

# Database Systems Final Project

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# General Information

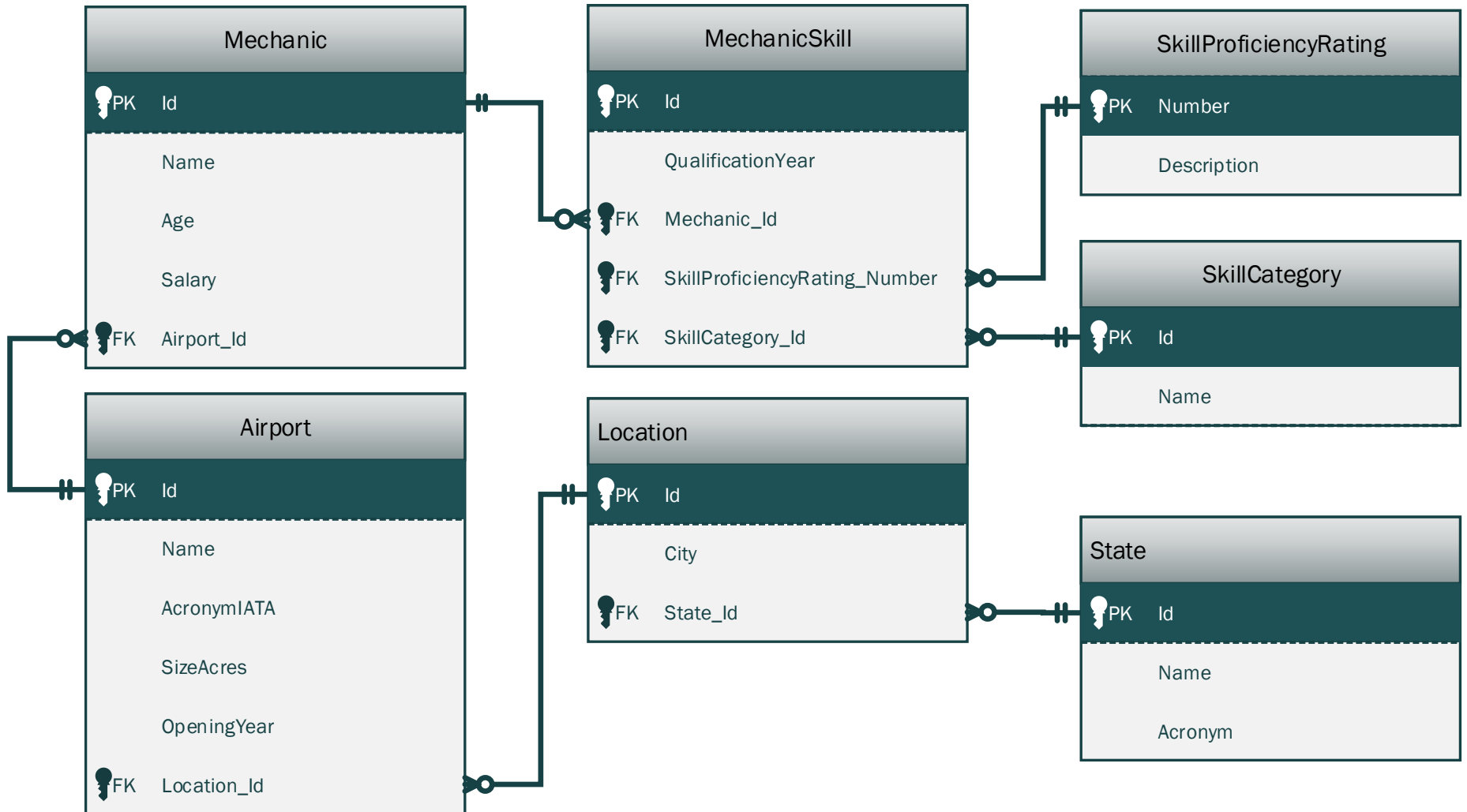
- The names of the database objects described below was written based on *SQL Server Standards Naming Conventions V.15* <sup>1</sup>;
- The ERD was created using the software *Microsoft Visio 2016*;
- The Database is currently maintained inside the *IndianaTech2.net* PH-PMYAdmin;
- There are 14 Queries inside this document. The last 2 two queries have the same purpose, the difference is about of which New York condition was used: The first refers the New York City, and the second refers the New York State;
- Number of rows from each table in the database:
  - **State**: 50;
  - **Location**: 90;
  - **Airport**: 98;
  - **Mechanic**: 196;
  - **MechanicSkill**: 392;
  - **SkillCategory**: 10;
  - **SkillProficiencyRating**: 4.
- Most data about the Airports was referred using real information found inside the Airport websites or Wikipedia pages.

