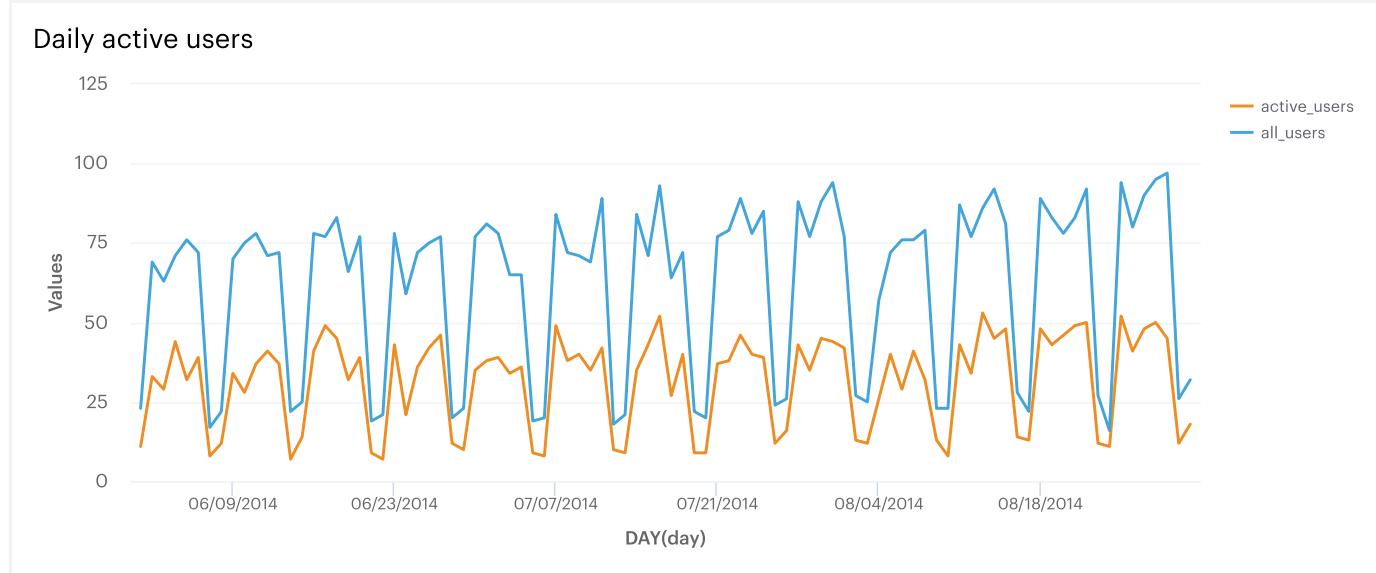
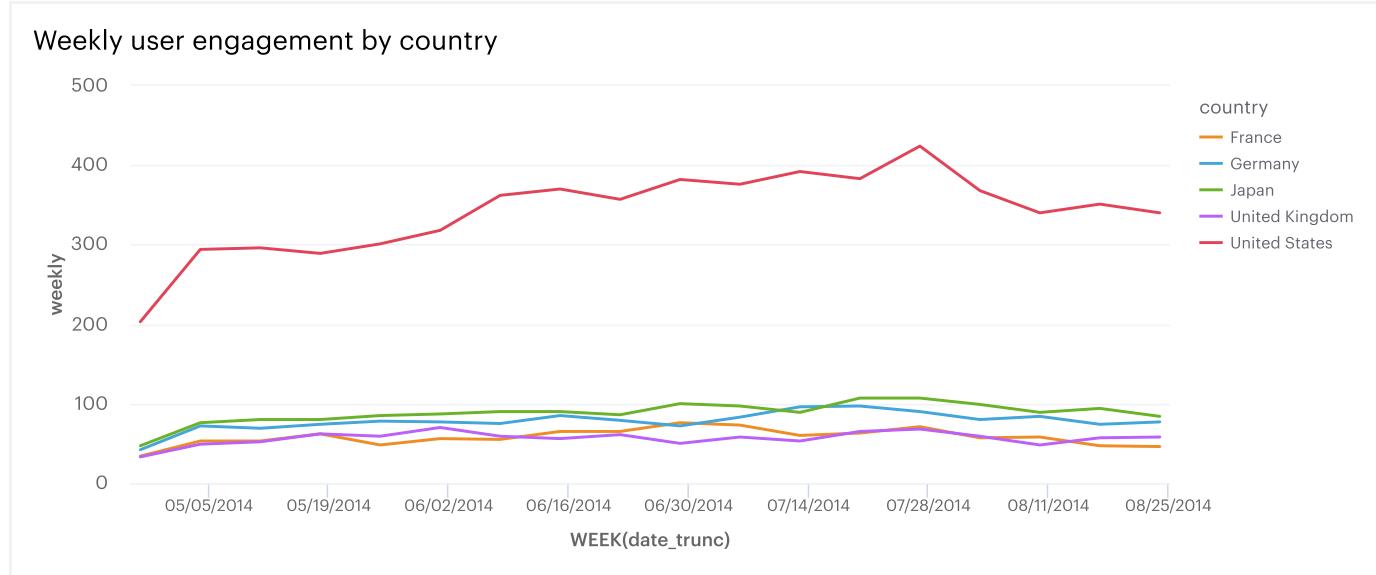


# Engagement study

First, we check the user activity on a daily basis to determine the overall dynamic in engagement. It is evident that users are not active on weekends because most companies have a standard weekday schedule. No anomalies were found in the overall dynamic.

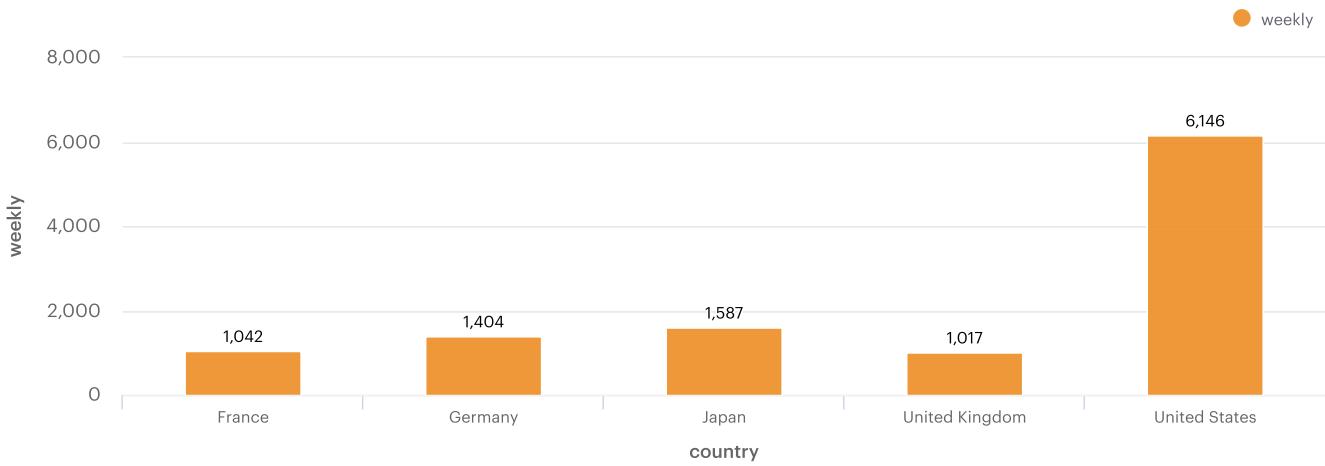


Next, we check if the decrease in engagement is country-specific which could be explained by extensive weekend disengagement. It is evident that the biggest drop in the engagement comes from US, Japan, and France.



