page to find negative or neutral ratings interspersed among the great majority of positive (favorable) ratings, and to review the comments associated with the negative ratings. To facilitate this task, the display shown in FIG. **2** further includes buttons **250** and **255**. When the button **250** is activated (e.g., clicked on), the system **100** re-sorts the rows of the table **230** to display the transactions in the order of ratings, from most favorable to most unfavorable. When the button **255** is activated, the system **100** re-sorts the rows of the table **230** to display the transactions in the order of ratings, from most unfavorable to most favorable.

FIG. **2B** shows the display after the button **255** has been activated and the system **100** re-sorted the rows of the table **230** in order of the ratings, beginning with the least favorable. The rows with the same ratings here appear in chronological order, most recent first; this, however, is also not a requirement of the invention, for other ordering within each rating category are possible. If the viewer were to page down through all the negative ratings, neutral ratings would be displayed next, then followed by the favorable ratings. In embodiments with more than one intermediate rating, the intermediate ratings may be displayed in ascending order, beginning with the least favorable of the intermediate ratings. In embodiments with a "star" rating system in which between one star (least favorable) and five star (most favorable) ratings, one star ratings may be displayed first, followed by two star ratings, three star ratings, four star ratings, and five star ratings. If the button **250** is activated, then rows with the most favorable ratings would be displayed first, followed by rows with consecutively less and less favorable ratings. In embodiments with the "star" rating system mentioned earlier in this paragraph, rows with five star ratings would be displayed first, followed by rows with four star ratings, three star ratings, two star ratings, and one star ratings.

Selection of the desired sorting scheme may be accomplished using any known technique, for example, radio buttons and dialog boxes. Furthermore, the system **100** may enable the user/viewer to select sorting and the resulting display beginning with all ratings within a ratings range. For example, the system may display all unfavorable and neutral ratings together, without distinguishing between unfavorable and neutral ratings, then followed by favorable ratings; within the display, the unfavorable and neutral ratings may be sorted chronologically. Thus, a first neutral rating that is most recent of all the unfavorable and neutral ratings may be displayed in the first row, a first unfavorable rating may be displayed second if the first unfavorable rating is second most recent of

all the unfavorable and neutral ratings, and so on until the oldest rating from among all the unfavorable and neutral ratings is displayed. Then, the favorable ratings may be displayed in chronological order.

More generally, all available ratings may be split into two or more rating categories, and then sorted chronologically within each category. Each category may include one or more than one distinct ratings. The ratings are then displayed by categories, as selected by the user/viewer. Thus, in embodiments in accordance with the five star system discussed above, the user may be enabled to create a first category with one and two star ratings, a second category with three and four star ratings, and a third category with five star ratings, and then cause the system **100** to display the entries category by category in any order. This of course is a non-limiting example; fewer and more than three categories may be used, and each category may include one or more star ratings.

FIG. **3A** shows a display of a page with user ratings and comments related to a hypothetical camera Opti**101**, which may be generated by a variant of the system **100** used for online commerce. The page includes the name of the product, manufacturer, price, a hyperlink for ordering the product, technical description, picture, and a number of reviews. Each review includes a comment and a rating with one to five stars. The reviews are listed in a chronological order, latest first, which is the default sorting order. The viewer of the page can click on a button **340** to load the next review page in the current (chronological) order. As has already been noted, the less favorable ratings often carry more meaningful information, but such ratings are encountered with lower frequency. Thus, this variant includes buttons **350** and **360** on the page shown in FIG. **3A**. Clicking on the button **350** causes the system to display reviews beginning with the highest star number, which is five in this example; clicking on the button **360** causes the system to display reviews beginning with the lowest star number, which is one in this example. The latter case is illustrated in FIG. **3B**, which shows reviews beginning with the lowest ratings.

FIG. **4** is a process flow diagram illustrating selected steps and decision blocks of a process **400** in accordance with aspects of the present invention. The process **400** may be performed, in whole or in part, by the system **100** of FIG. **1**, for example. The process **400** may also be performed by various other systems. Although the process steps and decisions are described serially, certain steps and decisions may be performed by separate elements in conjunction or in parallel, asynchronously or synchronously, in a pipelined manner, or otherwise. There is no particular requirement that the steps and decisions be performed in the same order in which this description lists them or Figures show them, except where a specific order is inherently required, explicitly indicated, or is otherwise made clear from the context. Furthermore, not every illustrated step and decision block may be required in every embodiment in accordance with the invention, while some steps and decision blocks that have not been specifically illustrated, may be desirable or necessary in some embodiments in accordance with the invention. It should be noted, however, that a specific variant uses the order in which the steps are shown and described.

At flow point **401**, the system **100** is properly configured and ready to perform the steps of the process **400**. In step **405**, the system registers customers/users. The customers may be at the customer computers **180** connected to the system **100** via the network **190**, as is illustrated in FIG. **1**. Registration entails, for example, obtaining a customer's name, postal address, email address, telephone number, bank/credit card information, and product preference information. Legal dis-

closures, disclaimers, and contract terms governing the customer's relationships with the operator of the system may also be presented. The responses received from the customers and records indicating which documents have been provided to the customers may be stored in the database **160**.

