

Σχεδιασμός Βάσεων Δεδομένων Διδάσκων: Ιωάννης Κωτίδης

Εαρινό εξάμηνο 2020-2021

Πρώτη Εργασία

Ανάθεση: **30-04-2021**

Παράδοση: 18-05-2021 Ώρα (23:55)

ΑΡΙΣΤΕΙΔΗΣ ΧΡΟΝΟΠΟΥΛΟΣ 3160194

ΖΗΤΗΜΑ ΠΡΩΤΟ

1.INDEX →

CREATE INDEX movieyear

ON moives(title,pyear)

WHERE pyear >= 1990 AND pyear <= 2000

ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΧΩΡΙΣ ΕΥΡΕΤΗΡΙΟ

```
(75693 rows affected)
Table 'movies'. Scan count 1, logical reads 1918, physical reads 2, read-ahead reads 1917, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
(1 row affected)
 (75693 rows affected)
Table 'movies'. Scan count 1, logical reads 1918, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
(1 row affected)
(75693 rows affected)
Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
Table 'movies'. Scan count 5, logical reads 2012, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
(4 rows affected)
 (1 row affected)
Completion time: 2021-05-03T12:13:24.5044370+03:00
Query 1: Query cost (relative to the batch): 20%
SELECT [title] FROM [movies] WHERE [pyear] >= @1 AND [pyear] <= @2
                                     (LL)
                    Clustered Index Scan (Clustered)
[movies].[PK_movies_DF5032EC09CA4...
                                 Cost: 100 %
                                    0.046s
                                   75693 of
                                 76303 (99%)
Query 2: Query cost (relative to the batch): 20%
SELECT [pyear], [title] FROM [movies] WHERE [pyear] >= @1 AND [pyear] <= @2
                                     (L)
                    Clustered Index Scan (Clustered)
[movies].[PK_movies_DF5032EC09CA4...
   SELECT
                                 Cost: 100 %
                                    0.039s
Cost: 0 %
                                   75693 of
                                 76303 (99%)
Query 3: Query cost (relative to the batch): 60%
SELECT [title], [pyear] FROM [movies] WHERE [pyear] >= @1 AND [pyear] <= @2 ORDER BY [pyear] ASC, [title] ASC
                                                                      Clustered Index Scan (Clustered)
[movies].[PK_movies_DF5032EC09CA4...
                      Parallelism
                                                   Sort
                    (Gather Streams)
                                              Cost: 56 %
 SELECT
                       Cost: 14 %
                                                                                   Cost: 30 %
                                                 0.029s
Cost: 0 %
                         0.051s
                                                 75693 of
                        75693 of
                                                                                    75693 of
                                               76303 (99%)
                      76303 (99%)
                                                                                   76303 (99%)
```

ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΞΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΜΕ ΕΥΡΕΤΗΡΙΟ

```
(75693 rows affected)
 Table 'movies'. Scan count 1, logical reads 353, physical reads 3, read-ahead reads 363, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
  (1 row affected)
  (75693 rows affected)
  Table 'movies'. Scan count 1, logical reads 353, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
  (75693 rows affected)
 Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 Table 'movies'. Scan count 5, logical reads 1396, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
  Completion time: 2021-05-03T17:37:26.2825679+03:00
Query 1: Query cost (relative to the batch): 4%
SELECT [title] FROM [ SELECT[title] FROM [movies] WHERE [pyear]>=@1 AND [pyear]<=@2
                   Index Scan (NonClustered)
                     [movies].[movieyear]
                          Cost: 100 %
                            0.0189
                           75693 of
                          75693 (100%)
Query 2: Query cost (relative to the batch): 4%
SELECT [pyear],[title] FROM [movies] WHERE [pyear]>=@1 AND [pyear]<=@2
                              4
                   Index Scan (NonClustered)
   [movies].[movieyear]
 SELECT
                          Cost: 100 %
Cost: 0 %
                            0.019s
                            75693 of
                         75693 (100%)
Query 3: Query cost (relative to the batch): 93%
SELECT [title], [pyear] FROM [movies] WHERE [pyear] >= @1 AND [pyear] <= @2 ORDER BY [pyear] ASC, [title] ASC
                     Parallelism
                                                                   Index Scan (NonClustered)
                                                 Sort
                   (Gather Streams)
                                                                      [movies].[movieyear]
                                              Cost: 76 %
 SELECT
                      Cost: 21 %
                                                                           Cost: 3 %
Cost: 0 %
                       0.049s
                                                                             0.007s
                       75693 of
                                                                            75693 of
                                             75693 (100%)
                     75693 (100%)
                                                                          75693 (100%)
```