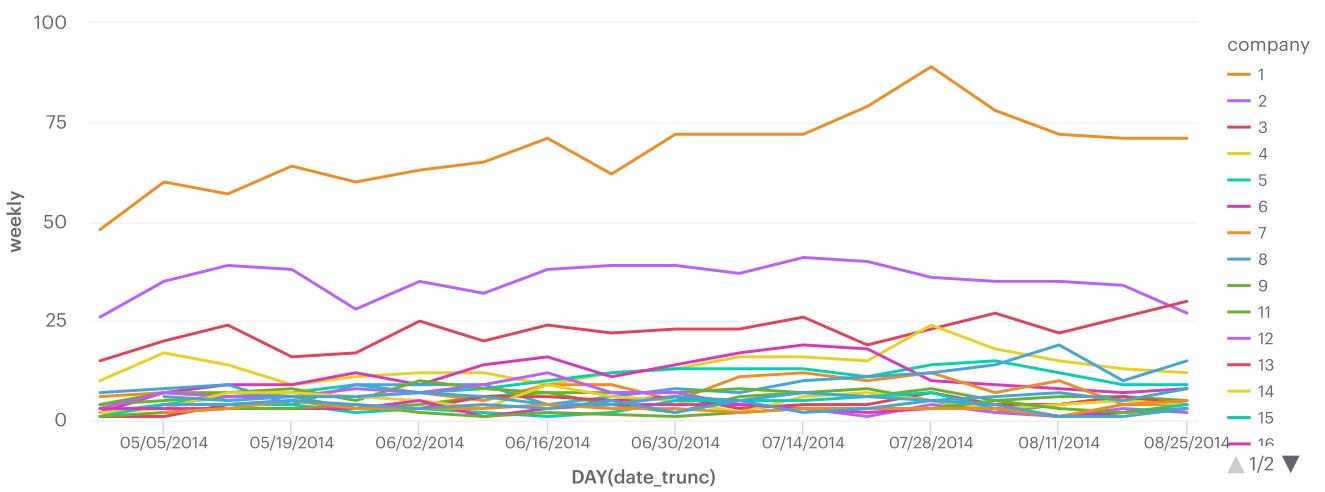
From a bar chart for user engagement by country, we can see that the most active users are from US which means that there might be some issue with the application performance there.

## Most active users by country



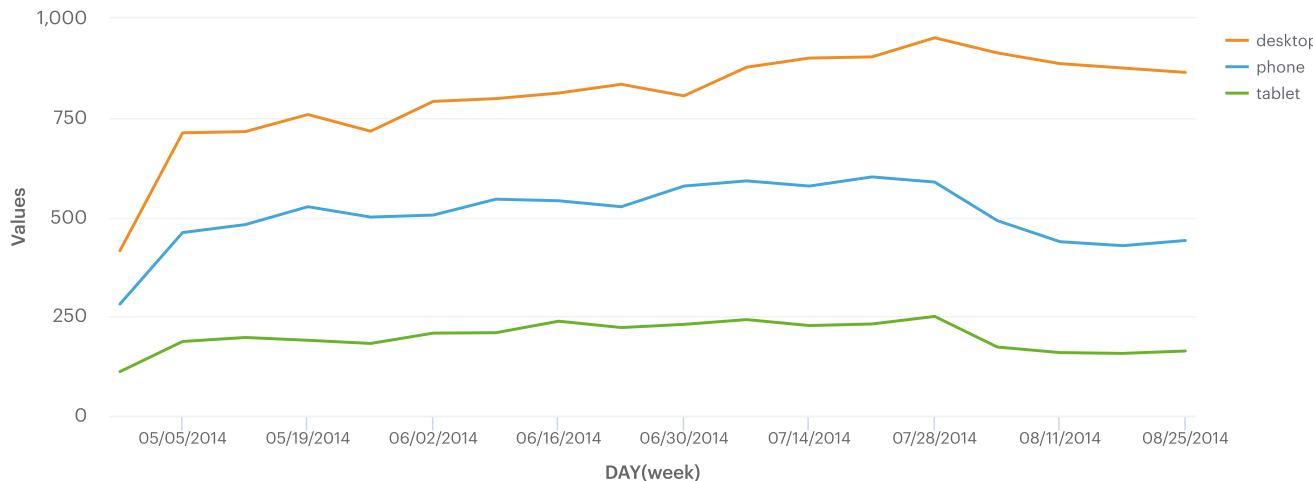
Next, we check if there is a decrease in the engagement from different companies. Unfortunately, company IDs do not provide any additional information, but we can see that company 1 had the highest rate of disengagement approximately at the same time as the drop in the overall engagement occurred.

## Most active companies by ID



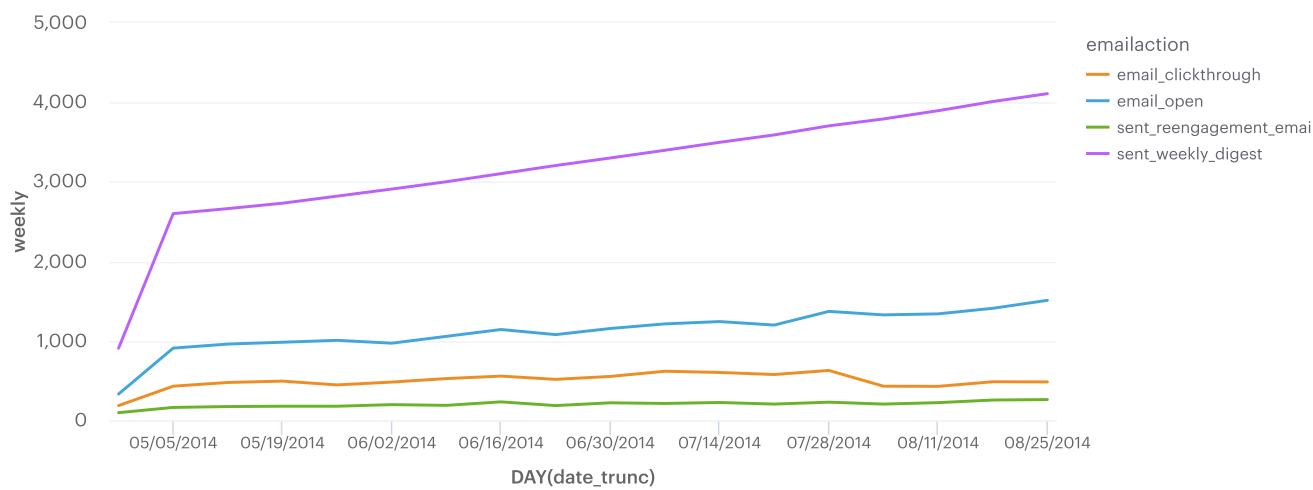
Now, we can check how engagement differs by device. It seems like the sharpest decrease in the engagement happened for phone users. Therefore, we can conclude that there might be an issue with the phone application.

## Engagement by device



After looking at the email related events, we can conclude that the email clickthroughs started going down at approximately the same time the overall engagement dropped.

## Email related events



**Conclusion:** the decrease in engagement can be attributed to a mobile app issue and digest emails. Furthermore, the US users can be checked for additional analysis as they represent the biggest contributors to the drop in engagement.

