

Opdracht 4

Met behulp van normaliseren kan een grote hoeveelheid aan gegevens efficiënter en overzichtelijker worden weergegeven. Normaliseren wordt onder andere gebruikt bij relationele databases. De gegevens die in dit document genormaliseerd worden, worden gebruikt voor de relationele database FLETNIX. De stappen en resultaten hiervan worden in dit document visueel gemaakt. De normaalvormen die gebruikt worden zijn de nulde, eerste, tweede en derde normaalvorm.

ONV

Voor de Nulde Normaalvorm worden alle gegevens allemaal overgenomen in één grote tabel met herhalende groepen. In *Tabelreeks 1 – Nulde Normaalvorm* staan alle gegevens in een ongenormaliseerd overzicht.

Overview movie awards per year

Award	Year	Country	Category	Movie (movie_id)	Person (person_id)	Code	Description
Academy Awards	2000	The Netherlands	Best Film Editing	The Matrix (207992)	Zach Steanberg (550813)	W	Won
Academy Awards	2000	The Netherlands	Best Film Editing	The Insider (160492)	William Goldenberg (276884)	N	Nominated
Academy Awards	2000	The Netherlands	Best Film Editing	The Insider (160492)	Paul Rubbel (950001)	N	Nominated
Academy Awards	2000	The Netherlands	Best Film Editing	The Insider (160492)	David Rosenbloom (68042)	N	Nominated
Academy Awards	2000	The Netherlands	Best Film Editing	The Sixt Sense (303564)	Andrew Mondshein (54796)	N	Nominated
Academy Awards	2000	The Netherlands	Best Sound Effects Editing	Fight Club (112290)	Ren Klyce (351397)	N	Nominated
Academy Awards	2000	The Netherlands	Best Sound Effects Editing	Fight Club (112290)	Richard Hymns (950002)	N	Nominated
Academy Awards	2000	The Netherlands	Best Sound Effect Editing	The Matrix (207992)	Dane Davis (950003)	W	Won
Academy Awards	2000	The Netherlands	Best Sound Effect Editing	Star Wars: Episode I – The Phantom Menace (313474)	Ben Burtt (165453)	N	Nominated
Academy Awards	2000	The Netherlands	Best Visual Effects	Star Wars: Episode I – The Phantom Menace (313474)	John Knoll (351981)	N	Nominated
Academy Awards	2000	The Netherlands	Best Visual Effects	Star Wars: Episode I – The Phantom Menace (313474)	Rob Coleman (191712)	N	Nominated

Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix (207992)	John Gaeta (950004)	W	Won
Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix (207992)	Janed Sirrs (540853)	W	Won
Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix (207992)	Steve Courtley (950005)	W	Won
Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix (207992)	Jon Thum (950006)	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix (207992)	David Lee (950007)	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix (207992)	John Reitz (950008)	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix (207992)	Gregg Rudloff (950009)	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix (207992)	David Campbell (950010)	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix (207992)	Dane Davis (950003)	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	Star Wars: Episode I – The Phantom Menace (313474)	Ben Burtt (165453)	N	Nominated
BAFTA Awards	2000	New Zealand	Best Sound	Star Wars: Episode I – The Phantom Menace (313474)	Tom Belfort (950012)	N	Nominated
BAFTA Awards	2000	New Zealand	Best Sound	American Beauty (13789)	Bob Beemer (950013)	N	Nominated
BAFTA Awards	2000	New Zealand	Best Cinematography	The Matrix (207992)	Bill Pope (950014)	N	Nominated
BAFTA Awards	2000	New Zealand	Best Cinematography	American Beauty (13789)	Conrad Hall (950015)	W	Won
BAFTA Awards	2000	New Zealand	Best Production Design	The Matrix (207992)	Owen Paterson (464716)	N	Nominated
BAFTA Awards	2000	New Zealand	Best Production Design	Sleepy Hollow (304862)	Rick Heinrichs (303143)	W	Won
BAFTA Awards	2000	New Zealand	Best Editing	The Matrix (207992)	Zach Staenberg (550813)	N	Nominated
BAFTA Awards	2000	New Zealand	Best Editing	American Beauty (13789)	Tariq Anwar (950016)	W	Won
BAFTA Awards	2000	New Zealand	Best Editing	American Beauty (13789)	Christopher Greenbury (283753)	W	Won