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<sup>1</sup>[http://www.isbe.net/ILDS/pdf/SQL\\_server\\_standards.pdf](http://www.isbe.net/ILDS/pdf/SQL_server_standards.pdf)

# ABC Airlines Entity-Relationship Diagram

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Indiana Institute of Technology (Indiana Tech) - 2015



# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 06:55 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `Name`, `Age` FROM `ABC\_Mechanic` LIMIT 0, 500;

**Rows:** 196

Name	Age
Kylie Minogue	30
Arya Stark	19
Abel Magwitch	23
Abra Bacon	30
Abraham Van Helsing	40
Adam Trask	22
Agnes Wickfield	31
Captain Ahab	41
Albus Dumbledore	21
Alex	32
Dr Alexandre Manette	42
Alice	20
Allan Woodcourt	33
Amelia Sedley	43
Beowulf	19
Don Quixote	34
Sancho Panza	44
Robinson Crusoe	18
Lemuel Gulliver	35
Clarissa Harlowe	45
Tom Jones	24
Tristram Shandy	36
Isabelle de Merteuil	46
Sebastian Valmont	18
Anne Steele	28
Colonel Brandon	38
Edward Ferrars	48

Elinor Dashwood	58
Fanny Dashwood	68
John Dashwood	19
John Willoughby	29
Lucy Steele	39
Margaret Dashwood	49
Marianne Dashwood	59
Robert Ferrars	69
Caroline Bingley	20
Lady Catherine de Bourgh	30
Charles Bingley	40
Charlotte Lucas	50
George Wickham	60
Georgiana Darcy	21
Catherine Bennet	31
Elizabeth Bennet	41
Fitzwilliam Darcy	51
Jane Bennet	61
Lydia Bennet	22
Mary Bennet	32
Edmund Bertram	42
Fanny Price	52
Henry Crawford	62
Julia Bertram	23
Maria Bertram	33
Mary Crawford	43
Sir Thomas Bertram	53
William Price	63
Augusta Elton	24
Anne Navarro	34
Frank Churchill	44
Harriet Smith	54
Henry Woodhouse	64
Isabella Knightley	25
Kacha Fergusson	35
Jane Fairfax	45

Philip Elton	55
Todd Nenninger	65
Emma Woodhouse	26
George Knightley	36
Catherine Morland	46
Eleanor Tilney	56
John Jullian Gray	66
Frederick Tilney	27
Henry Tilney	37
Isabella Thorpe	47
James Morland	57
Erwin Fraser	67
Mat Gladys	28
John Thorpe	38
Anne Elliot	48
Charles Musgrove	58
Elizabeth Elliot	68
Captain Frederick Wentworth	29
Henrietta Musgrove	39
Robert Williams	49
Hope Garrison	59
Mac Bauer	69
James Benwick	20
Louisa Musgrove	30
Mary Musgrove	40
Sophia Croft	50
Dr Victor Frankenstein	60
Sir Walter Elliot	21
William Elliot	31
Charlie Quayle	41
Adam Clouser Davila	51
Peter Anders	61
Don Juan	22
Claude Frollo	32
Clopin Trouillefou	42
Esmeralda	52