## Query 1

|   | day                 | all_users | active_users |
|---|---------------------|-----------|--------------|
| 1 | 2014-06-01 00:00:00 | 23        | 11           |
| 2 | 2014-06-02 00:00:00 | 69        | 33           |
| 3 | 2014-06-03 00:00:00 | 63        | 29           |
| 4 | 2014-06-04 00:00:00 | 71        | 44           |
| 5 | 2014-06-05 00:00:00 | 76        | 32           |
| 6 | 2014-06-06 00:00:00 | 72        | 39           |
| 7 | 2014-06-07 00:00:00 | 17        | 8            |
| 8 | 2014-06-08 00:00:00 | 22        | 12           |

|    |                     |    |    |
|----|---------------------|----|----|
| 9  | 2014-06-09 00:00:00 | 70 | 34 |
| 10 | 2014-06-10 00:00:00 | 75 | 28 |
| 11 | 2014-06-11 00:00:00 | 78 | 37 |
| 12 | 2014-06-12 00:00:00 | 71 | 41 |
| 13 | 2014-06-13 00:00:00 | 72 | 37 |
| 14 | 2014-06-14 00:00:00 | 22 | 7  |
| 15 | 2014-06-15 00:00:00 | 25 | 14 |
| 16 | 2014-06-16 00:00:00 | 78 | 41 |
| 17 | 2014-06-17 00:00:00 | 77 | 49 |
| 18 | 2014-06-18 00:00:00 | 83 | 45 |
| 19 | 2014-06-19 00:00:00 | 66 | 32 |
| 20 | 2014-06-20 00:00:00 | 77 | 39 |
| 21 | 2014-06-21 00:00:00 | 19 | 9  |
| 22 | 2014-06-22 00:00:00 | 21 | 7  |
| 23 | 2014-06-23 00:00:00 | 78 | 43 |
| 24 | 2014-06-24 00:00:00 | 59 | 21 |
| 25 | 2014-06-25 00:00:00 | 72 | 36 |
| 26 | 2014-06-26 00:00:00 | 75 | 42 |
| 27 | 2014-06-27 00:00:00 | 77 | 46 |
| 28 | 2014-06-28 00:00:00 | 20 | 12 |
| 29 | 2014-06-29 00:00:00 | 23 | 10 |
| 30 | 2014-06-30 00:00:00 | 77 | 35 |
|    |                     |    |    |
| 31 | 2014-07-01 00:00:00 | 81 | 38 |
| 32 | 2014-07-02 00:00:00 | 78 | 39 |
| 33 | 2014-07-03 00:00:00 | 65 | 34 |
| 34 | 2014-07-04 00:00:00 | 65 | 36 |
| 35 | 2014-07-05 00:00:00 | 19 | 9  |
| 36 | 2014-07-06 00:00:00 | 20 | 8  |
| 37 | 2014-07-07 00:00:00 | 84 | 49 |
| 38 | 2014-07-08 00:00:00 | 72 | 38 |
| 39 | 2014-07-09 00:00:00 | 71 | 40 |
| 40 | 2014-07-10 00:00:00 | 69 | 35 |
| 41 | 2014-07-11 00:00:00 | 89 | 42 |
| 42 | 2014-07-12 00:00:00 | 18 | 10 |
| 43 | 2014-07-13 00:00:00 | 21 | 9  |
| 44 | 2014-07-14 00:00:00 | 84 | 35 |
| 45 | 2014-07-15 00:00:00 | 71 | 43 |
| 46 | 2014-07-16 00:00:00 | 93 | 52 |
| 47 | 2014-07-17 00:00:00 | 64 | 27 |
| 48 | 2014-07-18 00:00:00 | 72 | 40 |
| 49 | 2014-07-19 00:00:00 | 22 | 9  |
| 50 | 2014-07-20 00:00:00 | 20 | 9  |
| 51 | 2014-07-21 00:00:00 | 77 | 37 |
| 52 | 2014-07-22 00:00:00 | 79 | 38 |
| 53 | 2014-07-23 00:00:00 | 89 | 46 |
|    |                     |    |    |

|    |                     |    |    |
|----|---------------------|----|----|
| 54 | 2014-07-24 00:00:00 | 78 | 40 |
| 55 | 2014-07-25 00:00:00 | 85 | 39 |
| 56 | 2014-07-26 00:00:00 | 24 | 12 |
| 57 | 2014-07-27 00:00:00 | 26 | 16 |
| 58 | 2014-07-28 00:00:00 | 88 | 43 |
| 59 | 2014-07-29 00:00:00 | 77 | 35 |
| 60 | 2014-07-30 00:00:00 | 88 | 45 |
| 61 | 2014-07-31 00:00:00 | 94 | 44 |
| 62 | 2014-08-01 00:00:00 | 77 | 42 |
| 63 | 2014-08-02 00:00:00 | 27 | 13 |
| 64 | 2014-08-03 00:00:00 | 25 | 12 |
| 65 | 2014-08-04 00:00:00 | 57 | 26 |
| 66 | 2014-08-05 00:00:00 | 72 | 40 |
| 67 | 2014-08-06 00:00:00 | 76 | 29 |
| 68 | 2014-08-07 00:00:00 | 76 | 41 |
| 69 | 2014-08-08 00:00:00 | 79 | 32 |
| 70 | 2014-08-09 00:00:00 | 23 | 13 |
| 71 | 2014-08-10 00:00:00 | 23 | 8  |
| 72 | 2014-08-11 00:00:00 | 87 | 43 |
| 73 | 2014-08-12 00:00:00 | 77 | 34 |
| 74 | 2014-08-13 00:00:00 | 86 | 53 |
| 75 | 2014-08-14 00:00:00 | 92 | 45 |
| 76 | 2014-08-15 00:00:00 | 81 | 48 |
| 77 | 2014-08-16 00:00:00 | 28 | 14 |
| 78 | 2014-08-17 00:00:00 | 22 | 13 |
| 79 | 2014-08-18 00:00:00 | 89 | 48 |
| 80 | 2014-08-19 00:00:00 | 83 | 43 |
| 81 | 2014-08-20 00:00:00 | 78 | 46 |
| 82 | 2014-08-21 00:00:00 | 83 | 49 |
| 83 | 2014-08-22 00:00:00 | 92 | 50 |
| 84 | 2014-08-23 00:00:00 | 27 | 12 |
| 85 | 2014-08-24 00:00:00 | 16 | 11 |
| 86 | 2014-08-25 00:00:00 | 94 | 52 |
| 87 | 2014-08-26 00:00:00 | 80 | 41 |
| 88 | 2014-08-27 00:00:00 | 90 | 48 |
| 89 | 2014-08-28 00:00:00 | 95 | 50 |
| 90 | 2014-08-29 00:00:00 | 97 | 45 |
| 91 | 2014-08-30 00:00:00 | 26 | 12 |
| 92 | 2014-08-31 00:00:00 | 22 | 18 |

## Query 2

|   | date_trunc          | weekly | country       |
|---|---------------------|--------|---------------|
| 1 | 2014-04-28 00:00:00 | 203    | United States |
| 2 | 2014-04-28 00:00:00 | 47     | Japan         |
| 3 | 2014-04-28 00:00:00 | 42     | Germany       |
| 4 | 2014-04-28 00:00:00 | 34     | France        |

|    |                     |     |                |
|----|---------------------|-----|----------------|
| 5  | 2014-04-28 00:00:00 | 33  | United Kingdom |
| 6  | 2014-05-05 00:00:00 | 294 | United States  |
| 7  | 2014-05-05 00:00:00 | 76  | Japan          |
| 8  | 2014-05-05 00:00:00 | 72  | Germany        |
| 9  | 2014-05-05 00:00:00 | 53  | France         |
| 10 | 2014-05-05 00:00:00 | 49  | United Kingdom |
| 11 | 2014-05-12 00:00:00 | 296 | United States  |
| 12 | 2014-05-12 00:00:00 | 80  | Japan          |
| 13 | 2014-05-12 00:00:00 | 69  | Germany        |
| 14 | 2014-05-12 00:00:00 | 53  | France         |
| 15 | 2014-05-12 00:00:00 | 52  | United Kingdom |
| 16 | 2014-05-19 00:00:00 | 289 | United States  |
| 17 | 2014-05-19 00:00:00 | 80  | Japan          |
| 18 | 2014-05-19 00:00:00 | 74  | Germany        |
| 19 | 2014-05-19 00:00:00 | 62  | France         |
| 20 | 2014-05-19 00:00:00 | 62  | United Kingdom |
| 21 | 2014-05-26 00:00:00 | 301 | United States  |
| 22 | 2014-05-26 00:00:00 | 85  | Japan          |
| 23 | 2014-05-26 00:00:00 | 78  | Germany        |
| 24 | 2014-05-26 00:00:00 | 59  | United Kingdom |
| 25 | 2014-05-26 00:00:00 | 48  | France         |
| 26 | 2014-06-02 00:00:00 | 318 | United States  |
| 27 | 2014-06-02 00:00:00 | 87  | Japan          |
| 28 | 2014-06-02 00:00:00 | 77  | Germany        |
| 29 | 2014-06-02 00:00:00 | 70  | United Kingdom |
| 30 | 2014-06-02 00:00:00 | 56  | France         |
| 31 | 2014-06-09 00:00:00 | 362 | United States  |
| 32 | 2014-06-09 00:00:00 | 90  | Japan          |
| 33 | 2014-06-09 00:00:00 | 75  | Germany        |
| 34 | 2014-06-09 00:00:00 | 59  | United Kingdom |
| 35 | 2014-06-09 00:00:00 | 55  | France         |
| 36 | 2014-06-16 00:00:00 | 370 | United States  |
| 37 | 2014-06-16 00:00:00 | 90  | Japan          |
| 38 | 2014-06-16 00:00:00 | 85  | Germany        |
| 39 | 2014-06-16 00:00:00 | 65  | France         |
| 40 | 2014-06-16 00:00:00 | 56  | United Kingdom |
| 41 | 2014-06-23 00:00:00 | 357 | United States  |
| 42 | 2014-06-23 00:00:00 | 86  | Japan          |
| 43 | 2014-06-23 00:00:00 | 79  | Germany        |
| 44 | 2014-06-23 00:00:00 | 65  | France         |
| 45 | 2014-06-23 00:00:00 | 61  | United Kingdom |
| 46 | 2014-06-30 00:00:00 | 382 | United States  |
| 47 | 2014-06-30 00:00:00 | 100 | Japan          |
| 48 | 2014-06-30 00:00:00 | 76  | France         |
| 49 | 2014-06-30 00:00:00 | 72  | Germany        |
| 50 | 2014-06-30 00:00:00 | 50  | United Kingdom |