Tabelreeks 1 – Nulde Normaalvorm

1NV

Om de bovenstaande tabel (*Tabelreeks 1 – Nulde Normaalvorm*) om te zetten naar de Eerste Normaalvorm, moeten de movie_id en person_id losgetrokken worden en in aparte kolommen worden gezet. Zo krijgen alle cellen een atomaire (enkelvoudige) waarde. De onderstaande tabel (*Tabelreeks 2 – Eerste Normaalvorm*) staat in de Eerste Normaalvorm.

Overview movie awards per year

Award	Year	Country	Category	Movie	Movie id	Person	Person Id	Co de	Description
Academy Awards	2000	The Netherlands	Best Film Editing	The Matrix	207992	Zach Steanberg	550813	W	Won
Academy Awards	2000	The Netherlands	Best Film Editing	The Insider	160492	William Goldenberg	276884	N	Nominated
Academy Awards	2000	The Netherlands	Best Film Editing	The Insider	160492	Paul Rubbel	950001	N	Nominated
Academy Awards	2000	The Netherlands	Best Film Editing	The Insider	160492	David Rosenbloom	68042	N	Nominated
Academy Awards	2000	The Netherlands	Best Film Editing	The Sixth Sense	303564	Andrew Mondschein	54796	N	Nominated
Academy Awards	2000	The Netherlands	Best Sound Effects Editing	Fight Club	112290	Ren Klyce	351397	N	Nominated
Academy Awards	2000	The Netherlands	Best Sound Effects Editing	Fight Club	112290	Richard Hymns	950002	N	Nominated
Academy Awards	2000	The Netherlands	Best Sound Effect Editing	The Matrix	207992	Dane Davis	950003	W	Won
Academy Awards	2000	The Netherlands	Best Sound Effect Editing	Star Wars: Episode I – The Phantom Menace	313474	Ben Burt	165453	N	Nominated
Academy Awards	2000	The Netherlands	Best Visual Effects	Star Wars: Episode I – The Phantom Menace	313474	John Knoll	351981	N	Nominated
Academy Awards	2000	The Netherlands	Best Visual Effects	Star Wars: Episode I – The Phantom Menace	313474	Rob Coleman	191712	N	Nominated
Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix	207992	John Gaeta	950004	W	Won
Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix	207992	Janed Sirrs	540853	W	Won
Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix	207992	Steve Courtley	950005	W	Won
Academy Awards	2000	The Netherlands	Best Visual Effects	The Matrix	207992	Jon Thum	950006	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix	207992	David Lee	950007	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix	207992	John Reitz	950008	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix	207992	Gregg Rudloff	950009	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	The Matrix	207992	David Campbell	950010	W	Won

BAFTA Awards	2000	New Zealand	Best Sound	The Matrix	207992	Dane Davis	950003	W	Won
BAFTA Awards	2000	New Zealand	Best Sound	Star Wars: Episode I – The Phantom Menace	313474	Ben Burt	165453	N	Nominated
BAFTA Awards	2000	New Zealand	Best Sound	Star Wars: Episode I – The Phantom Menace	313474	Tom Bellfort	950012	N	Nominated
BAFTA Awards	2000	New Zealand	Best Sound	American Beauty	13789	Bob Beemer	950013	N	Nominated
BAFTA Awards	2000	New Zealand	Best Cinematography	The Matrix	207992	Bill Pope	950014	N	Nominated
BAFTA Awards	2000	New Zealand	Best Cinematography	American Beauty	13789	Conrad Hall	950015	W	Won
BAFTA Awards	2000	New Zealand	Best Production Design	The Matrix	207992	Owen Paterson	464716	N	Nominated
BAFTA Awards	2000	New Zealand	Best Production Design	Sleepy Hollow	304862	Rick Heinrichs	303143	W	Won
BAFTA Awards	2000	New Zealand	Best Editing	The Matrix	207992	Zach Staenberg	550813	N	Nominated
BAFTA Awards	2000	New Zealand	Best Editing	American Beauty	13789	Tariq Anwar	950016	W	Won
BAFTA Awards	2000	New Zealand	Best Editing	American Beauty	13789	Christopher Greenbury	283753	W	Won

