Listify

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Overview

- ➢ Problem

Oftentimes groups of people find themselves in disagreement over the prioritization or order of things. For example, it is often hard for a group of people to agree on questions of the sort: "What are Kanye's albums listed from best to worst?", "Who are the top 5 players in the NBA?", or more usefully, "Looking to buy some dresses for the Spring. Which look best on me?", and "What should our budget be used to buy this semester, from most necessary to least?"

- ➢ Our Solution

Listify seeks to mitigate this problem by providing a quick and simple experience for crowdsourcing opinions on questions of this type. Listify is an application that allows users to create private or public lists for people to fill out by designating the items that can be put on the list, while also allowing freedom for suggestions for other items that should be in the pool of rankable items. Lists can be private or public depending on the user's preferences and how they'd like to share their list with their respondents. Once a list is created, the creators can either choose other Listify users to share it with, or they can generate a unique url that points any individual to that list, allowing them to easily get crowdsourcing for answers through group chats, emails, Facebook, Twitter, etc.

Responding users can click and drag to fill out lists easily, and make suggestions for other items the creator of the list may have missed when making it. When the user who created the list decides to close responses, an algorithm produces a finalized crowdsourced list reflecting the opinions of the respondents at the same url that was originally generated for the creating user.

Listify also allows users to post their lists to the public Listify feed, wherein they can follow/unfollow certain users or their lists, as well as respond to the lists that other people have made. Lists with the most responses will float to the top, allowing for trending lists to become more popular and making for an interesting social experience. By adding a social aspect to Listify as well as a private option, we allow the user to use Listify both as an application on its own, as well as alongside their preferred apps for everything else (with private urls), reducing complexity compared to other competitors. Also, typical polling and form apps with similar operational principles do not provide the ability to gauge relative likes/dislikes/priorities, and instead they focus on receiving a single answer instead, missing key information about how people make decisions.