|    |                     |     |                |
|----|---------------------|-----|----------------|
| 51 | 2014-07-07 00:00:00 | 376 | United States  |
| 52 | 2014-07-07 00:00:00 | 97  | Japan          |
| 53 | 2014-07-07 00:00:00 | 83  | Germany        |
| 54 | 2014-07-07 00:00:00 | 73  | France         |
| 55 | 2014-07-07 00:00:00 | 58  | United Kingdom |
| 56 | 2014-07-14 00:00:00 | 392 | United States  |
| 57 | 2014-07-14 00:00:00 | 96  | Germany        |
| 58 | 2014-07-14 00:00:00 | 89  | Japan          |
| 59 | 2014-07-14 00:00:00 | 60  | France         |
| 60 | 2014-07-14 00:00:00 | 53  | United Kingdom |
| 61 | 2014-07-21 00:00:00 | 383 | United States  |
| 62 | 2014-07-21 00:00:00 | 107 | Japan          |
| 63 | 2014-07-21 00:00:00 | 97  | Germany        |
| 64 | 2014-07-21 00:00:00 | 65  | United Kingdom |
| 65 | 2014-07-21 00:00:00 | 63  | France         |
| 66 | 2014-07-28 00:00:00 | 424 | United States  |
| 67 | 2014-07-28 00:00:00 | 107 | Japan          |
| 68 | 2014-07-28 00:00:00 | 90  | Germany        |
| 69 | 2014-07-28 00:00:00 | 71  | France         |
| 70 | 2014-07-28 00:00:00 | 68  | United Kingdom |
| 71 | 2014-08-04 00:00:00 | 368 | United States  |
| 72 | 2014-08-04 00:00:00 | 99  | Japan          |
| 73 | 2014-08-04 00:00:00 | 80  | Germany        |
| 74 | 2014-08-04 00:00:00 | 59  | United Kingdom |
| 75 | 2014-08-04 00:00:00 | 57  | France         |
| 76 | 2014-08-11 00:00:00 | 340 | United States  |
| 77 | 2014-08-11 00:00:00 | 89  | Japan          |
| 78 | 2014-08-11 00:00:00 | 84  | Germany        |
| 79 | 2014-08-11 00:00:00 | 58  | France         |
| 80 | 2014-08-11 00:00:00 | 48  | United Kingdom |
| 81 | 2014-08-18 00:00:00 | 351 | United States  |
| 82 | 2014-08-18 00:00:00 | 94  | Japan          |
| 83 | 2014-08-18 00:00:00 | 74  | Germany        |
| 84 | 2014-08-18 00:00:00 | 57  | United Kingdom |
| 85 | 2014-08-18 00:00:00 | 47  | France         |
| 86 | 2014-08-25 00:00:00 | 340 | United States  |
| 87 | 2014-08-25 00:00:00 | 84  | Japan          |
| 88 | 2014-08-25 00:00:00 | 77  | Germany        |
| 89 | 2014-08-25 00:00:00 | 58  | United Kingdom |
| 90 | 2014-08-25 00:00:00 | 16  | France         |

### Query 3

|   | date_trunc          | weekly | company |   |
|---|---------------------|--------|---------|---|
| 1 | 2014-04-28 00:00:00 | 48     |         | 1 |
| 2 | 2014-04-28 00:00:00 | 26     |         | 2 |
| 3 | 2014-04-28 00:00:00 | 15     |         | 3 |
| 4 | 2014-04-28 00:00:00 | 10     |         | 4 |

|    |                     |  |    |    |
|----|---------------------|--|----|----|
| 5  | 2014-04-28 00:00:00 |  | 2  | 5  |
| 6  | 2014-04-28 00:00:00 |  | 2  | 6  |
| 7  | 2014-04-28 00:00:00 |  | 6  | 7  |
| 8  | 2014-04-28 00:00:00 |  | 7  | 8  |
| 9  | 2014-04-28 00:00:00 |  | 4  | 9  |
| 10 | 2014-04-28 00:00:00 |  | 4  | 11 |
| 11 | 2014-04-28 00:00:00 |  | 3  | 12 |
| 12 | 2014-04-28 00:00:00 |  | 1  | 13 |
| 13 | 2014-04-28 00:00:00 |  | 2  | 14 |
| 14 | 2014-04-28 00:00:00 |  | 1  | 15 |
| 15 | 2014-04-28 00:00:00 |  | 3  | 16 |
| 16 | 2014-04-28 00:00:00 |  | 1  | 19 |
| 17 | 2014-05-05 00:00:00 |  | 60 | 1  |
| 18 | 2014-05-05 00:00:00 |  | 35 | 2  |
| 19 | 2014-05-05 00:00:00 |  | 20 | 3  |
| 20 | 2014-05-05 00:00:00 |  | 17 | 4  |
| 21 | 2014-05-05 00:00:00 |  | 4  | 5  |
| 22 | 2014-05-05 00:00:00 |  | 7  | 6  |
| 23 | 2014-05-05 00:00:00 |  | 7  | 7  |
| 24 | 2014-05-05 00:00:00 |  | 8  | 8  |
| 25 | 2014-05-05 00:00:00 |  | 7  | 9  |
| 26 | 2014-05-05 00:00:00 |  | 6  | 10 |
| 27 | 2014-05-05 00:00:00 |  | 5  | 11 |
| 28 | 2014-05-05 00:00:00 |  | 7  | 12 |
| 29 | 2014-05-05 00:00:00 |  | 1  | 13 |
| 30 | 2014-05-05 00:00:00 |  | 3  | 14 |
| 31 | 2014-05-05 00:00:00 |  | 4  | 15 |
| 32 | 2014-05-05 00:00:00 |  | 3  | 16 |
| 33 | 2014-05-05 00:00:00 |  | 2  | 17 |
| 34 | 2014-05-05 00:00:00 |  | 4  | 18 |
| 35 | 2014-05-05 00:00:00 |  | 2  | 19 |
| 36 | 2014-05-12 00:00:00 |  | 57 | 1  |
| 37 | 2014-05-12 00:00:00 |  | 39 | 2  |
| 38 | 2014-05-12 00:00:00 |  | 24 | 3  |
| 39 | 2014-05-12 00:00:00 |  | 14 | 4  |
| 40 | 2014-05-12 00:00:00 |  | 6  | 5  |
| 41 | 2014-05-12 00:00:00 |  | 9  | 6  |
| 42 | 2014-05-12 00:00:00 |  | 6  | 7  |
| 43 | 2014-05-12 00:00:00 |  | 9  | 8  |
| 44 | 2014-05-12 00:00:00 |  | 7  | 9  |
| 45 | 2014-05-12 00:00:00 |  | 5  | 10 |
| 46 | 2014-05-12 00:00:00 |  | 6  | 11 |
| 47 | 2014-05-12 00:00:00 |  | 6  | 12 |
| 48 | 2014-05-12 00:00:00 |  | 4  | 13 |
| 49 | 2014-05-12 00:00:00 |  | 7  | 14 |
| 50 | 2014-05-12 00:00:00 |  | 4  | 15 |