Βλέπουμε λοιπόν από τις εικόνες ότι με τη χρήση του ευρετηρίου έχει μειωθεί και το κόστος των logical reads αλλά και ο χρόνος εκτέλεσης του query.

2.INDEX \rightarrow

CREATE Columnstore INDEX zit2

ON user_movies(rating)

ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΧΩΡΙΣ ΕΥΡΕΤΗΡΙΟ

(3661 rows affected)
Table 'user_movies'. Scan count 1, logical reads 2601, physical reads 2, read-ahead reads 2603, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

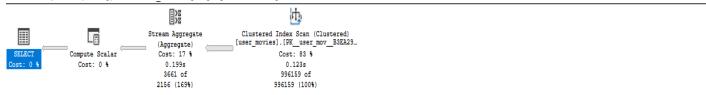
(1 row affected)

(6039 rows affected)
Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
Table 'Workfile'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
Table 'user_movies'. Scan count 5, logical reads 2733, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

(1 row affected)

Completion time: 2021-05-03T18:11:01.1141369+03:00

Query 1: Query cost (relative to the batch): 41% select mid, count(rating) from user_movies group by mid order by mid



Query 2: Query cost (relative to the batch): 59% select userid, count(rating) from user_movies group by userid order by userid 1 A J Parallelism Hash Match Parallelism Hash Match Clustered Index Scan (Clustered) Sort [user_movies].[PK_user_mov_B3EA29... (Gather Streams) (Repartition Streams) (Partial Aggregate) (Aggregate) Cost: 2 % SELECT Cost: 1 % Compute Scalar Cost: 2 % Cost: 1 % Cost: 47 % Cost: 47 % 0.082s 0.083s 0.082s 0.081s 0.080s 0.026s 6039 of 6039 of 6039 of 24152 of 24152 of 996159 of 6040 (99%) 6040 (99%) 6040 (99%) 12080 (199%) 12080 (199%) 996159 (100%)

ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΜΕ ΕΥΡΕΤΗΡΙΟ

```
(3661 rows affected)
 Table 'user_movies'. Scan count 2, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 598, lob physical reads 4, lob read-ahead reads 1335.
 Table 'user_movies'. Segment reads 1, segment skipped 0.
 Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 (1 row affected)
 (6039 rows affected)
 Table 'user_movies'. Scan count 2, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 288, lob physical reads 0, lob read-ahead reads 0.
 Table 'user_movies'. Segment reads 1, segment skipped 0.
 Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 (1 row affected)
 Completion time: 2021-05-03T18:20:02.5161583+03:00
Query 1: Query cost (relative to the batch): 48%
select mid, count(rating) from user movies group by mid order by mid
                                                                                                             HUII
                                                L
                                                                                          Columnstore Index Scan (NonClustere...
                                                                    Hash Match
                       Sort
                                          Compute Scalar
                                                                    (Aggregate)
                                                                                                   [user movies].[zit2]
                     Cost: 1 %
                                             Cost: 0 %
                                                                    Cost: 77 %
                                                                                                        Cost: 22 %
                      0.002s
                                              0.000s
                                                                      0.012s
                                                                                                           0.014s
                      3661 of
                                              3661 of
                                                                      3661 of
                                                                                                         832094 of
                    2156 (169%)
                                           2156 (169%)
                                                                   2156 (169%)
                                                                                                        996159 (83%)
Query 2: Query cost (relative to the batch): 52%
select userid, count(rating) from user movies group by userid order by userid
                                                                                                           HUII
                                                                                         Columnstore Index Scan (NonClustere ...
                                                                   Hash Match
                       Sort
                                        Compute Scalar
                                                                   (Aggregate)
                                                                                                  [user_movies].[zit2]
                    Cost: 3 % (
                                           Cost: 0 %
 SELECT
                                                                   Cost: 73 %
                                                                                                       Cost: 24 %
                     0.000
                                             0.000
                                                                     0.018s
                                                                                                         0.006s
Cost: 0 %
                     6039 of
                                            6039 of
                                                                    6039 of
                                                                                                        996159 of
                    6040 (99%)
                                           6040 (99%)
                                                                   6040 (99%)
                                                                                                     996159 (100%)
```

