

# Research Document (MySQL Spatial Data Types, Storing spatial data and using it to create a Restful Web service)

**Aim:** The aim of the document is to successfully research ways to be able to store geo spatial data in MySQL database

**Why:** Currently (24 Feb, 2017) I have been using SAP Hana HCP but the issue is its not free and is very expensive to move from trail to pro version, so the better alternative is MySQL if I am successfully able to implement what I was able to do with HCP. And, the advantages will be free of cost, HCP trail needs restart every 12 hours and auto deletes after 6 days which is a big disadvantage, MySQL will allow 99% uptime for web service.

\*\*\*\*\*

Importance of the external resources used based on Level:

*Level (High) – Very helpful and important*

*Level (Medium) – Important and Some what helpful and related*

*Level (Low) – Helped to see some light, but not very useful resource.*

\*\*\*\*\*

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\*\*\*\*\*Creating a table with geometry\*\*\*\*\*

create table myspatialdata (id integer(7), bpolygon Geometry, mpoint Geometry);

\*\*\*\*\*

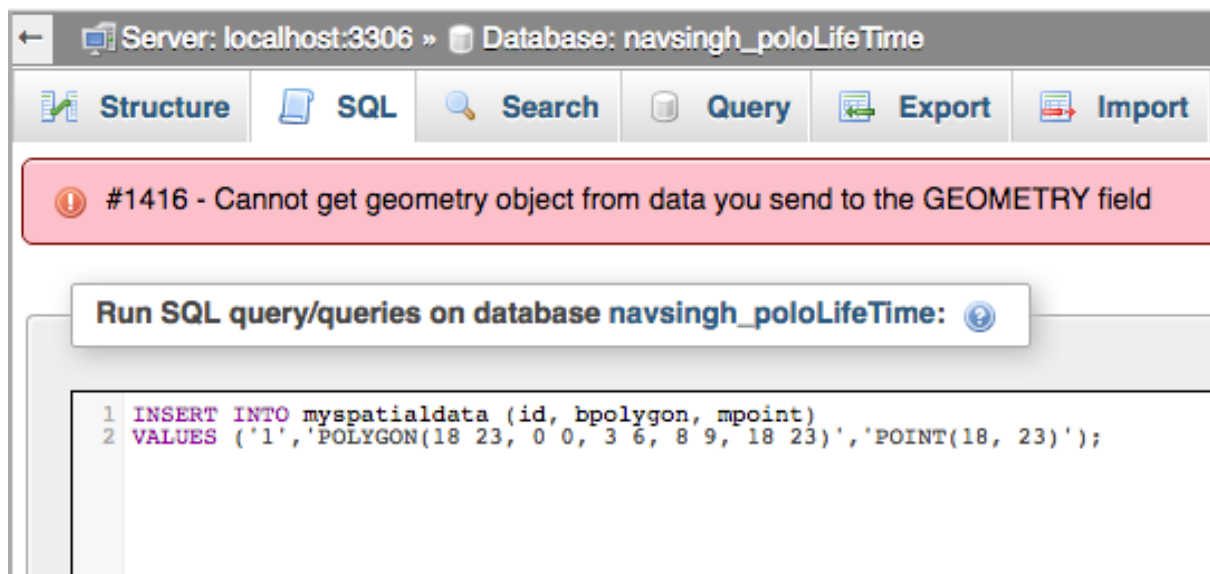
Query to show the columns in the table:

**SHOW COLUMNS FROM** myspatialdata

Field	Type	Null	Key	Default	Extra
id	int(7)	YES		NULL	
bpolygon	geometry	YES		NULL	
mpoint	geometry	YES		NULL	