|    |                     |  |    |    |
|----|---------------------|--|----|----|
| 51 | 2014-05-12 00:00:00 |  | 3  | 16 |
| 52 | 2014-05-12 00:00:00 |  | 3  | 17 |
| 53 | 2014-05-12 00:00:00 |  | 4  | 18 |
| 54 | 2014-05-12 00:00:00 |  | 3  | 19 |
| 55 | 2014-05-19 00:00:00 |  | 64 | 1  |
| 56 | 2014-05-19 00:00:00 |  | 38 | 2  |
| 57 | 2014-05-19 00:00:00 |  | 16 | 3  |
| 58 | 2014-05-19 00:00:00 |  | 9  | 4  |
| 59 | 2014-05-19 00:00:00 |  | 7  | 5  |
| 60 | 2014-05-19 00:00:00 |  | 9  | 6  |
| 61 | 2014-05-19 00:00:00 |  | 6  | 7  |
| 62 | 2014-05-19 00:00:00 |  | 4  | 8  |
| 63 | 2014-05-19 00:00:00 |  | 8  | 9  |
| 64 | 2014-05-19 00:00:00 |  | 6  | 10 |
| 65 | 2014-05-19 00:00:00 |  | 6  | 11 |
| 66 | 2014-05-19 00:00:00 |  | 6  | 12 |
| 67 | 2014-05-19 00:00:00 |  | 5  | 13 |
| 68 | 2014-05-19 00:00:00 |  | 7  | 14 |
| 69 | 2014-05-19 00:00:00 |  | 4  | 15 |
| 70 | 2014-05-19 00:00:00 |  | 3  | 16 |
| 71 | 2014-05-19 00:00:00 |  | 5  | 17 |
| 72 | 2014-05-19 00:00:00 |  | 5  | 18 |
| 73 | 2014-05-19 00:00:00 |  | 3  | 19 |
| 74 | 2014-05-26 00:00:00 |  | 60 | 1  |
| 75 | 2014-05-26 00:00:00 |  | 28 | 2  |
| 76 | 2014-05-26 00:00:00 |  | 17 | 3  |
| 77 | 2014-05-26 00:00:00 |  | 11 | 4  |
| 78 | 2014-05-26 00:00:00 |  | 9  | 5  |
| 79 | 2014-05-26 00:00:00 |  | 12 | 6  |
| 80 | 2014-05-26 00:00:00 |  | 6  | 7  |
| 81 | 2014-05-26 00:00:00 |  | 9  | 8  |
| 82 | 2014-05-26 00:00:00 |  | 5  | 9  |
| 83 | 2014-05-26 00:00:00 |  | 6  | 10 |
| 84 | 2014-05-26 00:00:00 |  | 3  | 11 |
| 85 | 2014-05-26 00:00:00 |  | 8  | 12 |
| 86 | 2014-05-26 00:00:00 |  | 3  | 13 |
| 87 | 2014-05-26 00:00:00 |  | 6  | 14 |
| 88 | 2014-05-26 00:00:00 |  | 2  | 15 |
| 89 | 2014-05-26 00:00:00 |  | 3  | 16 |
| 90 | 2014-05-26 00:00:00 |  | 3  | 17 |
| 91 | 2014-05-26 00:00:00 |  | 4  | 18 |
| 92 | 2014-05-26 00:00:00 |  | 4  | 19 |
| 93 | 2014-06-02 00:00:00 |  | 63 | 1  |
| 94 | 2014-06-02 00:00:00 |  | 35 | 2  |
| 95 | 2014-06-02 00:00:00 |  | 25 | 3  |

|     |                     |  |    |    |
|-----|---------------------|--|----|----|
| 96  | 2014-06-02 00:00:00 |  | 12 | 4  |
| 97  | 2014-06-02 00:00:00 |  | 7  | 5  |
| 98  | 2014-06-02 00:00:00 |  | 9  | 6  |
| 99  | 2014-06-02 00:00:00 |  | 7  | 7  |
| 100 | 2014-06-02 00:00:00 |  | 9  | 8  |
| 101 | 2014-06-02 00:00:00 |  | 10 | 9  |
| 102 | 2014-06-02 00:00:00 |  | 7  | 10 |
| 103 | 2014-06-02 00:00:00 |  | 4  | 11 |
| 104 | 2014-06-02 00:00:00 |  | 7  | 12 |
| 105 | 2014-06-02 00:00:00 |  | 3  | 13 |
| 106 | 2014-06-02 00:00:00 |  | 5  | 14 |
| 107 | 2014-06-02 00:00:00 |  | 3  | 15 |
| 108 | 2014-06-02 00:00:00 |  | 5  | 16 |
| 109 | 2014-06-02 00:00:00 |  | 3  | 17 |
| 110 | 2014-06-02 00:00:00 |  | 3  | 18 |
| 111 | 2014-06-02 00:00:00 |  | 2  | 19 |
| 112 | 2014-06-09 00:00:00 |  | 65 | 1  |
| 113 | 2014-06-09 00:00:00 |  | 32 | 2  |
| 114 | 2014-06-09 00:00:00 |  | 20 | 3  |
| 115 | 2014-06-09 00:00:00 |  | 12 | 4  |
| 116 | 2014-06-09 00:00:00 |  | 8  | 5  |
| 117 | 2014-06-09 00:00:00 |  | 14 | 6  |
| 118 | 2014-06-09 00:00:00 |  | 5  | 7  |
| 119 | 2014-06-09 00:00:00 |  | 9  | 8  |
| 120 | 2014-06-09 00:00:00 |  | 8  | 9  |
| 121 | 2014-06-09 00:00:00 |  | 6  | 10 |
| 122 | 2014-06-09 00:00:00 |  | 6  | 11 |
| 123 | 2014-06-09 00:00:00 |  | 9  | 12 |
| 124 | 2014-06-09 00:00:00 |  | 6  | 13 |
| 125 | 2014-06-09 00:00:00 |  | 3  | 14 |
| 126 | 2014-06-09 00:00:00 |  | 2  | 15 |
| 127 | 2014-06-09 00:00:00 |  | 1  | 16 |
| 128 | 2014-06-09 00:00:00 |  | 3  | 17 |
| 129 | 2014-06-09 00:00:00 |  | 4  | 18 |
| 130 | 2014-06-09 00:00:00 |  | 1  | 19 |
| 131 | 2014-06-16 00:00:00 |  | 71 | 1  |
| 132 | 2014-06-16 00:00:00 |  | 38 | 2  |
| 133 | 2014-06-16 00:00:00 |  | 24 | 3  |
| 134 | 2014-06-16 00:00:00 |  | 9  | 4  |
| 135 | 2014-06-16 00:00:00 |  | 10 | 5  |
| 136 | 2014-06-16 00:00:00 |  | 16 | 6  |
| 137 | 2014-06-16 00:00:00 |  | 9  | 7  |
| 138 | 2014-06-16 00:00:00 |  | 4  | 8  |
| 139 | 2014-06-16 00:00:00 |  | 7  | 9  |
| 140 | 2014-06-16 00:00:00 |  | 4  | 10 |
| 141 | 2014-06-16 00:00:00 |  | 7  | 11 |

