

User Engagement Score



LIFERAY®

Measurement approach overview

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ELEFLOW

Big Data Analytics at Work

Objective

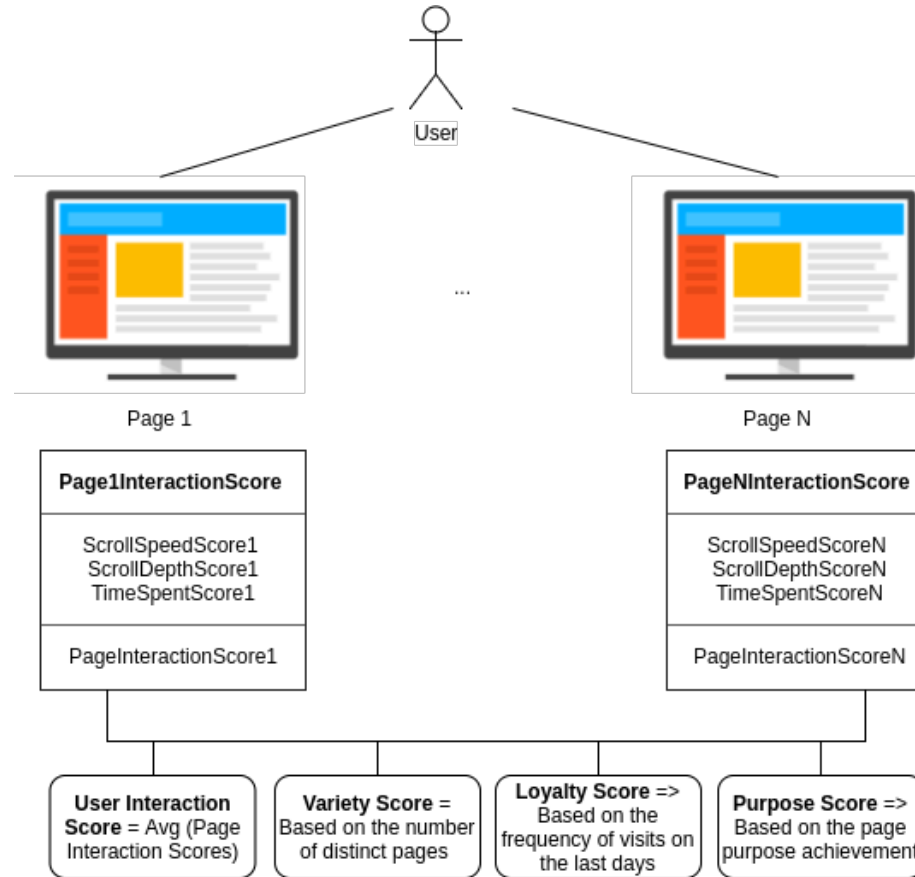
- To describe the initiative and approach our team is taking during the User Engagement Score calculation.

Concepts

- Definition
 - Session: group of interactions that an user executes in a set of pages so that the interval between two consecutive events is less than 30 minutes.

- The idea is to use a Math Formula
- User Engagement Score will be a composition of the following scores:
 - User Interaction Score: It's the average of the "Page Interaction Scores".
 - The "Page Interaction Score" is based on:
 - Scroll Speed
 - Scroll Depth
 - Time Spent on the page
 - Variety Score: It's a score based on the number of distinct pages that an user visits
 - Loyalty Score: It's a score based on the number of days that an user accessed a page in the last "n" days
 - Purpose Score: It's a score related to the purpose of the page. If the page has a form, the purpose is to fill it. If the page does not have a form, the purpose is to have a high "Page Interaction Score"

Math formula Rationale



Math formula Rationale (details)

Assignment of scores

- Scroll Speed:
 - Time to scroll
 - High time => High Engagement
 - Scroll Speed Score (between 0 and 1)
 - 0: 0 seconds
 - 1: high time to scroll (*at least 30 seconds*)
- Scroll Depth:
 - Depth reached on a page
 - High depth => High Engagement
 - Scroll Depth Score (between 0 and 1)
 - 0: 0% Depth
 - 1: 100% Depth

Math formula Rationale (details)

- Time Spent on a page:
 - High time => High Engagement
 - Time Spent Score(between 0 and 1)
 - 0: 0 seconds
 - 1: ***At least 10 minutes***

Math formula Rationale (details)

- Variety Score:
 - Number of distinct pages that an user visits in a given period
 - High number => High Engagement
 - Variety Score(between 0 and 1)
 - 0: 0 pages
 - 1: ***At least 4 distinct pages***
- Loyalty Score:
 - Number of days that an user access a page in the last ***10 days***
 - High number => High Engagement
 - Loyalty Score(between 0 and 1)
 - 0: 0 days
 - 1: ***At least 3 days***