Peer Irizarry	62
Name	Age
Cesar Bloom	23
Phoebus de Chateaupers	33
Pierre Gringoire	43
Becky Ulrich	53
Quasimodo	63
Bill Sikes	24
Jack Dawkins	34
Nancy	44
Noah Claypole	54
Oliver Twist	64
Rose Maylie	25
Morgana Dawson Kritzer	35
Carol Silverman	45
Arthur gride	55
Fanny Squeers	65
Lord Frederick Verisopht	26
Henrietta Petowker	36
John Browdie	46
Kate Nickleby	56
Paul Petite	66
Madeline Bray	27
Matilda Price	37
Sir Mulberry Hawk	47
Erika Amge	57
Mary Lennox	67
Peter Rabbit	28
Thomasina Tittlemouse	38
Felicity King	48
Ana Paula Arosio	58
Sandra Annenberg	68
Wendy Darling	29
Tarzan	39
Regina Spektor	49
Gertrude Morel	59

Paul Morel	69
Gregor Samsa	20
Stephen Dedalus	30
Hercule Poirot	40
Firion	50
Maria	60
Guy	21
Tom Cruise	31
Leon	41
Minwu	51
Josef	61
Gordon	22
Leila	32
Ricard	42
Scott	52
Taylor Swift	62
Justin Bieber	23
Nicki Minaj	33
Luneth	43
Arc	53
Refia	63
Ingus	24
Chris Brown	34
Cecil	44
Jessica Simpson	54
Jack Sparrow	64
Artemicion	25
Balthier	35
Squall Leonhart	45
Shantotto	55
Biggs	65
Wedge	26
Stiltzkin	36
Cid	46
Willian Smith	56
Cloud Strife	66



Luso Clemens	27
Montblanc	37
Aerith Gainsborough	47
Harry Potter	57
Snow White	67
Bartz Klauser	28
Angelina Jolie	38
Brad Pitt	48
Terra Branford	58
Zidane Tribal	68
Vayne Solidor	29
Justin Timberlake	39
Emperor Mateus	49
Galenth Disley	59
Kefka Palazzo	69
Antonio Bandejas	20
Penélope Cruz	30
Mariah Carey	40
Renato Russo	50
Albert Einstein	60
Isaac Newton	21
Galileo Galilei	31
Marie Curie	41
Charles Darwin	51
James Clerk Maxwell	61
Nikola Tesla	19

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 07:24 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Airport`.`Id`, `ABC\_Airport`.`Name`, `ABC\_Airport`.`AcronymIATA`, `ABC\_Airport`.`SizeAcres`, `ABC\_Airport`.`OpeningYear`, `ABC\_Location`.`City`, `ABC\_State`.`Name` FROM `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` = 'Ohio' AND `ABC\_Airport`.`SizeAcres` >= '20' AND `ABC\_Airport`.`OpeningYear` >= '1935' ORDER BY `ABC\_Airport`.`SizeAcres` ASC LIMIT 0, 500;

**Rows:** 2

Id	Name	AcronymIATA	SizeAcres	OpeningYear	City	Name
67	Port Columbus International Airport	CMH	2185	1939	Columbus	Ohio
68	Rickenbacker International Airport	LCK	4342	1942	Columbus	Ohio

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 07:27 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Airport`.`Id`, `ABC\_Airport`.`Name`, `ABC\_Airport`.`AcronymIATA`, `ABC\_Airport`.`SizeAcres`, `ABC\_Airport`.`OpeningYear`, `ABC\_Location`.`City`, `ABC\_State`.`Name` FROM `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` = 'Ohio' AND `ABC\_Airport`.`SizeAcres` >= '20' AND `ABC\_Airport`.`OpeningYear` >= '1935' LIMIT 0, 500;

**Rows:** 2

Id	Name	AcronymIATA	SizeAcres	OpeningYear	City	Name
67	Port Columbus International Airport	CMH	2185	1939	Columbus	Ohio
68	Rickenbacker International Airport	LCK	4342	1942	Columbus	Ohio

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 07:31 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT AVG(`ABC\_Airport`.`SizeAcres`) FROM `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` = 'Ohio' AND `ABC\_Airport`.`OpeningYear` >= '1935' LIMIT 0, 500;