|     |                     |  |    |  |    |
|-----|---------------------|--|----|--|----|
| 142 | 2014-06-16 00:00:00 |  | 12 |  | 12 |
| 143 | 2014-06-16 00:00:00 |  | 6  |  | 13 |
| 144 | 2014-06-16 00:00:00 |  | 9  |  | 14 |
| 145 | 2014-06-16 00:00:00 |  | 1  |  | 15 |
| 146 | 2014-06-16 00:00:00 |  | 3  |  | 16 |
| 147 | 2014-06-16 00:00:00 |  | 4  |  | 17 |
| 148 | 2014-06-16 00:00:00 |  | 3  |  | 18 |
| 149 | 2014-06-16 00:00:00 |  | 2  |  | 19 |
| 150 | 2014-06-23 00:00:00 |  | 62 |  | 1  |
| 151 | 2014-06-23 00:00:00 |  | 39 |  | 2  |
| 152 | 2014-06-23 00:00:00 |  | 22 |  | 3  |
| 153 | 2014-06-23 00:00:00 |  | 12 |  | 4  |
| 154 | 2014-06-23 00:00:00 |  | 12 |  | 5  |
| 155 | 2014-06-23 00:00:00 |  | 11 |  | 6  |
| 156 | 2014-06-23 00:00:00 |  | 9  |  | 7  |
| 157 | 2014-06-23 00:00:00 |  | 6  |  | 8  |
| 158 | 2014-06-23 00:00:00 |  | 7  |  | 9  |
| 159 | 2014-06-23 00:00:00 |  | 4  |  | 10 |
| 160 | 2014-06-23 00:00:00 |  | 4  |  | 11 |
| 161 | 2014-06-23 00:00:00 |  | 7  |  | 12 |
| 162 | 2014-06-23 00:00:00 |  | 5  |  | 13 |
| 163 | 2014-06-23 00:00:00 |  | 6  |  | 14 |
| 164 | 2014-06-23 00:00:00 |  | 2  |  | 15 |
| 165 | 2014-06-23 00:00:00 |  | 4  |  | 16 |
| 166 | 2014-06-23 00:00:00 |  | 3  |  | 17 |
| 167 | 2014-06-23 00:00:00 |  | 5  |  | 18 |
| 168 | 2014-06-30 00:00:00 |  | 72 |  | 1  |
| 169 | 2014-06-30 00:00:00 |  | 39 |  | 2  |
| 170 | 2014-06-30 00:00:00 |  | 23 |  | 3  |
| 171 | 2014-06-30 00:00:00 |  | 13 |  | 4  |
| 172 | 2014-06-30 00:00:00 |  | 13 |  | 5  |
| 173 | 2014-06-30 00:00:00 |  | 14 |  | 6  |
| 174 | 2014-06-30 00:00:00 |  | 5  |  | 7  |
| 175 | 2014-06-30 00:00:00 |  | 8  |  | 8  |
| 176 | 2014-06-30 00:00:00 |  | 7  |  | 9  |
| 177 | 2014-06-30 00:00:00 |  | 6  |  | 10 |
| 178 | 2014-06-30 00:00:00 |  | 2  |  | 11 |
| 179 | 2014-06-30 00:00:00 |  | 7  |  | 12 |
| 180 | 2014-06-30 00:00:00 |  | 6  |  | 13 |
| 181 | 2014-06-30 00:00:00 |  | 5  |  | 14 |
| 182 | 2014-06-30 00:00:00 |  | 5  |  | 15 |
| 183 | 2014-06-30 00:00:00 |  | 4  |  | 16 |
| 184 | 2014-06-30 00:00:00 |  | 3  |  | 17 |
| 185 | 2014-06-30 00:00:00 |  | 2  |  | 18 |
| 186 | 2014-06-30 00:00:00 |  | 1  |  | 19 |

|     |                     |  |    |    |
|-----|---------------------|--|----|----|
| 187 | 2014-07-07 00:00:00 |  | 72 | 1  |
| 188 | 2014-07-07 00:00:00 |  | 37 | 2  |
| 189 | 2014-07-07 00:00:00 |  | 23 | 3  |
| 190 | 2014-07-07 00:00:00 |  | 16 | 4  |
| 191 | 2014-07-07 00:00:00 |  | 13 | 5  |
| 192 | 2014-07-07 00:00:00 |  | 17 | 6  |
| 193 | 2014-07-07 00:00:00 |  | 11 | 7  |
| 194 | 2014-07-07 00:00:00 |  | 7  | 8  |
| 195 | 2014-07-07 00:00:00 |  | 8  | 9  |
| 196 | 2014-07-07 00:00:00 |  | 5  | 10 |
| 197 | 2014-07-07 00:00:00 |  | 6  | 11 |
| 198 | 2014-07-07 00:00:00 |  | 4  | 12 |
| 199 | 2014-07-07 00:00:00 |  | 3  | 13 |
| 200 | 2014-07-07 00:00:00 |  | 2  | 14 |
| 201 | 2014-07-07 00:00:00 |  | 5  | 15 |
| 202 | 2014-07-07 00:00:00 |  | 4  | 16 |
| 203 | 2014-07-07 00:00:00 |  | 2  | 17 |
| 204 | 2014-07-07 00:00:00 |  | 5  | 18 |
| 205 | 2014-07-14 00:00:00 |  | 72 | 1  |
| 206 | 2014-07-14 00:00:00 |  | 41 | 2  |
| 207 | 2014-07-14 00:00:00 |  | 26 | 3  |
| 208 | 2014-07-14 00:00:00 |  | 16 | 4  |
| 209 | 2014-07-14 00:00:00 |  | 13 | 5  |
| 210 | 2014-07-14 00:00:00 |  | 19 | 6  |
| 211 | 2014-07-14 00:00:00 |  | 12 | 7  |
| 212 | 2014-07-14 00:00:00 |  | 10 | 8  |
| 213 | 2014-07-14 00:00:00 |  | 7  | 9  |
| 214 | 2014-07-14 00:00:00 |  | 7  | 10 |
| 215 | 2014-07-14 00:00:00 |  | 7  | 11 |
| 216 | 2014-07-14 00:00:00 |  | 3  | 12 |
| 217 | 2014-07-14 00:00:00 |  | 4  | 13 |
| 218 | 2014-07-14 00:00:00 |  | 6  | 14 |
| 219 | 2014-07-14 00:00:00 |  | 5  | 15 |
| 220 | 2014-07-14 00:00:00 |  | 3  | 16 |
| 221 | 2014-07-14 00:00:00 |  | 3  | 17 |
| 222 | 2014-07-14 00:00:00 |  | 2  | 18 |
| 223 | 2014-07-14 00:00:00 |  | 3  | 19 |
| 224 | 2014-07-21 00:00:00 |  | 79 | 1  |
| 225 | 2014-07-21 00:00:00 |  | 40 | 2  |
| 226 | 2014-07-21 00:00:00 |  | 19 | 3  |
| 227 | 2014-07-21 00:00:00 |  | 15 | 4  |
| 228 | 2014-07-21 00:00:00 |  | 11 | 5  |
| 229 | 2014-07-21 00:00:00 |  | 18 | 6  |
| 230 | 2014-07-21 00:00:00 |  | 10 | 7  |
| 231 | 2014-07-21 00:00:00 |  | 11 | 8  |
| 232 | 2014-07-21 00:00:00 |  | 6  | 9  |