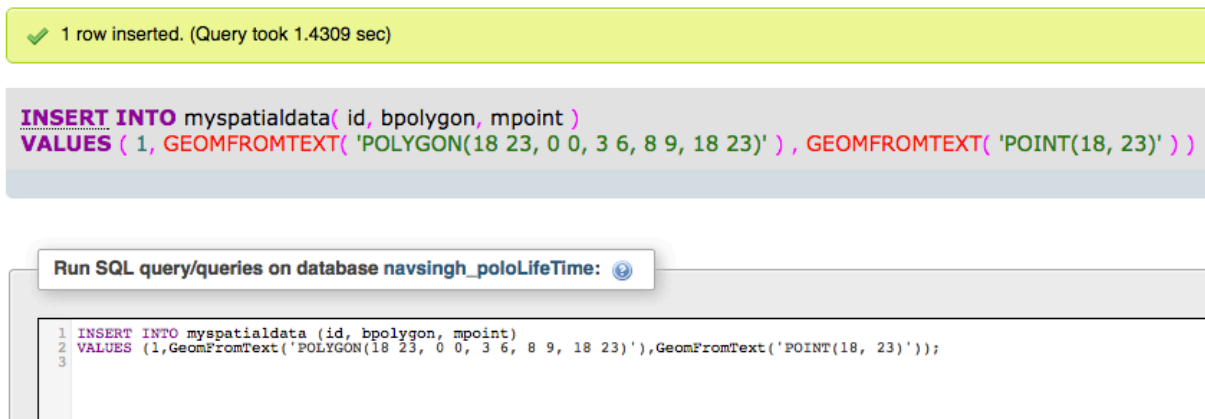
\*\*\*Quite close to solving problem of inserting spatial data into MySQL\*\*\*

```
INSERT INTO myspatialdata (id, bpolygon, mpoint)
VALUES ('1','POLYGON(18 23, 0 0, 3 6, 8 9, 18 23)','POINT(18, 23)');
```



\*\*\*\*Working SQL Statement to insert spatial data in MySQL (Polygon and Point)\*\*\*\*\*

```
INSERT INTO myspatialdata (id, bpolygon, mpoint)
VALUES (1,GeomFromText('POLYGON(18 23, 0 0, 3 6, 8 9, 18 23)'),GeomFromText('POINT(18, 23)'));
```



```
INSERT INTO myspatialdata (id, bpolygon, mpoint)
VALUES (2,GeomFromText('POLYGON(-74.13591384887695 40.93750722242824,-
74.13522720336914 40.929726129575016,-74.15102005004883 40.9329683629703,-
74.14329528808594 40.94256444133327)'),GeomFromText('POINT(-
74.13591384887695,40.93750722242824)'));
```

```
INSERT INTO myspatialdata( id, bpolygon, mpoint )
VALUES ( 2, GEOMFROMTEXT(
'POLYGON(-74.13591384887695 40.93750722242824,-74.13522720336914 40.929726129575016,-74.15102005004883 40.932968362
), GEOMFROMTEXT( 'POINT(-74.13591384887695,40.93750722242824)' ) )
```

[ Edit ] [ Create PHP Code ]

Run SQL query/queries on database navsingh\_poloLifeTime: 

```
1 INSERT INTO myspatialdata (id, bpolygon, mpoint)
2 VALUES (2,GeomFromText(' POLYGON(-74.13591384887695 40.93750722242824,-74.13522720336914 40.929726129575016,-74.15102005004883
3 40.9329683629703,-74.14329528808594 40.94256444133327)'),GeomFromText('POINT(-74.13591384887695,40.93750722242824)'));
```

Note: Useful documentation on MySQL Spatial Data Types

<http://www.w3resource.com/mysql/mysql-spatial-data-types.php>

(Level: High)

Inserting Coordinates into MySQL (Stack Flow)

<http://stackoverflow.com/questions/15453084/inserting-coordinates-into-mysql-polyfromtext-sql-syntax-error-returning-nul>

(Level: Low)

\*\*\*\*\*The end of the Inserting Spatial data like Polygon and Point in to database table\*\*\*\*\*

\*\*\*\*\*

RESEARCH RESULTS: FAILED

\*\*\*\*\*

Inserting Geo-spatial Polygon into the MySQL Database

```
INSERT INTO `Buildings` (`Name`, `Shape`) VALUES ('Apt 15',
PolyFromText('POLYGON((50.866753 5.686455, 50.859819 5.708942, 50.851475
5.722675, 50.841611 5.720615, 50.834023 5.708427, 50.840744 5.689373, 50.858735
5.673923, 50.866753 5.686455)))));
```

Reference: <https://gis.stackexchange.com/questions/23900/how-to-add-polygon-in-mysql-database>

Column	Type	Function	Null	Value
Name	varchar(50)			Apt 16
Shape	polygon	PolyFromText		POLYGON((53.37585 -6.31014,53.38348 -6.1844,53.32062 -6.204;

[Edit/Insert](#)

[Go](#)

RESEARCH RESULTS: PASSED (Working)

## 1 Resources for Functionanl Requirements

Requirement 7:

Requirement 8: Photo Upload

Image upload example with Swift and PHP - <http://swiftdeveloperblog.com/image-upload-example/>

Requirement 9:

## 2 Final Report Database

Database Type: MySQL

Language used: SQL

Database name: navsingh\_MRPro

Tables:

Table Name	Description
mrp_companies	Stores company information
mrp_buildings	Stores buildings coordinates and other relevant information
mrp_meeting_rooms	Stores meeting rooms coordinates and other relevant information

Tools: Using phpMyAdmin

Explain what phpMyAdmin is ? point to the documentation ?

