Frontend Challenge for Juniors, Mid, Seniors

The idea is to ask the candidate for a task similar to what he/she might find in the real job. As we do analytic, we use charts, we use a lot of private libs(components and functionalities), this challenge will try to get the candidate into that situation.

Every candidate needs to do the **main task**, and then depending on their level they have different **bonus tasks** that we are expecting from them.

How much **effort/time** will it take?

> This is the amount of work we expect you to do in a day. Depending on your expertise it will take around 4h to 6h. Please do not spend more than 6h.
> All the tasks are not mandatory, just do your best.
> Please provide code that runs, only code that runs will be reviewed.

Goal

- We want to display Marvel superheroes on a table, and get some key values from there.
  - Data is provided on a file (wikipedia_marvel_data.json)
  - Mockups are also provided.
  - Use https://material.angular.io/components as the ui component source
- Every candidate will do the Main Task, then:
  - **Junior candidates,** we expect from you to do: Task1
  - **Mid candidates**, we expect from you to do: Task1 and Task2
  - **Senior candidates**, we expect from you to do: Task1,Task2 and one more, choose between Task3 or Task4.
  - Anyone: Feel free to do more than the expected task, if you want to express higher seniority.

Main Task

1. Read Marvel data provided and display it on a table.
   (https://material.angular.io/components/table/overview)
2. This table has the following features:
   a. I want to be able to sort values by each column
   b. Using the chips component, I want to type one or more hero names, and display on the table only those heroes
      (https://material.angular.io/components/chips/examples)
   c. When I click on a row, I want to display the whole heroe info on a modal
      (https://material.angular.io/components/dialog/examples)

Bonus Task 1 (Must for Juniors, Mid and Seniors)

- Add a button on the page that says, "create hero".
- The button will open a form on a modal or expansion panel
  (https://material.angular.io/components/expansion/overview) that will allow you to create a hero and by submitting the hero will go on **top of the table**.

Bonus Task 2 (Must for Mid and Seniors)
- Add options to delete and modify current heroes
- After adding, deleting, modifying heroes, data on the table must be persistent (They will be on the table after refresh)

Bonus Task 3 (Seniors have to choose this one, or Task 4)
- Using D3/Plotly/Chart.js or any other charts lib to create a chart at the top of each column that will represent the values of the column.
  - If there are only 5 different values or less, use a pie chart
  - If there are more than 5 different values , use a bar chart

Bonus Task 4 (Seniors have to choose this one, or Task 3)
- Use Kpis instead of charts to display the metrics of each column. Example: men % vs women %, number of heroes per country.
- Config jest on the app, and write at least unit test suite. We recommend testing the CRUD feature.
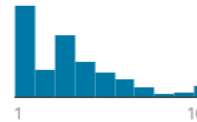
Note: Code does not need to be perfect, but think about improvements that you will add to send this code to production.

What are we looking for with this challenge?
- Has the candidate separated the app into components(pie chart, bar chart, modal, table)?
- Has the candidate created a service, custom pipes, interfaces, enums…?
- How does the candidate communicate data between components?
- Was the candidate able to use the data file instead of a pure API?
- Was the candidate able to use the components of a ui lib to create the app?
- Was the candidate able to use D3 to create the charts?

Mockup:
Use this image as a reference,not something you have to copy, keep in mind that using material
the look and feel will be different. Also data will be a bit different.