**Rows:** 1

AVG(ABC_Airport`.`SizeAcres`)
3263.5

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 07:33 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT COUNT(\*) FROM `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE  
`ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` =  
`ABC\_State`.`Id` AND `ABC\_State`.`Name` = 'Ohio' AND `ABC\_Airport`.`OpeningYear` >= '1935'  
LIMIT 0, 500;

**Rows:** 1

COUNT(*)
2

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 07:41 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_State`.`Name`, COUNT(\*) FROM `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_Airport`.`OpeningYear` >= '1935' GROUP BY `ABC\_State`.`Name` LIMIT 0, 500;

**Rows:** 27

Name	COUNT(*)
Alaska	1
California	2
Colorado	1
Connecticut	1
Delaware	1
Florida	6
Hawaii	3
Illinois	1
Indiana	1
Kentucky	1
Louisiana	1
Maryland	1
Missouri	1
Nebraska	1
New Mexico	1
New York	2
North Carolina	1
North Dakota	1
Ohio	2
Oklahoma	1
Pennsylvania	1
South Dakota	1
Tennessee	1
Texas	3
Virginia	2

Washington	2
West Virginia	1

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 07:47 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_State`.`Name`, COUNT(\*) FROM `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_Airport`.`OpeningYear` >= '1935' GROUP BY `ABC\_State`.`Name` HAVING COUNT(\*) >= '5' LIMIT 0, 500;

**Rows:** 1

Name	COUNT(*)
Florida	6



# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 07:52 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Mechanic`.`Name`, `ABC\_State`.`Name` FROM `ABC\_Mechanic`, `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE `ABC\_Mechanic`.`Airport\_Id` = `ABC\_Airport`.`Id` AND `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` = 'Ohio' LIMIT 0, 500;

**Rows:** 8

Name	Name
Wendy Darling	Ohio
Tarzan	Ohio
Regina Spektor	Ohio
Gertrude Morel	Ohio
Paul Morel	Ohio
Gregor Samsa	Ohio
Stephen Dedalus	Ohio
Hercule Poirot	Ohio

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 08:17 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Mechanic`.`Name`, `ABC\_SkillCategory`.`Name`,  
`ABC\_SkillProficiencyRating`.`Number` FROM `ABC\_Mechanic`, `ABC\_MechanicSkill`,  
`ABC\_SkillCategory`, `ABC\_SkillProficiencyRating` WHERE `ABC\_MechanicSkill`.`Mechanic\_Id` =  
`ABC\_Mechanic`.`Id` AND `ABC\_MechanicSkill`.`SkillCategory\_Id` = `ABC\_SkillCategory`.`Id`  
AND `ABC\_MechanicSkill`.`SkillProficiencyRating\_Number` =  
`ABC\_SkillProficiencyRating`.`Number` AND `ABC\_SkillCategory`.`Name` = 'Fan Blade Replacement'  
AND `ABC\_SkillProficiencyRating`.`Number` = '4' LIMIT 0, 500;

**Rows:** 19

Name	Name	Number
Lemuel Gulliver	Fan Blade Replacement	4
Fanny Dashwood	Fan Blade Replacement	4
Charlotte Lucas	Fan Blade Replacement	4
Fanny Price	Fan Blade Replacement	4
Harriet Smith	Fan Blade Replacement	4
Eleanor Tilney	Fan Blade Replacement	4
Charles Musgrove	Fan Blade Replacement	4
Sophia Croft	Fan Blade Replacement	4
Esmeralda	Fan Blade Replacement	4
Noah Claypole	Fan Blade Replacement	4
Kate Nickleby	Fan Blade Replacement	4
Ana Paula Arosio	Fan Blade Replacement	4
Wendy Darling	Fan Blade Replacement	4
Firion	Fan Blade Replacement	4
Scott	Fan Blade Replacement	4
Jessica Simpson	Fan Blade Replacement	4
Willian Smith	Fan Blade Replacement	4
Terra Branford	Fan Blade Replacement	4
Renato Russo	Fan Blade Replacement	4