[Tables](#)

1- Companies Table (mrp\_companies) to store all the information regarding the different companies this will allow us to –

- 1- Use app for multiple companies/organization's/institutions by storing data for different companies and use it in a single app (example- city council can buy the app to list the different public properties/companies and the available buildings/meeting rooms in them)
- 2- or just use the app for one company (example – Our college – for NCI use only can be deployed as an internal app)

Table name:  Add  column(s)

Name	Type	Length/Values	Default	Collation	Attributes	Null	Index
companyId	INT	120	None			<input type="checkbox"/>	PRIMARY
name	VARCHAR	240	None			<input type="checkbox"/>	---
headquarters	VARCHAR	480	None			<input type="checkbox"/>	---
website	VARCHAR	120	None			<input type="checkbox"/>	---
email	VARCHAR	120	None			<input type="checkbox"/>	---
ceo	VARCHAR	120	None			<input type="checkbox"/>	---
industry	VARCHAR	120	None			<input type="checkbox"/>	---
tagline	VARCHAR	120	None			<input type="checkbox"/>	---

Server: localhost:3306 » Database: navsingh\_MRPro » Table: mrp\_companies

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
<input type="checkbox"/> 1	<b>companyId</b>	int(120)			No	None		
<input type="checkbox"/> 2	<b>name</b>	varchar(240)	latin1_swedish_ci		No	None		
<input type="checkbox"/> 3	<b>headquarters</b>	varchar(480)	latin1_swedish_ci		No	None		
<input type="checkbox"/> 4	<b>website</b>	varchar(120)	latin1_swedish_ci		No	None		
<input type="checkbox"/> 5	<b>email</b>	varchar(120)	latin1_swedish_ci		No	None		
<input type="checkbox"/> 6	<b>ceo</b>	varchar(120)	latin1_swedish_ci		No	None		
<input type="checkbox"/> 7	<b>industry</b>	varchar(120)	latin1_swedish_ci		No	None		
<input type="checkbox"/> 8	<b>tagline</b>	varchar(120)	latin1_swedish_ci		No	None		

```
CREATE TABLE `navsingh_MRPro`.`mrp_companies` ( `companyId` INT(120) NOT NULL , `name` VARCHAR(240) NOT NULL , `headquarters` VARCHAR(480) NOT NULL , `website` VARCHAR(120) NOT NULL , `email` VARCHAR(120) NOT NULL , `ceo` VARCHAR(120) NOT NULL , `industry` VARCHAR(120) NOT NULL , `tagline` VARCHAR(120) NOT NULL , PRIMARY KEY (`companyId`)) ENGINE =MyISAM;
```

```
CREATE TABLE `navsingh_MRPro`.`mrp_companies` (
  `companyId` INT(120) NOT NULL ,
  `name` VARCHAR(240) NOT NULL ,
  `headquarters` VARCHAR(480) NOT NULL ,
  `website` VARCHAR(120) NOT NULL ,
  `email` VARCHAR(120) NOT NULL ,
  `ceo` VARCHAR(120) NOT NULL ,
  `industry` VARCHAR(120) NOT NULL ,
  `tagline` VARCHAR(120) NOT NULL , PRIMARY KEY (`companyId`)) ENGINE = MyISAM;
```

2 - Buildings table (mrp\_buildings) to store all the information regarding buildings and also their co-ordinates (using geospatial features of MySQL – here we are using Polygon/Geometry)

Table name:  Add  column(s)

Structure							
Name	Type	Length/Values	Default	Collation	Attributes	Null	Index
buildingId	INT	120	None			<input type="checkbox"/>	PRIMARY PRIMARY
companyId	INT	120	None			<input type="checkbox"/>	---
name	VARCHAR	120	None			<input type="checkbox"/>	---
noOfFloors	INT	120	None			<input type="checkbox"/>	---
coordinates	POLYGON		None			<input type="checkbox"/>	---
city	VARCHAR	120	None			<input type="checkbox"/>	---
country	VARCHAR	120	None			<input type="checkbox"/>	---
address	VARCHAR	240	None			<input type="checkbox"/>	---
phone	VARCHAR	120	None			<input type="checkbox"/>	---
email	VARCHAR	120	None			<input type="checkbox"/>	---