Από τις εικόνες βλέπουμε οτι τα logical reads έχουν εκμηδενιστεί εντελώς καθώς και ο χρόνος του query έχει μειωθεί σημαντικά.

ΖΗΤΗΜΑ ΔΕΥΤΕΡΟ

1.ΕΠΕΡΩΤΗΜΑ \rightarrow

select title from movies, movies_genre
where movies.mid=movies_genre.mid AND genre IN
('Adventure', 'Action')

 $INDEX \rightarrow$

create index zit3

ON movies_genre(mid,genre)

create index moviesind

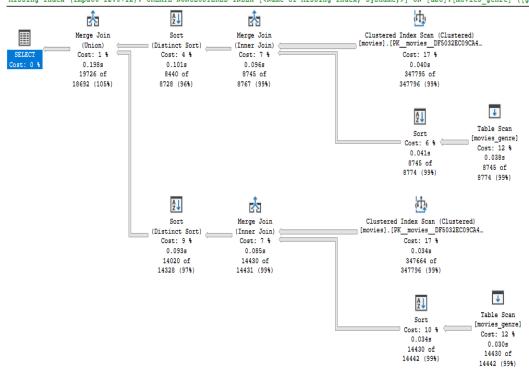
on movies(mid)

include(title)

ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΧΩΡΙΣ ΕΥΡΕΤΗΡΙΟ

UNION

Query 1: Query cost (relative to the batch): 100% select title from movies, movies_genre where movies.mid=movies_genre.mid and genre='Adventure' UNION select title from movies, movies_genre where m Missing Index (Impact 12.0712): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>] ON [dbo].[movies_genre] ([genre]) INCLUDE ([mid])



IN

(23175 rows affected)

Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

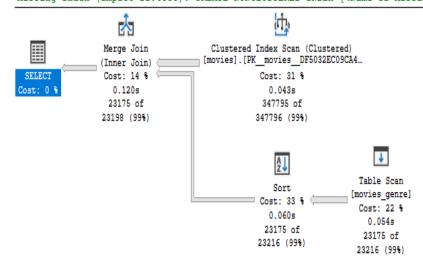
Table 'movies_genre'. Scan count 1, logical reads 1123, physical reads 0, read-ahead reads 1123, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies'. Scan count 1, logical reads 1918, physical reads 2, read-ahead reads 1917, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

(1 row affected)

Completion time: 2021-05-06T12:07:53.6804577+03:00

Query 1: Query cost (relative to the batch): 100% select title from movies,movies_genre where movies.mid=movies_genre.mid AND genre IN ('Adventure', 'Action')
Missing Index (Impact 22.6883): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>] ON [dbo].[movies genre]



ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΜΕ ΕΥΡΕΤΗΡΙΟ

(23175 rows affected)

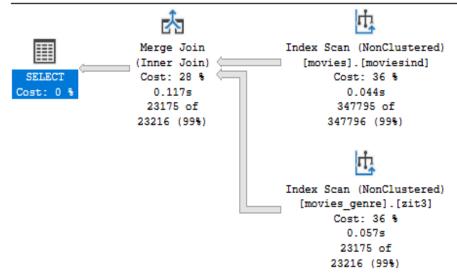
Table 'movies_genre'. Scan count 1, logical reads 1374, physical reads 1, read-ahead reads 1388, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies'. Scan count 1, logical reads 1399, physical reads 3, read-ahead reads 1409, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

(1 row affected)

Completion time: 2021-05-06T12:11:37.4576854+03:00

Query 1: Query cost (relative to the batch): 100% select title from movies, movies_genre where movies.mid=movies_genre.mid AND genr Missing Index (Impact 37.1993): CREATE NONCLUSTERED INDEX [<Name of Missing Inde