Concepts

- ➢ Key Concept
  - ○ Ranking
    - ■ <u>Purpose:</u> Allows users to create a list with a pool of possible response items, letting them crowdsource opinions on the ranking from respondents.
    - ■ <u>Operational Principle:</u> If a rank is submitted, it is aggregated with all other responses algorithmically to reveal to the respondent what the current status of the ranking is following their submission. Rankings are not otherwise revealed to respondents. Rankings are closed when the creator of the ranking chooses to close it, upon which the results become visible to all users via the ranking's unique url.
    - ■ <u>Misfits:</u>
      - ● Avoids the issue of certain items which a respondent would like to be on the list not being on the list by allowing respondents to input suggestions which are then relayed to the creator of the list upon the ranking closing.
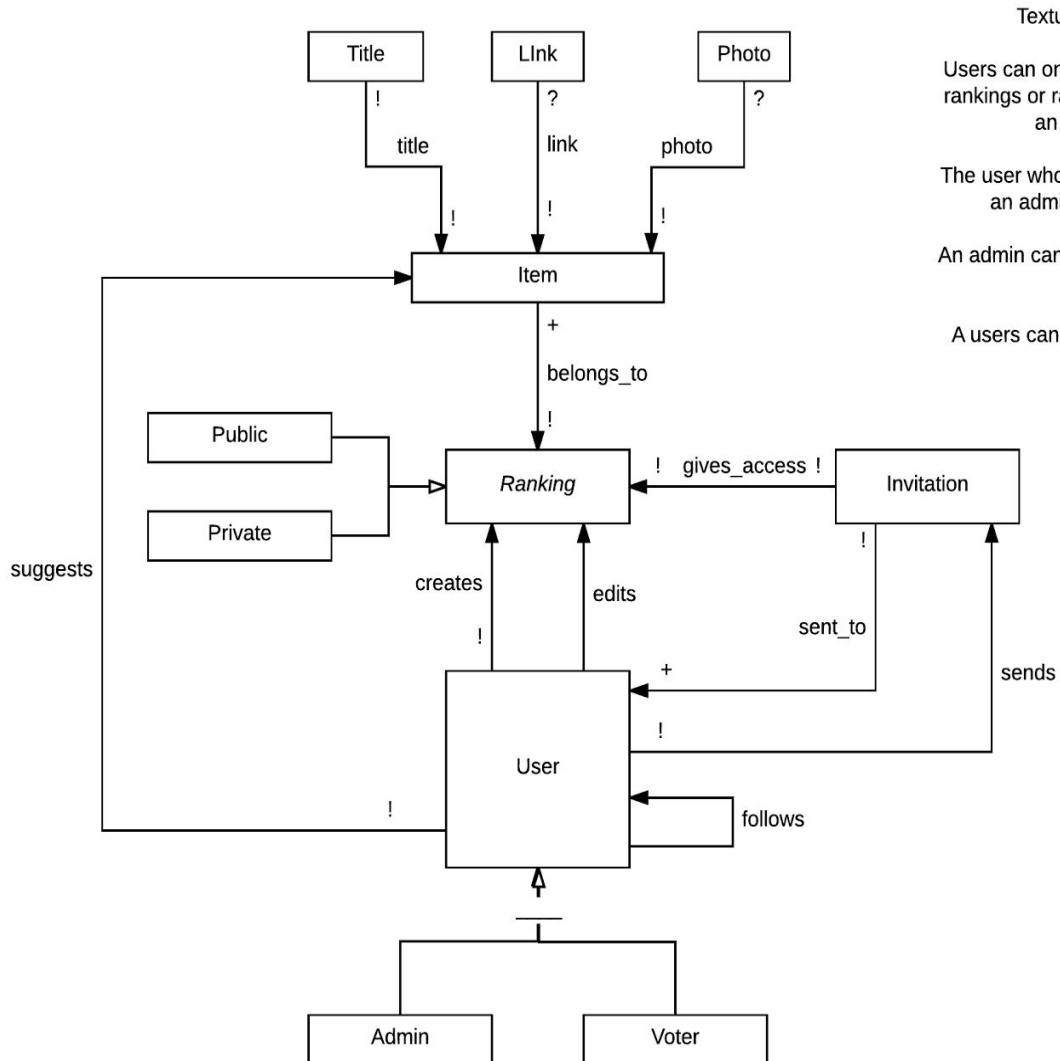- ➢ Other Concepts:
  - ○ Item
    - ■ <u>Purpose:</u> Allows users to add items to the pool of items that can be ranked in their list. Encapsulates information about a potential ranking item by including text, images, and links as needed.
    - ■ <u>Operational Principle:</u> If a person creates an item, then it will be added to the pool of items that can be ranked in their list. Items can include text, hyperlinks, or images, allowing a diverse range of things to be ranked. For users editing a ranking, items can be dragged into a ranking slot to indicate the user's preferences.
    - ■ <u>Misfits:</u>
      - ● Avoids the issue of users wanting to rank many different kinds of items by allowing various types of input (text, hyperlinks, images, etc.).
  - ○ Invite
    - ■ <u>Purpose:</u> Allow users to respond to public or private Listify rankings.
    - ■ <u>Operational Principle:</u> Invitations can be sent between users in the Listify application, or via a unique URL that can be distributed to anybody with Internet access. Invitations can be sent for both private and public lists.
    - ■ <u>Misfits:</u>
      - ● Avoids the issue of users wanting to invite respondents who may not have Listify accounts, as well as that of wanting to invite respondents through modes of communication they already use (such as group chats, Twitter, Facebook, etc.).

Data Model

Title

LInk

Photo

! title

? link

? photo

! ! !

Item

+ belongs_to

!

Public

Ranking ! gives_access ! Invitation

Private

! !

suggests creates edits sent_to sends

! +

User

! follows

Admin Voter

Security Concerns

- ➢ Security Requirements
  - ○ Private Rankings must remain private
    - ■ To illustrate this point, imagine a teacher looking to poll her class to determine the best day to go on a field trip. Like all other rankings, she'll be able to generate an aggregate list of the most popular responses from her class. However, she certainly doesn't want this ranking to be published on the Listify app - that's sensitive data!
    - ■ To address this, private rankings will only be accessible via a secret and unique link. Only users with that link will have access to the ranking.
  - ○ Respondents can't see the ranking's current consensus until after they've submitted a response.
    - ■ The creator of a ranking determines when the ranking should end polling. Until this point, no aggregate/consensus data should be determined or visible. This way, no user could potentially see premature results.
  - ○ Once a ranking is uploaded to the Listify's public feed, all data from users who submitted responses is aggregated, and can't be linked back to any specific users.
  - ○ Respondents who are given access to a list via URL should only be able to submit one response.
    - ■ We may decide to allow users to submit multiple responses, but this can be dangerous because a user could continuously submit responses to skew the results of the ranking. To combat this, we could either allow users to submit up to a certain number of responses, or we could use the last response from each user when aggregating the responses.
- ➢ Web Attack Mitigation
  - ○ Only creators of lists are allowed to generate input.
    - ■ All respondents select from a predetermined pool of items. We will use a "whitelist" model along with a sanitization library to ensure creators are not putting malicious content into their generated items.
- ➢ Threat Model (assumptions made about attackers)
  - ○ Listify assumes the creators of lists will not include scripts or other malicious inputs in the items in the pool of options. We will not, however, rely on this assumption.
  - ○ Listify assumes the respondents of a list will not include scripts or other malicious inputs into the item suggestions they make when responding to a list. Remember, users can't choose the items to be ranked; they can, however, make suggestions for the creator.