|     |                     |  |    |    |
|-----|---------------------|--|----|----|
| 233 | 2014-07-21 00:00:00 |  | 6  | 10 |
| 234 | 2014-07-21 00:00:00 |  | 8  | 11 |
| 235 | 2014-07-21 00:00:00 |  | 1  | 12 |
| 236 | 2014-07-21 00:00:00 |  | 4  | 13 |
| 237 | 2014-07-21 00:00:00 |  | 7  | 14 |
| 238 | 2014-07-21 00:00:00 |  | 6  | 15 |
| 239 | 2014-07-21 00:00:00 |  | 2  | 16 |
| 240 | 2014-07-21 00:00:00 |  | 3  | 17 |
| 241 | 2014-07-21 00:00:00 |  | 3  | 18 |
| 242 | 2014-07-21 00:00:00 |  | 3  | 19 |
| 243 | 2014-07-28 00:00:00 |  | 89 | 1  |
| 244 | 2014-07-28 00:00:00 |  | 36 | 2  |
| 245 | 2014-07-28 00:00:00 |  | 23 | 3  |
| 246 | 2014-07-28 00:00:00 |  | 24 | 4  |
| 247 | 2014-07-28 00:00:00 |  | 14 | 5  |
| 248 | 2014-07-28 00:00:00 |  | 10 | 6  |
| 249 | 2014-07-28 00:00:00 |  | 12 | 7  |
| 250 | 2014-07-28 00:00:00 |  | 12 | 8  |
| 251 | 2014-07-28 00:00:00 |  | 8  | 9  |
| 252 | 2014-07-28 00:00:00 |  | 5  | 10 |
| 253 | 2014-07-28 00:00:00 |  | 5  | 11 |
| 254 | 2014-07-28 00:00:00 |  | 4  | 12 |
| 255 | 2014-07-28 00:00:00 |  | 7  | 13 |
| 256 | 2014-07-28 00:00:00 |  | 5  | 14 |
| 257 | 2014-07-28 00:00:00 |  | 7  | 15 |
| 258 | 2014-07-28 00:00:00 |  | 3  | 16 |
| 259 | 2014-07-28 00:00:00 |  | 3  | 17 |
| 260 | 2014-07-28 00:00:00 |  | 5  | 18 |
| 261 | 2014-07-28 00:00:00 |  | 3  | 19 |
| 262 | 2014-08-04 00:00:00 |  | 78 | 1  |
| 263 | 2014-08-04 00:00:00 |  | 35 | 2  |
| 264 | 2014-08-04 00:00:00 |  | 27 | 3  |
| 265 | 2014-08-04 00:00:00 |  | 18 | 4  |
| 266 | 2014-08-04 00:00:00 |  | 15 | 5  |
| 267 | 2014-08-04 00:00:00 |  | 9  | 6  |
| 268 | 2014-08-04 00:00:00 |  | 7  | 7  |
| 269 | 2014-08-04 00:00:00 |  | 14 | 8  |
| 270 | 2014-08-04 00:00:00 |  | 5  | 9  |
| 271 | 2014-08-04 00:00:00 |  | 6  | 10 |
| 272 | 2014-08-04 00:00:00 |  | 2  | 11 |
| 273 | 2014-08-04 00:00:00 |  | 2  | 12 |
| 274 | 2014-08-04 00:00:00 |  | 4  | 13 |
| 275 | 2014-08-04 00:00:00 |  | 3  | 14 |
| 276 | 2014-08-04 00:00:00 |  | 3  | 15 |
| 277 | 2014-08-04 00:00:00 |  | 3  | 16 |
| 278 | 2014-08-04 00:00:00 |  | 3  | 17 |

|     |                     |  |    |    |
|-----|---------------------|--|----|----|
| 279 | 2014-08-04 00:00:00 |  | 4  | 18 |
| 280 | 2014-08-04 00:00:00 |  | 5  | 19 |
| 281 | 2014-08-11 00:00:00 |  | 72 | 1  |
| 282 | 2014-08-11 00:00:00 |  | 35 | 2  |
| 283 | 2014-08-11 00:00:00 |  | 22 | 3  |
| 284 | 2014-08-11 00:00:00 |  | 15 | 4  |
| 285 | 2014-08-11 00:00:00 |  | 12 | 5  |
| 286 | 2014-08-11 00:00:00 |  | 8  | 6  |
| 287 | 2014-08-11 00:00:00 |  | 10 | 7  |
| 288 | 2014-08-11 00:00:00 |  | 19 | 8  |
| 289 | 2014-08-11 00:00:00 |  | 6  | 9  |
| 290 | 2014-08-11 00:00:00 |  | 7  | 10 |
| 291 | 2014-08-11 00:00:00 |  | 4  | 11 |
| 292 | 2014-08-11 00:00:00 |  | 1  | 12 |
| 293 | 2014-08-11 00:00:00 |  | 4  | 13 |
| 294 | 2014-08-11 00:00:00 |  | 4  | 14 |
| 295 | 2014-08-11 00:00:00 |  | 1  | 15 |
| 296 | 2014-08-11 00:00:00 |  | 1  | 16 |
| 297 | 2014-08-11 00:00:00 |  | 1  | 17 |
| 298 | 2014-08-11 00:00:00 |  | 1  | 18 |
| 299 | 2014-08-11 00:00:00 |  | 3  | 19 |
| 300 | 2014-08-18 00:00:00 |  | 71 | 1  |
| 301 | 2014-08-18 00:00:00 |  | 34 | 2  |
| 302 | 2014-08-18 00:00:00 |  | 26 | 3  |
| 303 | 2014-08-18 00:00:00 |  | 13 | 4  |
| 304 | 2014-08-18 00:00:00 |  | 9  | 5  |
| 305 | 2014-08-18 00:00:00 |  | 7  | 6  |
| 306 | 2014-08-18 00:00:00 |  | 4  | 7  |
| 307 | 2014-08-18 00:00:00 |  | 10 | 8  |
| 308 | 2014-08-18 00:00:00 |  | 6  | 9  |
| 309 | 2014-08-18 00:00:00 |  | 5  | 10 |
| 310 | 2014-08-18 00:00:00 |  | 6  | 11 |
| 311 | 2014-08-18 00:00:00 |  | 3  | 12 |
| 312 | 2014-08-18 00:00:00 |  | 6  | 13 |
| 313 | 2014-08-18 00:00:00 |  | 5  | 14 |
| 314 | 2014-08-18 00:00:00 |  | 2  | 15 |
| 315 | 2014-08-18 00:00:00 |  | 2  | 16 |
| 316 | 2014-08-18 00:00:00 |  | 4  | 17 |
| 317 | 2014-08-18 00:00:00 |  | 1  | 18 |
| 318 | 2014-08-18 00:00:00 |  | 2  | 19 |
| 319 | 2014-08-25 00:00:00 |  | 71 | 1  |
| 320 | 2014-08-25 00:00:00 |  | 27 | 2  |
| 321 | 2014-08-25 00:00:00 |  | 30 | 3  |
| 322 | 2014-08-25 00:00:00 |  | 12 | 4  |
| 323 | 2014-08-25 00:00:00 |  | 9  | 5  |

|     |                     |  |    |  |    |
|-----|---------------------|--|----|--|----|
| 324 | 2014-08-25 00:00:00 |  | 8  |  | 6  |
| 325 | 2014-08-25 00:00:00 |  | 4  |  | 7  |
| 326 | 2014-08-25 00:00:00 |  | 15 |  | 8  |
| 327 | 2014-08-25 00:00:00 |  | 4  |  | 9  |
| 328 | 2014-08-25 00:00:00 |  | 8  |  | 10 |
| 329 | 2014-08-25 00:00:00 |  | 5  |  | 11 |
| 330 | 2014-08-25 00:00:00 |  | 2  |  | 12 |
| 331 | 2014-08-25 00:00:00 |  | 4  |  | 13 |
| 332 | 2014-08-25 00:00:00 |  | 4  |  | 14 |
| 333 | 2014-08-25 00:00:00 |  | 4  |  | 15 |
| 334 | 2014-08-25 00:00:00 |  | 3  |  | 16 |
| 335 | 2014-08-25 00:00:00 |  | 5  |  | 17 |
| 336 | 2014-08-25 00:00:00 |  | 2  |  | 18 |