ΠΑΡΑΤΗΡΟΥΜΕ ΑΠΟ ΤΟ ΠΛΑΝΟ ΟΤΙ ΕΧΟΥΜΕ ΓΛΙΤΩΣΕΙ ΕΝΑ ΣΤΑΔΙΟ ΣΤΟ SORT ΚΑΘΩΣ ΕΠΙΣΗΣ ΕΧΕΙ ΜΕΙΩΘΕΙ ΕΛΑΧΙΣΤΟ ΚΑΙ Ο ΧΡΟΝΟΣ.ΕΠΙΣΗΣ ΤΑ LOGICAL READS EXOYN ΜΕΙΩΘΕΙ ΑΡΚΕΤΑ.

2.ΕΠΕΡΩΤΗΜΑΤΑ \rightarrow

SELECT title

FROM movies, actors, roles

WHERE movies.mid = roles.mid AND roles.aid = actors.aid AND actors.gender = 'M'

EXCEPT

SELECT title

FROM movies, actors, roles

WHERE movies.mid = roles.mid AND roles.aid = actors.aid AND actors.gender = 'F'

SELECT DISTINCT title

FROM movies, roles, actors

WHERE movies.mid = roles.mid AND roles.aid = actors.aid AND actors.gender = 'M' AND movies.title NOT IN (SELECT movies.title FROM movies,actors,roles WHERE movies.mid = roles.mid AND roles.aid = actors.aid AND actors.gender = 'F')

INDEXES \rightarrow

CREATE INDEX zit2ask2

ON actors(aid, gender)

CREATE INDEX zit2ask21

ON movies(mid)

INCLUDE(title)

CREATE INDEX zit2ask22

ON roles(mid,aid)

ΣΚΡΙΝΣΟΤΣ ΑΠΌ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΧΩΡΙΣ ΕΥΡΕΤΗΡΙΟ

```
(37846 rows affected)
Table 'actors'. Scan count 10, logical reads 7060, physical reads 2, read-ahead reads 3362, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
Table 'roles'. Scan count 10, logical reads 8978, physical reads 1, read-ahead reads 4422, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
Table 'Workfile'. Scan count 16, logical reads 384, physical reads 16, read-ahead reads 368, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
Table 'movies'. Scan count 10, logical reads 4024, physical reads 2, read-ahead reads 1917, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
(1 row affected)
Completion time: 2021-05-06T11:32:22.2575709+03:00
 (37846 rows affected)
 Table 'actors'. Scan count 10, logical reads 7072, physical reads 2, read-ahead reads 3362, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 Table 'roles'. Scan count 14, logical reads 9002, physical reads 1, read-ahead reads 4422, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 Table 'Workfile'. Scan count 16, logical reads 384, physical reads 16, read-ahead reads 368, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-shead reads 0, lob logical reads 0, lob physical reads 0, lob read-shead reads 0.
 Table 'movies'. Scan count 18, logical reads 11708, physical reads 2, read-ahead reads 1917, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.
 (1 row affected)
 Completion time: 2021-05-06T11:31:12.1192666+03:00
```

ΣΚΡΙΝΣΟΤΣ ΑΠΌ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΟΝ ΕΝΤΌΛΟΝ ΜΕ ΕΥΡΕΤΗΡΙΟ

```
(37846 rows affected)

Table 'actors'. Scan count 10, logical reads 2360, physical reads 3, read-ahead reads 1128, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'roles'. Scan count 14, logical reads 3872, physical reads 1, read-ahead reads 1918, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies'. Scan count 18, logical reads 8542, physical reads 3, read-ahead reads 1409, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'Workfile'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'Worktable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Completion time: 2021-05-06T11:26:56.8381136+03:00
```

ΤΑ ΠΛΑΝΑ ΗΤΑΝ ΠΟΛΥ ΜΕΓΑΛΑ ΓΙΑ ΝΑ ΤΑ ΚΑΝΩ CAPTURE ME ENA ΣΚΡΙΝ ΑΛΛΑ ΟΠΩΣ ΦΑΙΝΕΤΑΙ ΚΑΙ ΑΠΟ ΤΑ LOGICAL READS EXOYN ΜΕΙΩΘΕΙ ΑΡΚΕΤΑ ΚΑΙ ΕΧΟΥΜΕ ΓΛΙΤΩΣΕΙ ΠΟΛΥ ΚΟΣΤΟΣ.