User-Interface Wireframes

1. Creating a List (empty)

Listify

Name of your ranking

✎ Enter a suggestion   Add

✓

2. Creating a List (in progress)

Listify

Best Players in the NBA

✎ Enter a suggestion   Add

1.   Lebron James ✎

2.   Bismack Biyombo ✎
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     eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim
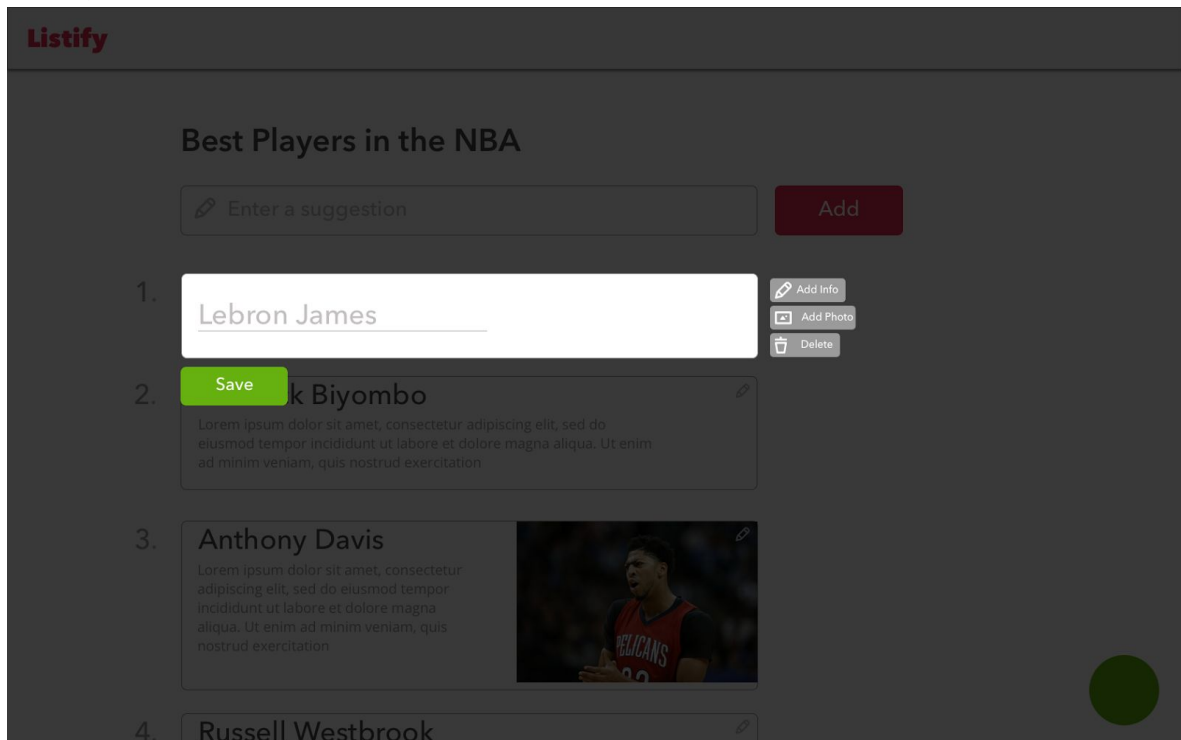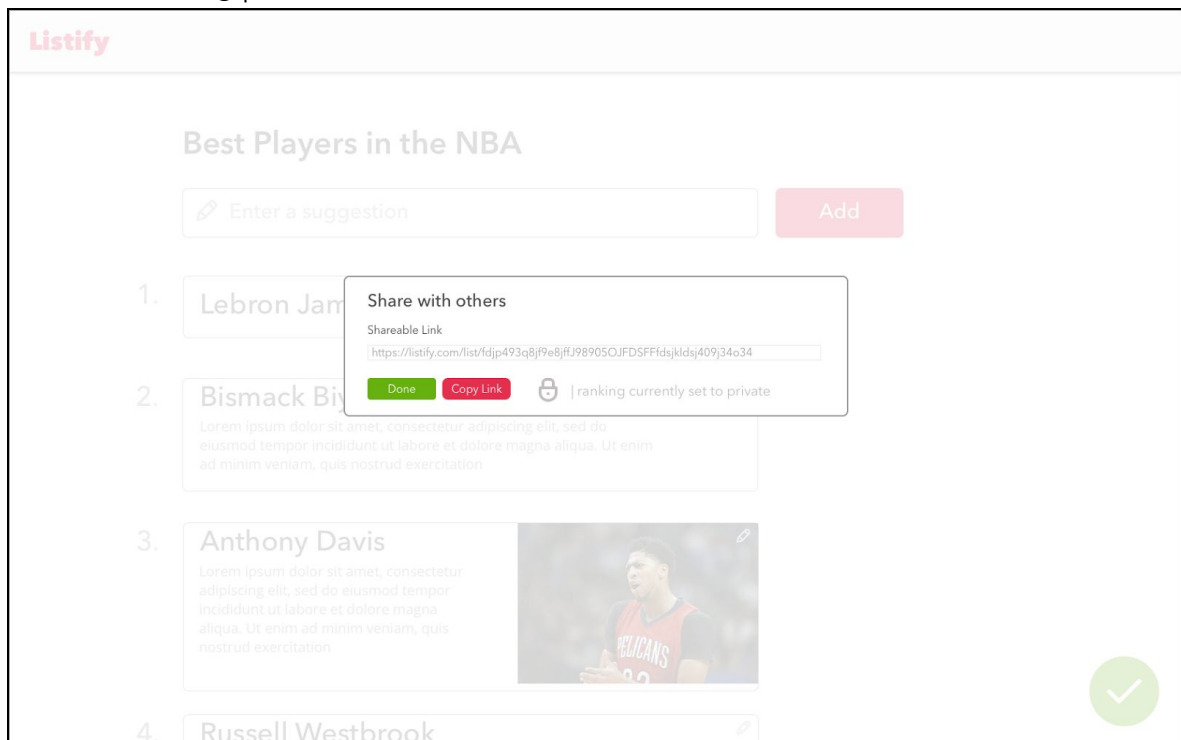   ad minim veniam, quis nostrud exercitation