Math formula Rationale (details)

- Purpose Score:
 - It reflects the page purpose achievement. If the page has a form, the purpose is to fill it. If the page does not have a form, the purpose is to have a high time spent, high max depth and a high time to scroll
 - High number => High Engagement
 - Purpose Score(between 0 and 1)
 - 0: Purpose not achieved
 - 1: Purpose totally achieved

Math formula Rationale (details)

About highlighted parameters in blue:

- The numbers were based on the statistics analysis of each attribute ('Scroll Speed', 'Time Spent' and 'Number of sessions')
- We can make these parameters configurable

Math formula Rationale (details)

- **Page Interaction Score =**
 - (Scroll Speed Score+Scroll Depth Score+Time Spent Score)/3
- **Interaction Score = avg (Page Interaction Scores)**
- **Purpose Score =**
 - if the page does not have a form:
 - Page Interaction Score
 - if the page has a form:
 - Number of pages with forms submitted/ Number of page with forms
- **User Engagement Score = (Interaction Score + Variety Score + Loyalty Score+Purpose Score)/4**

Math Formula Results

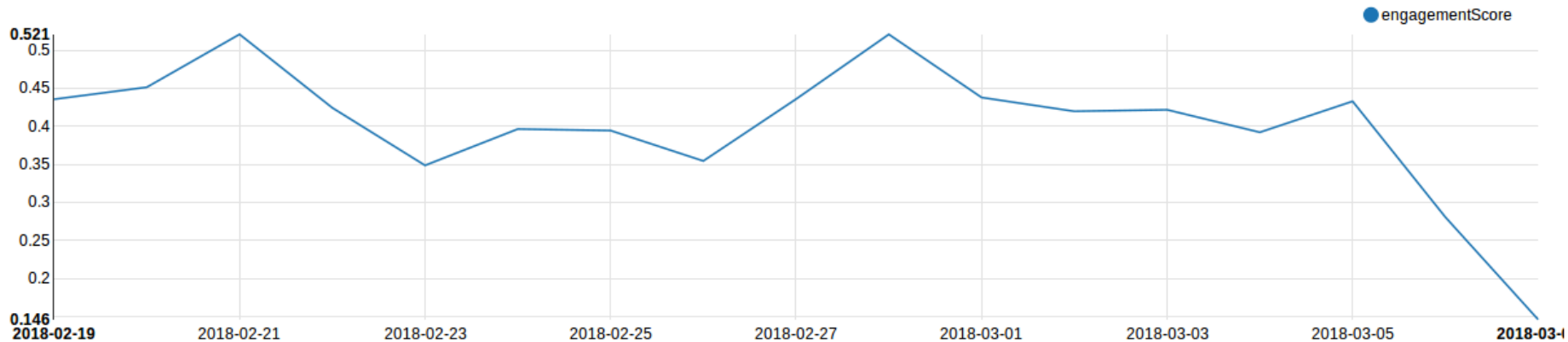
Period: 2018-02-19 to 2018-03-08 / Engagement Score Scale: 0.0 to 1.0

Rank	User	Average Engagement Score
1	AWEefnUjdfQksSyQcuY3	0,3785
2	AWDW1saJRQhVcGP_6WPg	0,3166
3	AWGMChnfUuLnA5cw4vEI	0,2933
4	AWDXWb-nRQhVcGP_6WZF	0,2853
5	AWG7Dz9UPsLLaUeD7iAC	0,2845
6	AWDbQ_mjRQhVcGP_6XLj	0,2818
7	AWDYVKOLRQhVcGP_6Wjs	0,2784
8	AWGZIHUuLnA5cw5SSy	0,2649

Math Formula Results

Period: 2018-02-19 to 2018-03-08 / Engagement Score Scale: 0.0 to 1.0

The most Engaged User: AWEefnUjdfQksSyQcuY3 - Daily Engagement Score



Math Formula Results

Period: 2018-02-19 to 2018-03-08 / Engagement Score Scale: 0.0 to 1.0

The most Engaged User: AWEefnUjdfQksSyQcuY3 - Facts

- Interaction: It's a user with a high interaction score (considering time spent, scroll depth, scroll speed)
- Variety: This user always access only 1 page by day
- Loyalty: It's a user with a high loyalty. He comes back everyday.
- Purpose: This user usually access a page that does not have a form. So the high interaction score translates into a high purpose score.

Next Steps

- Calculate and evaluate the scores and verify that it makes sense
- Get feedback from Liferay
- Make some adjustments
- Migrate to Java

[illegible]

Helena Valente: helena.valente@eleflow.com.br