**SQL Workshop 1**

1. The below table records all the page visits from a website. For every visitor a unique ID is generated and every time a visitor comes to the website, a unique visit ID is generated for that visitor. All the pages viewed during a visit are numbered sequentially along with the timestamp of that event.

**PAGE\_VISITS\_DATA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **VISITOR\_ID** | **VISIT\_ID** | **VISIT\_PAGE\_NUM** | **DATE\_TIME** | **PAGE\_NAME** |
| 1 | 1 | 1 | 20-11-2013 04:26:05 | Home |
| 1 | 1 | 2 | 20-11-2013 04:26:47 | Search |
| 1 | 1 | 3 | 20-11-2013 04:27:29 | Search |
| 1 | 1 | 4 | 20-11-2013 04:28:11 | Product |
| 1 | 1 | 5 | 20-11-2013 04:28:53 | Product |
| 1 | 1 | 6 | 20-11-2013 04:29:35 | Shopping Cart |
| 1 | 1 | 7 | 20-11-2013 04:30:17 | Home |
| 1 | 2 | 1 | 06-09-2013 09:51:49 | Home |
| 1 | 2 | 2 | 06-09-2013 09:51:59 | Product |
| 1 | 2 | 3 | 06-09-2013 09:52:09 | Product |
| 1 | 3 | 1 | 17-04-2014 00:27:01 | Home |
| 1 | 3 | 2 | 17-04-2014 00:29:01 | Search |
| 1 | 3 | 3 | 17-04-2014 00:31:01 | Product |
| 1 | 3 | 4 | 17-04-2014 00:31:09 | Shopping Cart |
| 2 | 1 | 1 | 20-05-2014 12:49:19 | Home |
| 2 | 1 | 2 | 20-05-2014 12:49:50 | Search |
| 2 | 1 | 3 | 20-05-2014 12:50:21 | Product |
| 2 | 1 | 4 | 20-05-2014 12:50:52 | Product |
| 2 | 1 | 5 | 20-05-2014 12:51:23 | Category |
| 2 | 1 | 6 | 20-05-2014 12:51:54 | Shopping Cart |

The requirement is to find all the visits where the visitor has followed the below mentioned pattern.

1. Search page.
2. 1 or more product pages.
3. Shopping cart page.

Please make sure that the query considers only the visits where the visitor has not viewed any other pages in between the above mentioned pattern of page views.

Along with the number of visits that exhibit this pattern, also display the % of overall visits that exhibit this pattern. Also group the results by a monthly basis.

**Note:** For this workshop, please assume that no visits will fall into 2 different months. Every visit will have only 1 corresponding month to it. Also assume that no visit will exhibit the pattern more than once.

**Expected Result:**

|  |  |  |
| --- | --- | --- |
| **MONTH** | **NO\_OF\_VISITS\_WITH\_THE\_PATTERN** | **PERCENT\_OF\_OVERALL\_VISITS** |
| 09-2013 | 0 | 0% |
| 11-2013 | 1 | 100% |
| 04-2014 | 1 | 100% |
| 05-2014 | 0 | 0% |

**Script for creating the source table:**

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2.

with CTE as (

SELECT FORMAT(DATE\_TIME, 'MM-yyyy') Month,

STRING\_AGG(PAGE\_NAME, '/') Pattern,

YEAR(DATE\_TIME) Year

FROM PAGE\_VISITS\_DATA

GROUP BY FORMAT(DATE\_TIME, 'MM-yyyy'), YEAR(DATE\_TIME)

)

select month,

case when pattern like '%Search%Product\_Shopping Cart%' then 1

else 0

end as No\_of\_vists\_with\_the\_pattern,

case when pattern like '%Search%Product\_Shopping Cart%' then '100%'

else '0%' end as Percent\_of\_overall\_vists

from CTE