3.   Anthony Davis ✎
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     adipiscing elit, sed do eiusmod tempor
     incididunt ut labore et dolore magna
     aliqua. Ut enim ad minim veniam, quis
     nostrud exercitation

✓

4.   Russell Westbrook ✎

3. Editing a List

4. Sharing a List (Dialog appears after clicking on green checkmark, clicking the lock will make the ranking public)

5. Viewing a List (This is what other users see after clicking on a shared link)

6. Rearranging a created List (Green checkmark will not appear until all items have been placed in a ranking)

7. Submitting a List (Dialog appears after clicking on green checkmark)

8. Seeing Consensus Ranking (Seen after submitting your own ranking)

9. User Profile

Listify

Trending Rankings | Most Recent

1. Best Players in the NBA   13

2. Things I should do first   10

3. Best songs from the 90's   5

4. Favorite Movies   8

Phillip Ou's Rankings

👤 Follow

🟢 Completed

🔴 In Progress

➕

10. Dashboard (Trending Lists and Recent Lists)

Listify

Trending Rankings | Most Recent

1. Best GIFs of 2016
   created by Ricky Bobby   150

2. Favorite Sports to Play
   created by Spencer Kim   99

3. Best Looking Phil
   created by Phillip Ou   99

4. Favorite TV Shows
   created by Tom Tom   85

5. Least Favorite Westworld Character
   created by Phillip Ou   82

🟢 Completed

🔴 In Progress

➕

Challenges

➢ Users may create multiple accounts to upvote their own rankings or downvote others'
rankings
  ○ This is a currently unsolved social media problem that we don't plan to solve.
    The best we can do is keep track of information stored in cookies to prevent
    someone using the same browser to vote on a public link again. This will not
    prevent them from clearing their cookies or voting using another browser.
➢ Creators may put invalid/inappropriate items into the list's pool of options
  ○ Creators are free to build the pool of items however they wish. If a list gets
    published with inappropriate items, our application allows users to downvote
    content, so these lists would ideally be filtered out. We will also consider
    allowing users to flag lists they believe are inappropriate.
➢ How to differentiate between Best to Worst vs. Worst to Best lists
  ○ Having users provide a ranking gives more information about the relative
    preferences of a group, but a user may create a title that might make it
    confusing to determine whether 1 denotes the most applicable option or the
    least applicable option.
  ○ There are two options here:
    ■ Remove the choice from the creator: include a UI instruction that shows
      the creator that the first slot is for the most applicable item, and the last
      slot is for the least applicable item
    ■ Allow the creator to determine which way the ranking is sorted: have
      the creator mark a flag that indicates whether the first slot is for the
      most applicable or the least applicable item, and then relay that
      information to all respondents via the user interface.