In steps **410** and **412**, respectively, the system **100** receives reviews from the registered customers, and stores the reviews in the database **160**. Each review includes a rating and a comment, and relates to a product, service, or market participant. The customers may be market participants.

In step **415**, the system **100** receives an input (request) from a person interested in a given product, service, or market participant. The requesting person (requestor) may be at one of the computers **180**.

In step **420**, the system **100** displays to the person a first page of the reviews, such as web pages shown in FIGS. **2A** and **3A**. The displayed reviews are sorted in a predetermined (default) order, for example, chronologically. The displayed page includes a button or similar means for changing the order in which the reviews are displayed, such as the buttons **250** and **255** in the FIG. **2A**, and the buttons **350** and **360** in the FIG. **3A**.

In step **425**, the system **100** receives an input from the requesting person; the input indicates a different (non-default) order of sorting the reviews. For example, the input may indicate that the viewer wishes to see the reviews beginning with the least favorable, sorted in chronological order within each rating category.

In step **430**, the system **100** resorts the reviews in the order requested by the requesting person.

In step **435**, the system **100** displays first page of reviews in the order requested. For example, the system **100** may display the pages shown in FIG. **2B** or **3B**.

The process **400** may continue to receive additional inputs from the requesting person and other users, and responding to the inputs, or the process may terminate at flow point **499**, as is shown in FIG. **4**.

This document describes in considerable detail the inventive apparatus, methods, and articles of manufacture for rating-based searching, sorting, and displaying. This was done for illustration purposes only. Neither the specific embodiments of the invention as a whole, nor those of its features limit the general principles underlying the invention. The specific features described herein may be used in some embodiments, but not in others, without departure from the spirit and scope of the invention as set forth herein. Various physical arrangements of components and various step sequences also fall within the intended scope of the invention. Many additional modifications are intended in the foregoing disclosure, and it will be appreciated by those of ordinary skill in the art that in some instances some features of the invention will be employed in the absence of a corresponding use of other features. The illustrative examples therefore do not define the metes and bounds of the invention and the legal protection afforded the invention, which function is carried out by the claims and their equivalents.

I claim:

1. A computer-implemented method of displaying data, the method comprising:

receiving from a plurality of customers reviews for a plurality of subjects, each subject of the plurality of subjects being selected from a group consisting of a product, a service, and a market participant, said plurality of subjects comprising a first subject, the customer reviews comprising a first plurality of reviews for the first subject, each review of the first plurality of reviews comprising a rating of the first subject and a comment asso-

ciated with the first subject, a single customer of the plurality of customers per review of the first plurality of reviews;

sorting the first plurality of reviews in a default order to obtain a default ordered first plurality of reviews;

causing at least a first subset of the default ordered first plurality of reviews to be displayed on a first display page, the first display page comprising a first input for requesting a first non-default ordered display of the first plurality of reviews in accordance with a first non-default order, the first non-default order being based on ratings in the reviews of the first plurality of reviews, the first non-default order being different from the default order, the first subset comprising a plurality of contiguous reviews;

receiving through the first input a first request for the first non-default ordered display of the first plurality of reviews;

sorting the first plurality of reviews in the first non-default order to obtain a first non-default ordered first plurality of reviews; and

in response to the first request, causing to be displayed on a second display page at least a second subset of the first non-default ordered first plurality of reviews, the second subset comprising a plurality of contiguous reviews;

wherein the steps of receiving from the plurality of customers reviews, sorting the first plurality of reviews in the default order, causing at least the first subset of the default ordered first plurality of reviews to be displayed, receiving through the first input the first request, sorting the first plurality of reviews in the first non-default order, and causing to be displayed on the second display page are performed by one or more computers.

2. A method according to claim **1**, wherein the default order is chronological beginning with the latest review, and the first non-default order is rating-based with a review having a most favored rating being ordered ahead of a review having a least favored rating.

3. A method according to claim **1**, wherein the default order is chronological beginning with the latest review, and the first non-default order is rating-based with a review having a least favored rating being ordered ahead of a review having a most favored rating.

4. A method according to claim **3**, wherein the first subject comprises a profile of a first market participant.

5. A method according to claim **3**, wherein the first subject comprises a product.

6. A method according to claim **3**, wherein the first subject comprises a service.

7. A method according to claim **1**, wherein the first display page further comprises a second input for requesting a second non-default ordered display of the first plurality of reviews in accordance with a second non-default order, the second non-default order being different from the default order and from the first non-default order.

8. A method according to claim **1**, wherein each rating in the first plurality of reviews is selected from a group consisting of a favorable rating selection and an unfavorable rating selection.

