



New Relic Apdex Board - Code challenge

We want to build a new page view that shows the list of applications running on every host.

- An application has a name, a list of contributors, a release version number, and a list of hosts that the app has been deployed at.
- Each application has an Apdex metric assigned. The Apdex score is a positive integer between 0 (Frustrated) and 100 (Satisfied). Apdex is an industry-standard to measure users' satisfaction based on the response time of web applications and services.

You are asked to build a new feature to display the most satisfying applications deployed on each host. You can find [attached a JSON file](#) (host-app-data.json) with the data required for this exercise.

- You must write well-organized code that:
 - Models the described problem with a suitable class hierarchy.
 - Implements the “getTopAppsByHost” method that, given a hostname, retrieves a list of the 25 most satisfying applications.
 - Implements the “addAppToHosts” and “removeAppFromHosts” methods, which update the list of applications with higher Apdex whenever any of these methods is called. (Hint: Be warned that when an app gets removed, “getTopAppsByHost” still has to return 25 items). These two methods are not triggered from anywhere in the design: that’s ok, in this case we care about the logic and not about the UI layer.
- You must implement a UI, based on the [provided mockups](#):
 - Each card representing a host must display its top 5 apps ordered by satisfaction.
 - As shown in the mockups, there are two types of layouts (grid and list) and when clicking on the checkbox the layout changes.
 - When clicking over an app, an alert dialog including the release number has to be shown.

- Browser support: latest 2 versions of Chrome, Firefox, Safari, Edge, Opera.

Requirements and restrictions

- Each application list is always ordered by Apdex. The first app is the one with the highest Apdex. From top to bottom, most satisfied to most frustrated app.
- For this specific solution, you do not need to worry about changes on the Apdex metric of an application.
- Provide source code, not the compiled code. Please DO NOT share the solution through a public source code system (GitHub, GitLab...)
- Do not use frameworks / libraries such as React, Angular, etc.

Things we are looking for

- Maintainable and well-written code using good object oriented practices.
- Specify Big-O notation of your algorithm. You should strive for an optimal solution.

Things that we are NOT looking for

- Database or any data source connection or any kind of ORM. It's OK to read the provided JSON file all at once.
- Using 3rd party libraries such as JS or CSS libraries (i.e Angular, React...). Except for the ones to assist your development such as test or build frameworks.

[Example data JSON file]

<https://drive.google.com/file/d/0B88HSu672Sp9RVRQa3InLTY4Mmc/view?usp=sharing&resourcekey=0-354KovQ-F67-lZxJXRgNZw>

[UI mockups]

<https://drive.google.com/drive/folders/0B88HSu672Sp9Mk1UMDVpUnJwdnc?resourcekey=0-gheuNMf10FsWRDmJuf4Rag>

840px

color: #000000 100%
font-size: 35px
font-face: HelveticaNeue-Bold
line: 43px (1.2)

color: #000000 100%
font-size: 18px
font-face: HelveticaNeue
line: 22px (1.2)

Apps by Host

for user averylongemailaddress@companyname.com

Show as list

30px

7983b3a1-b4c4.marilie.biz

- 99 Licensed Cotton Chair - Thiel, Graham and Mraz, LLC
- 97 Rustic Rubber Shoes - Schmitt, Rohan and Feest, and Sons
- 95 Tasty Frozen Mouse - Schmitt, Rohan and Mante, Group
- 93 Intelligent Soft Salad - Conroy
- 91 Intelligent Plastic Bike - Von Group, Group

866b-a08e3cb30167.alana.name

- 99 Tasty Wine - McClure
- Gorgeous Rubber Mouse - Reichel, Boyle and Altenwerth, LLC
- 95 Unbranded Steel Sausages - Lebsack, Doyle and Torp, Inc
- 93 Tasty Frozen Shirt - Marvin, Bednar and Adams, Inc
- 91 Incredible Metal Towels - Hayes, and Rohan, Inc

bd2d-a8fd495eaebc.art.org

- 99 Licensed Granite Computer - Dietrich - Gutmann, Group
- 97 Intelligent Fresh Mouse - Wolf Group, LLC
- 95 Handmade Granite Bike - Rau LLC, Group
- 93 Awesome Frozen Chicken - Roob Inc, LLC
- 91 Awesome Soft Fish - Hirthe LLC, and Sons