ZHTHMA TPITO

1.ΕΠΕΡΩΤΗΜΑ

Βρες το firstname, το lastname και το ρόλο των actors που έπαιξαν στην ταινία 'We Never Sleep'

SELECT firstName,lastName,a_role

FROM actors

JOIN roles ON actors.aid=roles.aid

JOIN movies ON roles.mid=movies.mid

AND movies.title='We Never Sleep';

INDEX →

CREATE INDEX zit3first

ON movies(title)

CREATE INDEX zit3first1

ON actors(firstName,lastName)

ΣΚΡΙΝΣΟΤ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΧΩΡΙΣ ΕΥΡΕΤΗΡΙΟ

(2 rows affected)

Table 'actors'. Scan count 0, logical reads 10, physical reads 1, read-ahead reads 16, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'roles'. Scan count 2, logical reads 6, physical reads 3, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies'. Scan count 1, logical reads 1918, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

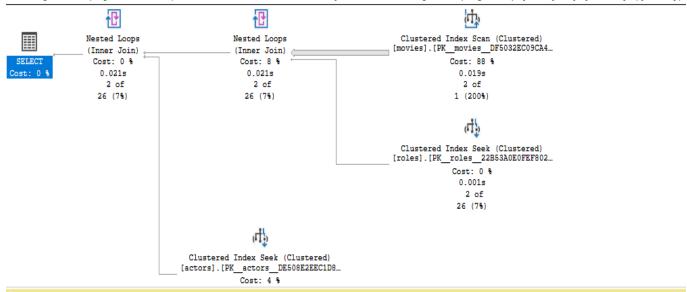
(1 row affected)

Completion time: 2021-05-05T11:58:49.3592883+03:00

Query 1: Query cost (relative to the batch): 100%

SELECT firstName,lastName,a_role FROM actors JOIN roles ON actors.aid=roles.aid JOIN movies ON roles.mid=movies.mid AND mc

Missing Index (Impact 95.6504): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>] ON [dbo].[movies] ([title])



ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΜΕ ΕΥΡΕΤΗΡΙΟ

(2 rows affected)

Table 'actors'. Scan count 0, logical reads 10, physical reads 1, read-ahead reads 16, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

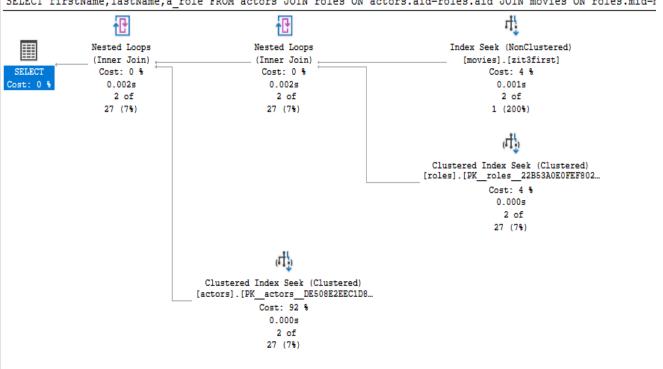
Table 'roles'. Scan count 2, logical reads 6, physical reads 3, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies'. Scan count 1, logical reads 3, physical reads 3, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

(1 row affected)

Completion time: 2021-05-06T12:48:37.0652037+03:00

Query 1: Query cost (relative to the batch): 100% SELECT firstName, lastName, a role FROM actors JOIN roles ON actors.aid=roles.aid JOIN movies ON roles.mid=r



ΠΑΡΑΤΗΡΟΥΜΕ ΑΠΟ ΤΙ ΕΙΚΟΝΕΣ ΟΤΙ ΚΑΙ Ο ΧΡΟΝΟΣ ΕΚΤΕΛΕΣΗΣ ΕΧΕΙ ΜΕΙΩΘΕΙ ΑΡΚΕΤΑ ΑΛΛΑ ΚΑΙ ΤΑ LOGICAL READS EXOYN ΕΛΑΧΙΣΤΟΠΟΙΗΘΕΙ ΣΤΟΝ ΠΙΝΑΚΑ MOVIES.