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 08:16 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Mechanic`.`Name`, `ABC\_SkillCategory`.`Name`,  
`ABC\_SkillProficiencyRating`.`Number`, `ABC\_State`.`Name` FROM `ABC\_Mechanic`,  
`ABC\_MechanicSkill`, `ABC\_SkillCategory`, `ABC\_SkillProficiencyRating`, `ABC\_Airport`,  
`ABC\_Location`, `ABC\_State` WHERE `ABC\_MechanicSkill`.`Mechanic\_Id` = `ABC\_Mechanic`.`Id`  
AND `ABC\_MechanicSkill`.`SkillCategory\_Id` = `ABC\_SkillCategory`.`Id` AND  
`ABC\_MechanicSkill`.`SkillProficiencyRating\_Number` = `ABC\_SkillProficiencyRating`.`Number`  
AND `ABC\_Mechanic`.`Airport\_Id` = `ABC\_Airport`.`Id` AND `ABC\_Airport`.`Location\_Id` =  
`ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` =  
'Ohio' AND `ABC\_SkillCategory`.`Name` = 'Fan Blade Replacement' AND  
`ABC\_SkillProficiencyRating`.`Number` = '4' LIMIT 0, 500;

**Rows:** 1

Name	Name	Number	Name
Wendy Darling	Fan Blade Replacement	4	Ohio

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 08:22 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Location`.`City`, `ABC\_State`.`Name`, SUM(`ABC\_Mechanic`.`Salary`)  
FROM `ABC\_Mechanic`, `ABC\_Airport`, `ABC\_Location`, `ABC\_State` WHERE  
`ABC\_Mechanic`.`Airport\_Id` = `ABC\_Airport`.`Id` AND `ABC\_Airport`.`Location\_Id` =  
`ABC\_Location`.`Id` AND `ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` =  
'Ohio' GROUP BY `ABC\_Location`.`City` LIMIT 0, 500;

**Rows:** 3

City	Name	SUM(`ABC_Mechanic`.`Salary`)
Cleveland	Ohio	188000.00
Columbus	Ohio	402300.00
Dayton	Ohio	198000.00

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 08:31 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT Name, AcronymIATA, SizeAcres FROM `ABC\_Airport` WHERE SizeAcres = (SELECT MAX(SizeAcres) FROM `ABC\_Airport`) LIMIT 0, 500;

**Rows:** 1

Name	AcronymIATA	SizeAcres
Denver International Airport	DEN	34000

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 08:40 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Airport`.`Name`, `ABC\_Airport`.`AcronymIATA`,  
`ABC\_Airport`.`SizeAcres`, `ABC\_Location`.`City` FROM `ABC\_Airport`, `ABC\_Location` WHERE  
`ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`City` = 'New York' AND  
SizeAcres = ( SELECT MAX(`ABC\_Airport`.`SizeAcres`) FROM `ABC\_Airport`, `ABC\_Location`  
WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND `ABC\_Location`.`City` = 'New  
York') LIMIT 0, 500;

**Rows:** 1

Name	AcronymIATA	SizeAcres	City
John F. Kennedy International Airport	JFK	4930	New York

# SQL result

**Host:** localhost

**Database:** jhmaiademora01

**Generation Time:** Dec 09, 2015 at 08:38 AM

**Generated by:** phpMyAdmin 3.4.5 / MySQL 5.5.16

**SQL query:** SELECT `ABC\_Airport`.`Name`, `ABC\_Airport`.`AcronymIATA`,  
`ABC\_Airport`.`SizeAcres`, `ABC\_State`.`Name` FROM `ABC\_Airport`, `ABC\_Location`,  
`ABC\_State` WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND  
`ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` = 'New York' AND  
SizeAcres = ( SELECT MAX(`ABC\_Airport`.`SizeAcres`) FROM `ABC\_Airport`, `ABC\_Location`,  
`ABC\_State` WHERE `ABC\_Airport`.`Location\_Id` = `ABC\_Location`.`Id` AND  
`ABC\_Location`.`State\_Id` = `ABC\_State`.`Id` AND `ABC\_State`.`Name` = 'New York') LIMIT 0, 500;

**Rows:** 1

Name	AcronymIATA	SizeAcres	Name
John F. Kennedy International Airport	JFK	4930	New York