#### Query 4

|    | week                | weekly_active_users | desktop | phone | tablet |
|----|---------------------|---------------------|---------|-------|--------|
| 1  | 2014-04-28 00:00:00 | 701                 | 415     | 281   | 111    |
| 2  | 2014-05-05 00:00:00 | 1054                | 712     | 461   | 187    |
| 3  | 2014-05-12 00:00:00 | 1094                | 715     | 481   | 197    |
| 4  | 2014-05-19 00:00:00 | 1147                | 758     | 526   | 190    |
| 5  | 2014-05-26 00:00:00 | 1113                | 716     | 500   | 182    |
| 6  | 2014-06-02 00:00:00 | 1173                | 791     | 505   | 208    |
| 7  | 2014-06-09 00:00:00 | 1219                | 798     | 545   | 209    |
| 8  | 2014-06-16 00:00:00 | 1262                | 812     | 541   | 238    |
| 9  | 2014-06-23 00:00:00 | 1249                | 834     | 526   | 222    |
| 10 | 2014-06-30 00:00:00 | 1271                | 805     | 578   | 230    |
| 11 | 2014-07-07 00:00:00 | 1355                | 877     | 591   | 242    |
| 12 | 2014-07-14 00:00:00 | 1345                | 900     | 578   | 227    |
| 13 | 2014-07-21 00:00:00 | 1363                | 903     | 601   | 231    |
| 14 | 2014-07-28 00:00:00 | 1442                | 951     | 588   | 250    |
| 15 | 2014-08-04 00:00:00 | 1266                | 913     | 491   | 173    |
| 16 | 2014-08-11 00:00:00 | 1215                | 886     | 438   | 159    |
| 17 | 2014-08-18 00:00:00 | 1203                | 875     | 428   | 157    |
| 18 | 2014-08-25 00:00:00 | 1194                | 864     | 441   | 163    |

#### Query 5

|    | date_trunc          | weekly | emailaction             |
|----|---------------------|--------|-------------------------|
| 1  | 2014-04-28 00:00:00 | 187    | email_clickthrough      |
| 2  | 2014-04-28 00:00:00 | 332    | email_open              |
| 3  | 2014-04-28 00:00:00 | 98     | sent_reengagement_email |
| 4  | 2014-04-28 00:00:00 | 908    | sent_weekly_digest      |
| 5  | 2014-05-05 00:00:00 | 431    | email_clickthrough      |
| 6  | 2014-05-05 00:00:00 | 910    | email_open              |
| 7  | 2014-05-05 00:00:00 | 164    | sent_reengagement_email |
| 8  | 2014-05-05 00:00:00 | 2602   | sent_weekly_digest      |
| 9  | 2014-05-12 00:00:00 | 478    | email_clickthrough      |
| 10 | 2014-05-12 00:00:00 | 961    | email_open              |

|    |                     |      |                         |
|----|---------------------|------|-------------------------|
| 11 | 2014-05-12 00:00:00 | 175  | sent_reengagement_email |
| 12 | 2014-05-12 00:00:00 | 2665 | sent_weekly_digest      |
| 13 | 2014-05-19 00:00:00 | 495  | email_clickthrough      |
| 14 | 2014-05-19 00:00:00 | 984  | email_open              |
| 15 | 2014-05-19 00:00:00 | 179  | sent_reengagement_email |
| 16 | 2014-05-19 00:00:00 | 2733 | sent_weekly_digest      |
| 17 | 2014-05-26 00:00:00 | 447  | email_clickthrough      |
| 18 | 2014-05-26 00:00:00 | 1008 | email_open              |
| 19 | 2014-05-26 00:00:00 | 179  | sent_reengagement_email |
| 20 | 2014-05-26 00:00:00 | 2822 | sent_weekly_digest      |
| 21 | 2014-06-02 00:00:00 | 483  | email_clickthrough      |
| 22 | 2014-06-02 00:00:00 | 972  | email_open              |
| 23 | 2014-06-02 00:00:00 | 199  | sent_reengagement_email |
| 24 | 2014-06-02 00:00:00 | 2911 | sent_weekly_digest      |
| 25 | 2014-06-09 00:00:00 | 527  | email_clickthrough      |
| 26 | 2014-06-09 00:00:00 | 1058 | email_open              |
| 27 | 2014-06-09 00:00:00 | 190  | sent_reengagement_email |
| 28 | 2014-06-09 00:00:00 | 3003 | sent_weekly_digest      |
| 29 | 2014-06-16 00:00:00 | 558  | email_clickthrough      |
| 30 | 2014-06-16 00:00:00 | 1144 | email_open              |
| 31 | 2014-06-16 00:00:00 | 234  | sent_reengagement_email |
| 32 | 2014-06-16 00:00:00 | 3105 | sent_weekly_digest      |
| 33 | 2014-06-23 00:00:00 | 517  | email_clickthrough      |
| 34 | 2014-06-23 00:00:00 | 1080 | email_open              |
| 35 | 2014-06-23 00:00:00 | 187  | sent_reengagement_email |
| 36 | 2014-06-23 00:00:00 | 3207 | sent_weekly_digest      |
| 37 | 2014-06-30 00:00:00 | 554  | email_clickthrough      |
| 38 | 2014-06-30 00:00:00 | 1157 | email_open              |
| 39 | 2014-06-30 00:00:00 | 222  | sent_reengagement_email |
| 40 | 2014-06-30 00:00:00 | 3302 | sent_weekly_digest      |
| 41 | 2014-07-07 00:00:00 | 619  | email_clickthrough      |
| 42 | 2014-07-07 00:00:00 | 1215 | email_open              |
| 43 | 2014-07-07 00:00:00 | 214  | sent_reengagement_email |
| 44 | 2014-07-07 00:00:00 | 3399 | sent_weekly_digest      |
| 45 | 2014-07-14 00:00:00 | 604  | email_clickthrough      |
| 46 | 2014-07-14 00:00:00 | 1244 | email_open              |
| 47 | 2014-07-14 00:00:00 | 226  | sent_reengagement_email |
| 48 | 2014-07-14 00:00:00 | 3499 | sent_weekly_digest      |
| 49 | 2014-07-21 00:00:00 | 578  | email_clickthrough      |
| 50 | 2014-07-21 00:00:00 | 1200 | email_open              |
| 51 | 2014-07-21 00:00:00 | 206  | sent_reengagement_email |
| 52 | 2014-07-21 00:00:00 | 3592 | sent_weekly_digest      |
| 53 | 2014-07-28 00:00:00 | 629  | email_clickthrough      |
| 54 | 2014-07-28 00:00:00 | 1372 | email_open              |
| 55 | 2014-07-28 00:00:00 | 230  | sent_reengagement_email |
| 56 | 2014-07-28 00:00:00 | 3706 | sent_weekly_digest      |

|    |                     |      |                         |
|----|---------------------|------|-------------------------|
| 57 | 2014-08-04 00:00:00 | 431  | email_clickthrough      |
| 58 | 2014-08-04 00:00:00 | 1328 | email_open              |
| 59 | 2014-08-04 00:00:00 | 206  | sent_reengagement_email |
| 60 | 2014-08-04 00:00:00 | 3793 | sent_weekly_digest      |
| 61 | 2014-08-11 00:00:00 | 429  | email_clickthrough      |
| 62 | 2014-08-11 00:00:00 | 1341 | email_open              |
| 63 | 2014-08-11 00:00:00 | 224  | sent_reengagement_email |
| 64 | 2014-08-11 00:00:00 | 3897 | sent_weekly_digest      |
| 65 | 2014-08-18 00:00:00 | 487  | email_clickthrough      |
| 66 | 2014-08-18 00:00:00 | 1411 | email_open              |
| 67 | 2014-08-18 00:00:00 | 257  | sent_reengagement_email |
| 68 | 2014-08-18 00:00:00 | 4012 | sent_weekly_digest      |
| 69 | 2014-08-25 00:00:00 | 485  | email_clickthrough      |
| 70 | 2014-08-25 00:00:00 | 1511 | email_open              |
| 71 | 2014-08-25 00:00:00 | 263  | sent_reengagement_email |
| 72 | 2014-08-25 00:00:00 | 4111 | sent_weekly_digest      |