Server: localhost:3306 » Database: navsingh_MRPro » Table: mrp_buildings										
<span>Browse</span> <span>Structure</span> <span>SQL</span> <span>Search</span> <span>Insert</span> <span>Export</span> <span>Import</span>										
	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Act
<input type="checkbox"/>	1	<b>buildingId</b>	int(120)			No	None			
<input type="checkbox"/>	2	<b>companyId</b>	int(120)			No	None			
<input type="checkbox"/>	3	<b>name</b>	varchar(120)	latin1_swedish_ci		No	None			
<input type="checkbox"/>	4	<b>noOfFloors</b>	int(120)			No	None			
<input type="checkbox"/>	5	<b>coordinates</b>	polygon			No	None			
<input type="checkbox"/>	6	<b>city</b>	varchar(120)	latin1_swedish_ci		No	None			
<input type="checkbox"/>	7	<b>country</b>	varchar(120)	latin1_swedish_ci		No	None			
<input type="checkbox"/>	8	<b>address</b>	varchar(240)	latin1_swedish_ci		No	None			
<input type="checkbox"/>	9	<b>phone</b>	varchar(120)	latin1_swedish_ci		No	None			
<input type="checkbox"/>	10	<b>email</b>	varchar(120)	latin1_swedish_ci		No	None			

```
CREATE TABLE `navsingh_MRPro`.`mrp_meeting_rooms` (
  `meetingRoomId` INT(120) NOT NULL ,
  `buildingId` INT(120) NOT NULL ,
  `name` VARCHAR(120) NOT NULL ,
  `floorNumber` INT(120) NOT NULL ,
  `coordinates` POINT NOT NULL ,
  `capacity` INT(120) NOT NULL ,
  `type` VARCHAR(120) NOT NULL ,
  `phone` VARCHAR(120) NOT NULL ,
  `email` VARCHAR(120) NOT NULL ,
  `directions` VARCHAR(480) NOT NULL , PRIMARY KEY (`meetingRoomId`))ENGINE = MyISAM;
```

```
CREATE TABLE `navsingh_MRPro`.`mrp_buildings` (
  `buildingId` INT(120) NOT NULL ,
  `companyId` INT(120) NOT NULL ,
  `name` VARCHAR(120) NOT NULL ,
  `noOfFloors` INT(120) NOT NULL ,
  `coordinates` POLYGON NOT NULL ,
  `city` VARCHAR(120) NOT NULL ,
  `country` VARCHAR(120) NOT NULL ,
  `address` VARCHAR(240) NOT NULL ,
  `phone` VARCHAR(120) NOT NULL ,
  `email` VARCHAR(120) NOT NULL , PRIMARY KEY (`buildingId`)) ENGINE = MyISAM;
```

3 – Meeting Rooms Table (mrp\_meeting\_rooms) to store information regarding meeting rooms

Table name:  Add  column(s)

Name	Type	Length/Values	Default	Collation	Attributes	Null	Index
meetingRoomId	INT	120	None			<input type="checkbox"/>	PRIMARY
buildingId	INT	120	None			<input type="checkbox"/>	---
name	VARCHAR	120	None			<input type="checkbox"/>	---
floorNumber	INT	120	None			<input type="checkbox"/>	---
coordinates	POINT		None			<input type="checkbox"/>	---
capacity	INT	120	None			<input type="checkbox"/>	---
type	VARCHAR	120	None			<input type="checkbox"/>	---
phone	VARCHAR	120	None			<input type="checkbox"/>	---
email	VARCHAR	120	None			<input type="checkbox"/>	---