▲ Name	▲ Alignment	# Intelligence	# Strength	# Speed	#
610 unique values	good 71% / bad 27% / Other (14) 2%	1 ... 113	1 ... 100	1 ... 100	1
3-D Man	good	50	31	43	32
A-Bomb	good	38	100	17	86
Abe Sapien	good	88	14	35	42
Abin Sur	good	50	90	53	64
Abomination	bad	63	80	53	96
Abraxas	bad	88	100	83	99
Adam Monroe	good	63	10	12	16
Adam Strange	good	1	1	1	1
Agent 13	good	1	1	1	1
Agent Bob	good	10	8	13	5
Agent Zero	good	75	28	38	86
Air-Walker	bad	50	85	100	85
Alan Scott	good	63	80	23	96
Alex Woolsly	good	1	1	1	1
Alfred Pennyworth	good	63	10	17	16
Allan Quatermain	good	1	1	1	1

Tech source
https://towardsdatascience.com/create-a-marvel-database-with-sql-and-javascript-the-easy-way-573ccdf44673

Query in use to retrieve the data:

https://query.wikidata.org/#%23Marvel%20Database%0A%23%20Jun%202019%0A%0A%23%20I%20am%20using%20the%20variable%20%22name%22%20here%2C%20but%20it%20could%20be%20item%2C%20node%2C%20object%2C%20hero%2C%20person...%0A%23%20Each%20variable%20is%20queried%20as%20a%20Wiki%20object%2C%20which%20is%20actually%20the%20URL%20for%20the%20Wiki%20content.%0A%23%20Therefore%2C%20to%20get%20a%20Human%20Readable%20result%2C%20we%20use%20the%20%27Service%20wikibase%3A%20label...%27%20command%0A%23%20This%20command%20will%20change%20the%20variables%20you%20create%20to%20a%20label%20if%20you%20add%20%27Label%27%20to%20the%20variable%20name%0A%23%20For%20instance%3A%20we%20define%20variable%20%27name%27%20as%20instance%20of%20comics%20character%2C%20to%20print%20the%20actual%20name%0A%23%20we%20will%20use%20nameLabel%20in%20the%20SELECT%20command.%20The%20same%20for%20gender%20-%3E%20genderLabel%0A%0A%23%20Try%20using%20each%20of%20the%20SELECT%20statements%20at%20a%20time.%20Click%20the%20%5B%3E%5D%20play%20button%20to%20run%20the%20code.%0A%23SELECT%20%3FnameLabel%20%3FgenderLabel%0ASELECT%20%3FnameLabel%20%3FgenderLabel%20%3FcitizenshipLabel%20%3FskillsLabel%20%3FoccupationLabel%20%3FmemberOfLabel%20%3FcreatorLabel%0A%0AWHERE%0A%7B%0A%09%3Fname%20wdt%3AP31%20wd%3AQ1114461%3B%20%23%20%3Fname%20%20%20%20instance%20of%20%20%20%20%20comics%20character%0A%20%20%20%20%20%20%20%20%20%20wdt%3AP1080%20wd%3AQ931597.%20%23%20%3Fname%20%20%20%20%0A%20%20%20%20%0A%20%20%20%20%3Fname%20wdt%3AP21%20%3Fgender.%0A%20%20%20%20%3Fname%20wdt%3AP27%20%3Fcitizenship.%0A%20%20%20%20%3Fname%20wdt%3AP2563%20%3Fskills.%0A%20%20%20%20%3Fname%20wdt%3AP106%20%3Foccupation.%0A%20%20%20%20%3Fname%20wdt%3AP463%20%3FmemberOf.%0A%20%20%20%20%3Fname%20wdt%3AP170%20%3Fcreator.%0A%20%20%0A%20%20SERVICE%20wikibase%3Alabel%20%7B%20bd%3AserviceParam%20wikibase%3Alanguage%20%22%5BAUTO_LANGUAGE%5D%22.%20%7D%0A%20%0A%7D%0AORDER%20BY%20%3FnameLabel%0A%0A%23GROUP%20BY%20%3FnameLabel%20%3FgenderLabel%20%3FcitizenshipLabel%20%3FskillsLabel%20%3FoccupationLabel%20%3FmemberOfLabel%20%3FcreatorLabel%0A%0A%0A%23%20After%20getting%20the%20result%20you%20expect%2C%20download%20in%20the%20format%20you%20prefer.%0A