Tabelreeks 2 – Eerste Normaalvorm

2NV

Met behulp van de Eerste Normaalvorm, kan de tabel *Tabelreeks 2 – Eerste Normaalvorm* omgezet worden naar een Tweede Normaalvorm. Om een tabel om te zetten naar een Tweede Normaalvorm, moeten alle niet-sleutel-attributen functioneel afhankelijk zijn van de gehele primaire sleutel. Functionele afhankelijkheid houdt in dat bij een waarde (A) slechts één andere waarde (P) kan horen.

Movie

Movie	Movie ID
The Matrix	207992
The Insider	160492
The Sixth Sense	303564
Fight Club	112290
Star Wars: Episode I – The Phantom Menace	313474
American Beauty	13789
Sleepy Hollow	304862

Person

Person	Person ID
Zach Staenberg	550813
William Goldenberg	276884

Paul Rubell	950001
David Rosenbloom	68042
Andrew Mondshein	54796
Ren Klyce	351397
Richard Hymns	950002
Dane Davis	950003
Ben Burt	165453
John Knoll	351981
Rob Coleman	191712
John Gaeta	950004
Janek Sirrs	540853
Steve Courtley	950005
Jon Thum	950006
David Lee	950007
John Reitz	950008
Gregg Rudloff	950009
David Campbell	950010
Tom Bellfort	950012
Bob Beemer	950013
Bill Pope	950014
Conrad Hall	950015
Owen Paterson	464716
Rick Heinrichs	303143
Tariq Anwar	950016
Christopher Greenbury	283753

Awardshow

Award	Year	Country
Academy Awards	2000	The Netherlands
BAFTA Awards	2000	New Zealand

Overview awards per year

Award	Year	Category	Movie ID	Person ID	Code	Description
Academy Awards	2000	Best Film Editing	207992	550813	W	Won
Academy Awards	2000	Best Film Editing	160492	276884	N	Nominated
Academy Awards	2000	Best Film Editing	160492	950001	N	Nominated
Academy Awards	2000	Best Film Editing	160492	68042	N	Nominated
Academy Awards	2000	Best Film Editing	303564	54796	N	Nominated
Academy Awards	2000	Best Sound Effects Editing	112290	351397	N	Nominated
Academy Awards	2000	Best Sound Effects Editing	112290	950002	N	Nominated
Academy Awards	2000	Best Sound Effects Editing	207992	950003	W	Won

Academy Awards	2000	Best Sound Effects Editing	313474	165453	N	Nominated
Academy Awards	2000	Best Visual Effects	313474	351981	N	Nominated
Academy Awards	2000	Best Visual Effects	313474	191712	N	Nominated
Academy Awards	2000	Best Visual Effects	207992	950004	W	Won
Academy Awards	2000	Best Visual Effects	207992	540853	W	Won
Academy Awards	2000	Best Visual Effects	207992	950005	W	Won
Academy Awards	2000	Best Visual Effects	207992	950006	W	Won
BAFTA Awards	2000	Best Sound	207992	950007	W	Won
BAFTA Awards	2000	Best Sound	207992	950008	W	Won
BAFTA Awards	2000	Best Sound	207992	950009	W	Won
BAFTA Awards	2000	Best Sound	207992	950010	W	Won
BAFTA Awards	2000	Best Sound	207992	950003	W	Won
BAFTA Awards	2000	Best Sound	313474	165453	N	Nominated
BAFTA Awards	2000	Best Sound	313474	950012	N	Nominated
BAFTA Awards	2000	Best Sound	13789	950013	N	Nominated
BAFTA Awards	2000	Best Cinematography	207992	950014	N	Nominated
BAFTA Awards	2000	Best Cinematography	13789	950015	W	Won
BAFTA Awards	2000	Best Production Design	207992	464716	N	Nominated
BAFTA Awards	2000	Best Production Design	304862	303143	W	Won
BAFTA Awards	2000	Best Editing	207992	550813	N	Nominated
BAFTA Awards	2000	Best Editing	13789	950016	W	Won
BAFTA Awards	2000	Best Editing	13789	283753	W	Won