➢ Problems to resolve in Concepts
  ○ Problem: How to determine who has access to a ranking?
    ■ Options available:
      ● Allow private lists to be accessed by anybody with a secret, unique link generated by Listify. The user then sends the link to others
      ● Make the user in charge of keeping the ranking url secret and only sharing with certain people
    ■ Evaluation:
      ● This design works fairly well for other companies like Google, so we're expecting that, as long as the URLs are difficult to guess, this solution will work well
    ■ Which chosen and why?
      ● We chose to use secret links - much more secure and easy to use/distribute
      ● This design decision is on par with the security of Google Docs/Forms that are distributed to people via a link

  ○ Problem: When does a ranking close?
    ■ Options available:
      ● manually closed by the creator
      ● expires after a predetermined time interval
    ■ Evaluation:
      ● Google Forms require users to write a Google Script to schedule an expiration time/date for the form. Listify will allow users to easily set an expiration time for the ranking. We view this as a useful and much needed improvement on existing solutions.
    ■ Which chosen and why?
      ● We plan to implement both features. A list creator can manually close a ranking at any time, or he/she can assign an expiration to the ranking which closes it after the time expires.

  ○ Problem: What if a user does not have an account?
    ■ Options available:
      ● Force users to create an account before accessing a ranking
      ● Allow anonymous users to submit rankings, but don't give them access to the application

- ● Allow anonymous users to submit rankings and access the application
    - ■ Evaluation:
        - ● This solution will be extremely useful in settings where a list creator would like to poll a group of people without forcing each of them to create a Listify account. Also, this is a solution that works really well for Google with shared Google Docs.
    - ■ Which chosen and why?
        - ● We chose to allow anonymous users to submit rankings, but deny them access to the rest of the application. In effect, users without Listify accounts can submit rankings provided they have a link to an active ranking in the same way that a Google Doc can be shared without granting access to the rest of the sharer's Google Drive

- ➢ Problems to resolve in User Interface
    - ○ Problem: What is the best way for the user to input his/her preferences?
        - ■ Options available:
            - ● Drag and Drop
            - ● Click from dropdown list of options for each slot
            - ● Typing items into the ranking slots
        - ■ Evaluation:
            - ● Typing and clicking from dropdown list of options may be valid ways for getting user input, however, they may not be as intuitive and easy to learn as drag and drop. People will not respond if a ranking is time-consuming to fill out. Also, "gamifying" ranking with drag and drop can make it more appealing for users to actually respond to rankings.
        - ■ Which chosen and why?
            - ● Listify allows users to drag and drop items from the pool of options. Allowing users to type answers into the ranking slots would require a significantly more difficult implementation that would need to constrain the user to the predetermined pool of options. Choosing from a dropdown is not a scalable option for large pools of options such as potential the massive list of potential NBA players for the ranking of the "Top 5 NBA Players of All Time".
    - ○ Problem: How does a ranking convey whether it is in most applicable to least applicable order, or vice versa?
        - ■ Options available:
            - ● Color coding (green for the first item, scaled to red for the last item, for example).

- Small checkbox next to the first item that represents whether or not the first item is the least applicable or the most applicable.
- Text in a prompt at the top that says "Best to Worst", "Least Applicable to Most Applicable", etc. that is typed in by the creator at time of creation.
  - Evaluation:
    - Allowing the creating user to simply write their own prompt at the top of the list may result in a lot of confusion amongst respondents if the creating user is not explicitly clear. Perhaps allowing the creating user to chose the direction of the scaling (from least to most applicable or vice versa) would take away the possibility of confusing both the respondents, as well as the creating user when he receives responses that seem to contradict what he was trying to convey. A small checkbox may also result in confusion as it would not be immediately clear what it is conveying and it would be less intuitive for first time users.
  - Which chosen and why?
    - We chose to allow the creator of the list to designate the order in which he would like to receive rankings, as well as for this user to create a text prompt that describes the ranking. This text prompt will serve just to introduce the ranking to the respondents and should be 1 to 2 sentences in length. To avoid confusion, the designation of the order of the ranking will be made very clear to the end users through a color coded scale from green to red (most applicable to least) or red to green (least applicable to most). Perhaps a small checkbox would also be helpful for colorblind users so as to allow them to process the same information despite the color changes not being immediately clear to them. This is intuitive to the human eye (most human eyes) and will make it easy for a first time user to click a Listify ranking and know exactly how to respond.