9. A method according to claim **1**, wherein each rating in the first plurality of reviews is selected from a group consisting of a favorable rating selection, an unfavorable rating selection, and an intermediate rating selection.

10. A method according to claim **1**, wherein each rating in the first plurality of reviews is selected from a group consisting of a first rating selection, a second rating selection, and a third rating selection.

11. A method according to claim 10, wherein the first non-default order is such that each review of the first plurality of reviews that has a first rating selection or a second rating selection is placed ahead of each review of the first plurality of reviews that has a third rating selection, and wherein the reviews of the first plurality of reviews that have first or second rating selections are ordered chronologically.

12. A method according to claim 1, wherein the second display page further comprises a third input for requesting a second non-default ordered display of the first plurality of reviews in accordance with a second non-default order, the second non-default order being different from the default order and from the first non-default order, the method further comprising:

after the step of causing to be displayed on the second display page, receiving through the third input a second request for the second non-default ordered display of the first plurality of reviews;

sorting the first plurality of reviews in the second non-default order of the first plurality of reviews to obtain a second non-default ordered first plurality of reviews; and

in response to the second request, causing to be displayed at least a third subset of the second non-default ordered first plurality of reviews on a third display page, the third subset comprising a plurality of contiguous reviews.

13. A method according to claim 1, wherein each rating in the first plurality of reviews is selected from a group comprising a mutually withdrawn rating selection.

14. An article of manufacture comprising one or more memory devices storing computer code, wherein the code, when executed by at least one processor coupled to the Internet, configures the processor to perform a method comprising:

receiving from a plurality of customers reviews for a plurality of subjects, each subject of the plurality of subjects being selected from a group consisting of a product, a service, and a market participant, said plurality of subjects comprising a first subject, the customer reviews comprising a first plurality of reviews for the first subject, each review of the first plurality of reviews comprising a rating of the first subject and a comment associated with the first subject, a single customer of the plurality of customers per review of the first plurality of reviews;

sorting the first plurality of reviews in a default order to obtain a default ordered first plurality of reviews;

causing at least a first subset of the default ordered first plurality of reviews to be displayed on a first display page, the first display page comprising a first input for requesting a first non-default ordered display of the first plurality of reviews in accordance with a first non-default order, the first non-default order being based on ratings in the reviews of the first plurality of reviews, the first non-default order being different from the default order, the first subset comprising a plurality of contiguous reviews;

receiving through the first input a first request for the first non-default ordered display of the first plurality of reviews;

sorting the first plurality of reviews in the first non-default order to obtain a first non-default ordered first plurality of reviews; and

in response to the first request, causing to be displayed on a second display page at least a second subset of the first non-default ordered first plurality of reviews, the second subset comprising a plurality of contiguous reviews.

15. A computer system comprising a memory device storing computer code, at least one processor coupled to the memory device so as to execute the computer code, and a network interface coupling the at least one processor to the Internet, wherein the computer code, when executed by the at least one processor, configures the at least one processor to perform steps of a method comprising:

receiving from a plurality of customers reviews for a plurality of subjects, each subject of the plurality of subjects being selected from a group consisting of a product, a service, and a market participant, said plurality of subjects comprising a first subject, the customer reviews comprising a first plurality of reviews for the first subject, each review of the first plurality of reviews comprising a rating of the first subject and a comment associated with the first subject, a single customer of the plurality of customers per review of the first plurality of reviews;

sorting the first plurality of reviews in a default order to obtain a default ordered first plurality of reviews;

causing at least a first subset of the default ordered first plurality of reviews to be displayed on a first display page, the first display page comprising a first input for requesting a first non-default ordered display of the first plurality of reviews in accordance with a first non-default order, the first non-default order being based on ratings in the reviews of the first plurality of reviews, the first non-default order being different from the default order, the first subset comprising a plurality of contiguous reviews;

receiving through the first input a first request for the first non-default ordered display of the first plurality of reviews;

sorting the first plurality of reviews in the first non-default order to obtain a first non-default ordered first plurality of reviews; and

in response to the first request, causing to be displayed on a second display page at least a second subset of the first non-default ordered first plurality of reviews, the second subset comprising a plurality of contiguous reviews.

16. A computer system comprising a memory device storing computer code, at least one processor coupled to the memory device so as to execute the computer code, and a network interface coupling the at least one processor to the Internet, wherein the computer code, when executed by the at least one processor, configures the at least one processor to perform steps of a method comprising:

receiving from a plurality of customers a plurality of reviews relating to a subject, each review of the plurality of reviews comprising a user rating of the subject and a user comment associated with the subject, a single customer of the plurality of customers per review of the plurality of reviews;

causing the first plurality of reviews to be displayed in a default order;

causing the plurality of reviews to be displayed in a non-default order in response to a customer request, the non-default order being different from the default order, the non-default order being based on the user ratings in the reviews.

17. A computer system according to claim 16, wherein the non-default order is such that reviews with unfavorable ratings are displayed before reviews with favorable ratings.

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