Tabelreeks 3 – Tweede Normaalvorm

3NV

Als laatst moeten de bovenstaande tabellen (*Tabelreeks 3 – Tweede Normaalvorm*) omgezet worden naar de Derde Normaalvorm. Dit kan alleen als de tabel in de Tweede Normaalvorm staat én alle attributen die niet tot een sleutel behoren niet afhangen van een niet-sleutelattribuut. De onderstaande tabel (*Tabelreeks 4 – Derde Normaalvorm*) is het resultaat.

Movie

Movie	Movie ID
The Matrix	207992
The Insider	160492
The Sixth Sense	303564
Fight Club	112290
Star Wars: Episode I – The Phantom Menace	313474
American Beauty	13789
Sleepy Hollow	304862

Person

Person	Person ID
Zach Staenberg	550813
William Goldenberg	276884
Paul Rubell	950001
David Rosenbloom	68042
Andrew Mondschein	54796
Ren Klyce	351397
Richard Hymns	950002
Dane Davis	950003
Ben Burt	165453
John Knoll	351981
Rob Coleman	191712
John Gaeta	950004
Janek Sirrs	540853
Steve Courtley	950005
Jon Thum	950006
David Lee	950007
John Reitz	950008
Gregg Rudloff	950009
David Campbell	950010
Tom Bellfort	950012
Bob Beemer	950013
Bill Pope	950014
Conrad Hall	950015
Owen Paterson	464716
Rick Heinrichs	303143
Tariq Anwar	950016
Christopher Greenbury	283753

Description

Code	Description
W	Won
N	Nominated

Awardshow

Award	Year	Country
Academy Awards	2000	The Netherlands
BAFTA Awards	2000	New Zealand

Overview awards per year

Award	Year	Category	Movie ID	Person ID	Code
Academy Awards	2000	Best Film Editing	207992	550813	W
Academy Awards	2000	Best Film Editing	160492	276884	N
Academy Awards	2000	Best Film Editing	160492	950001	N
Academy Awards	2000	Best Film Editing	160492	68042	N
Academy Awards	2000	Best Film Editing	303564	54796	N
Academy Awards	2000	Best Sound Effects Editing	112290	351397	N
Academy Awards	2000	Best Sound Effects Editing	112290	950002	N
Academy Awards	2000	Best Sound Effects Editing	207992	950003	W
Academy Awards	2000	Best Sound Effects Editing	313474	165453	N
Academy Awards	2000	Best Visual Effects	313474	351981	N
Academy Awards	2000	Best Visual Effects	313474	191712	N
Academy Awards	2000	Best Visual Effects	207992	950004	W
Academy Awards	2000	Best Visual Effects	207992	540853	W
Academy Awards	2000	Best Visual Effects	207992	950005	W
Academy Awards	2000	Best Visual Effects	207992	950006	W
BAFTA Awards	2000	Best Sound	207992	950007	W
BAFTA Awards	2000	Best Sound	207992	950008	W
BAFTA Awards	2000	Best Sound	207992	950009	W
BAFTA Awards	2000	Best Sound	207992	950010	W
BAFTA Awards	2000	Best Sound	207992	950003	W
BAFTA Awards	2000	Best Sound	313474	165453	N
BAFTA Awards	2000	Best Sound	313474	950012	N
BAFTA Awards	2000	Best Sound	13789	950013	N
BAFTA Awards	2000	Best Cinematography	207992	950014	N
BAFTA Awards	2000	Best Cinematography	13789	950015	W
BAFTA Awards	2000	Best Production Design	207992	464716	N
BAFTA Awards	2000	Best Production Design	304862	303143	W
BAFTA Awards	2000	Best Editing	207992	550813	N
BAFTA Awards	2000	Best Editing	13789	950016	W
BAFTA Awards	2000	Best Editing	13789	283753	W

Tabelreeks 4 – Derde Normaalvorm