2.ΕΠΕΡΩΤΗΜΑ \rightarrow

Βρες όλες τις χρονιές που κυκλοφόρησαν ταινίες που πήραν βαθμολογία 8 ή 9 στην κατηγορία Comedy και κάντες sort σε αύξουσα σειρά.

SELECT DISTINCT pyear

FROM movies, movies_genre

WHERE movies.mid = movies genre.mid

AND genre = 'Comedy'

AND movies.mrank IN (8.0, 9.0)

ORDER BY pyear;

 $INDEX \rightarrow$

CREATE INDEX zit3sec

ON movies(mid,pyear,mrank)

CREATE INDEX zit3sec1

ON movies_genre(genre)

ΣΚΡΙΝΣΟΤΣ ΑΠΟ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΧΩΡΙΣ ΕΥΡΕΤΗΡΙΟ

(83 rows affected)

Table 'Workfable'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'Workfile'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies_genre'. Scan count 1, logical reads 1123, physical reads 0, read-ahead reads 1123, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

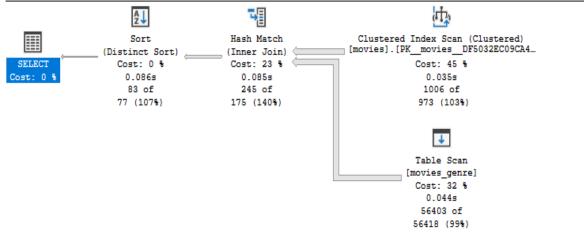
Table 'movies'. Scan count 1, logical reads 1918, physical reads 2, read-ahead reads 1917, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

(1 row affected)

Completion time: 2021-05-05T12:35:12.0248259+03:00

Query 1: Query cost (relative to the batch): 100%

SELECT DISTINCT pyear FROM movies, movies_genre WHERE movies.mid = movies_genre.mid AND genre = 'Com
Missing Index (Impact 35.2482): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>] ON [d



ΣΚΡΙΝΣΟΤΣ ΑΠΌ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΩΝ ΕΝΤΟΛΩΝ ΜΕ ΕΥΡΕΤΗΡΙΟ

(83 rows affected)

Table 'Workfaile'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'Workfaile'. Scan count 0, logical reads 0, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies_genre'. Scan count 1, logical reads 1123, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

Table 'movies'. Scan count 1, logical reads 824, physical reads 0, read-ahead reads 0, lob logical reads 0, lob physical reads 0, lob read-ahead reads 0.

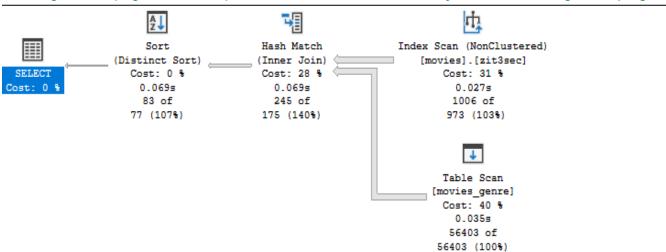
(1 row affected)

Completion time: 2021-05-05T12:39:34.4125743+03:00

Query 1: Query cost (relative to the batch): 100%

SELECT DISTINCT pyear FROM movies, movies_genre WHERE movies.mid = movies_genre.mid AND q

Missing Index (Impact 44.2729): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysna



ΑΠΟ ΤΙΣ ΕΙΚΟΝΕΣ ΒΛΕΠΟΥΜΕ ΟΤΙ ΤΑ READS EXOYN ΜΕΙΩΘΕΙ ΣΤΟΝ ΠΙΝΑΚΑ MOVIES ΚΑΘΩΣ ΚΑΙ Ο ΧΡΟΝΟΣ ΕΚΤΕΛΕΣΗΣ ΕΧΕΙ ΜΕΙΩΘΕΙ.