bb05-963e57a1cdff.linnie.info

- 99 Ergonomic Granite Towels - Deckow and Sons, LLC
- 97 Fantastic Granite Ball - Kautzer, Bechtelar and Kihn, LLC
- 95 Rustic Steel Car - Roob - Lowe, Inc
- 93 Intelligent Cotton Bacon - Yundt, Volkman and Casper, Inc
- 91 Small Plastic Car - Wisoky - Jakubowski, Group

```
[{"name": "Ergonomic Wooden Soap - Lemke and Sons, Inc",  
  "contributors": ["Miss Moises Walter", "Caroline Murazik"],  
  "version": 2,  
  "apdex": 61,  
  "host": ["e7bf58af-f0be.dallas.biz", "b0b655c5-928a.nadia.biz", "95b346a0-17f4.abbigail.name"]  
}, {"name": "Rustic Soft Sausages - Pagac, O'Keefe and Schaefer, LLC",  
  "contributors": ["Ms. Toby Weissnat", "Archibald Dicki"],  
  "version": 4,  
  "apdex": 55,  
  "host": ["95b346a0-17f4.abbigail.name", "128406fc-0d3f.tiana.biz", "e7bf58af-f0be.dallas.biz"]  
}, {"name": "Ergonomic Concrete Fish - Williamson - Hodkiewicz, and Sons",  
  "contributors": ["Kyleigh Langworth", "Frieda Witting", "Darien Connelly"],  
  "version": 1,  
  "apdex": 56,  
  "host": ["9a450527-cdd9.kareem.info", "e0419f48-6a5a.craig.info", "128406fc-0d3f.tiana.biz", "2b4cfcf7-81d5.kelli.org"]  
}, {"name": "Tasty Steel Towels - Hane LLC, Inc",  
  "contributors": ["Mrs. Rhianna Tromp", "Pedro Pfeffer", "Faye Dickens"],  
  "version": 10,  
  "apdex": 64,  
  "host": ["e0419f48-6a5a.craig.info", "9a450527-cdd9.kareem.info", "e7bf58af-f0be.dallas.biz"]  
}, {"name": "Incredible Frozen Shirt - Padberg and Sons, Group",  
  "contributors": ["Alexander Powlowski", "Mrs. Maia Walter"],  
  "version": 10,  
  "apdex": 61,  
  "host": ["b0b655c5-928a.nadia.biz", "95b346a0-17f4.abbigail.name"]  
}]
```

7983b3a1-b4c4.marilie.biz

- 99
- Licensed Cotton Chair - Thiel, Graham and Mraz, LLC
- 97
- Rustic Rubber Shoes - Schmidt, West and Feest, and Sons
- 95
- Tasty Frozen Mouse - Schmitt, Rohan and Mante, Group
- 93
- Intelligent Soft Salad - Conroy
- 91
- Intelligent Plastic Bike - Von Group, Group

866b-a08e3cb30167.alana.name

- 99
- Tasty Wooden Pizza - Waters, McClure and Fahey, Group
- 97
- Gorgeous Rubber Mouse - Reichel, Boyle and Altenwerth, LLC
- 95
- Unbranded Steel Sausages - Lebsack, Doyle and Torp, Inc
- 93
- Tasty Frozen Shirt - Marvin, Bednar and Adams, Inc
- 91
- Incredible Metal Towels - Hayes, Witting and Rohan, Inc

bd2d-a8fd495eaebc.art.org

- 99
- Licensed Granite Computer - Dietrich - Gutmann, Group
- 97
- Intelligent Fresh Mouse - Wolf Group, LLC
- 95
- Handmade Granite Bike - Rau LLC, Group
- 93
- Awesome Frozen Chicken - Roob Inc, LLC
- 91
- Awesome Soft Fish - Hirthe LLC, and Sons

bb05-963e57a1cdff.linnie.info

- 99
- Ergonomic Granite Towels - Deckow and Sons, LLC
- 97
- Fantastic Granite Ball - Kautzer, Bechtelar and Kihn, LLC
- 95
- Rustic Steel Car - Roob - Lowe, Inc
- 93
- Intelligent Cotton Bacon - Yundt, Volkman and Casper, Inc
- 91
- Small Plastic Car - Wisoky - Jakubowski, Group

7983b3a1-b4c4.marilie.biz

- 99 Licensed Cotton Chair - Thiel, Graham and Mraz, LLC
- 97 Rustic Rubber Shoes - Schmidt, West and Feest, and Sons
- 95 Tasty Frozen Mouse - Schmitt, Rohan and Mante, Group
- 93 Intelligent Soft Salad - Conroy
- 91 Intelligent Plastic Bike - Von Group, Group

866b-a08e3cb30167.alana.name

- 99 Tasty Wooden Pizza - Waters, McClure and Fahey, Group
- 97 Gorgeous Rubber Mouse - Reichel, Boyle and Altenwerth, LLC
- 95 Unbranded Steel Sausages - Lebsack, Doyle and Torp, Inc
- 93 Tasty Frozen Shirt - Marvin, Bednar and Adams, Inc
- 91 Incredible Metal Towels - Hayes, Witting and Rohan, Inc

bd2d-a8fd495eaebc.art.org

- 99 Licensed Granite Computer - Dietrich - Gutmann, Group
- 97 Intelligent Fresh Mouse - Wolf Group, LLC
- 95 Handmade Granite Bike - Rau LLC, Group
- 93 Awesome Frozen Chicken - Roob Inc, LLC
- 91 Awesome Soft Fish - Hirthe LLC, and Sons

bb05-963e57a1cdff.linnie.info

- 99 Ergonomic Granite Towels - Deckow and Sons, LLC
- 97 Fantastic Granite Ball - Kautzer, Bechtelar and Kihn, LLC
- 95 Rustic Steel Car - Roob - Lowe, Inc
- 93 Intelligent Cotton Bacon - Yundt, Volkman and Casper, Inc
- 91 Small Plastic Car - Wisoky - Jakubowski, Group