Server: localhost:3306 » Database: navsingh\_MRPro » Table: mrp\_meeting\_rooms

#	Name	Type	Collation	Attributes	Null	Default	Comments
1	meetingRoomId	int(120)			No	None	
2	buildingId	int(120)			No	None	
3	name	varchar(120)	latin1_swedish_ci		No	None	
4	floorNumber	int(120)			No	None	
5	coordinates	point			No	None	
6	capacity	int(120)			No	None	
7	type	varchar(120)	latin1_swedish_ci		No	None	
8	phone	varchar(120)	latin1_swedish_ci		No	None	
9	email	varchar(120)	latin1_swedish_ci		No	None	
10	directions	varchar(480)	latin1_swedish_ci		No	None	

```
CREATE TABLE `navsingh_MRPro`.`mrp_meeting_rooms` ( `meetingRoomId` INT(120) NOT NULL , `buildingId` INT(120) NOT NULL , `name` VARCHAR(120) NOT NULL , `floorNumber` INT(120) NOT NULL , `coordinates` POINT NOT NULL , `capacity` INT(120) NOT NULL , `type` VARCHAR(120) NOT NULL , `phone` VARCHAR(120) NOT NULL , `email` VARCHAR(120) NOT NULL , `directions` VARCHAR(480) NOT NULL , PRIMARY KEY (`meetingRoomId`)) ENGINE = MyISAM;
```



```
CREATE TABLE `navsingh_MRPro`.`mrp_meeting_rooms` (
  `meetingRoomId` INT(120) NOT NULL ,
  `buildingId` INT(120) NOT NULL ,
  `name` VARCHAR(120) NOT NULL ,
  `floorNumber` INT(120) NOT NULL ,
  `coordinates` POINT NOT NULL ,
  `capacity` INT(120) NOT NULL ,
  `type` VARCHAR(120) NOT NULL ,
  `phone` VARCHAR(120) NOT NULL ,
  `email` VARCHAR(120) NOT NULL ,
  `directions` VARCHAR(480) NOT NULL , PRIMARY KEY (`meetingRoomId`))ENGINE = MyISAM;
```

## Inserting Data into Tables

### Inserting data into mrp\_buildings table

```
INSERT INTO `mrp_buildings` (`buildingId`, `companyId`, `name`, `noOfFloors`,
`coordinates`, `city`, `country`, `address`, `phone`, `email`) VALUES ('1', '1', 'National
College of Ireland', '4', PolyFromText('POLYGON((33.294974 -2.426631, 53.294847 -
6.426419, 73.294289 -6.426888, 13.294326 -6.427194, 43.294974 -6.426631, 33.294974 -
2.426631)))', 'Dublin', 'Ireland', 'Mayor Street, IFSC, Dublin 1, D01 Y300', '01449 8500',
'admissions@ncirl.ie');
```

✓ 1 row inserted.

```
INSERT INTO `mrp_buildings` (`buildingId`, `companyId`, `name`, `noOfFloors`, `coordinates`, `city`, `country`, `address`, `phone`, `email`) VALUES ('1',
'1', 'National College of Ireland', '4', PolyFromText('POLYGON((33.294974 -2.426631, 53.294847 -6.426419, 73.294289 -6.426888, 13.294326 -6.427194, 43.294974 -
-6.426631, 33.294974 -2.426631)))', 'Dublin', 'Ireland', 'Mayor Street, IFSC, Dublin 1, D01 Y300', '01449 8500', 'admissions@ncirl.ie');
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

Run SQL query/queries on table navsingh\_MRPro.mrp\_buildings: ⓘ

```
1 INSERT INTO `mrp_buildings` (`buildingId`, `companyId`, `name`, `noOfFloors`, `coordinates`,
`city`, `country`, `address`, `phone`, `email`) VALUES ('1', '1', 'National College of Ireland',
'4', PolyFromText('POLYGON((33.294974 -2.426631, 53.294847 -6.426419, 73.294289 -6.426888,
13.294326 -6.427194, 43.294974 -6.426631, 33.294974 -2.426631)))', 'Dublin', 'Ireland', 'Mayor
Street, IFSC, Dublin 1, D01 Y300', '01449 8500', 'admissions@ncirl.ie');
```

SELECT \*

SELECT

INSERT

UPDATE

DELETE

Clear

Format

Get auto-saved query

☐ Bind parameters ⓘ

Columns

buildingId  
companyId  
name  
noOfFloors  
coordinates  
city  
country  
address  
phone  
email

<<

-- Inserting a building in buildings table along with building coordinate

```
INSERT INTO `mrp_buildings` (  
  `buildingId`, `companyId`, `name`, `noOfFloors`,  
  `coordinates`, `city`, `country`, `address`, `phone`,  
  `email`) VALUES (  
    '1', '1', 'National College of Ireland', '4',  
    PolyFromText('POLYGON((33.294974 -2.426631, 53.294847 -6.426419,  
    73.294289 -6.426888, 13.294326 -6.427194, 43.294974 -6.426631,  
    33.294974 -2.426631)))', 'Dublin', 'Ireland', 'Mayor Street,  
    IFSC, Dublin 1, D01 Y300', '01449 8500', 'admissions@ncirl.ie');
```

Inserting data into mrp\_meeting\_rooms

```
INSERT INTO `mrp_meeting_rooms` (`meetingRoomId`, `buildingId`, `name`, `floorNumber`, `coordinates`, `capacity`, `type`, `phone`, `email`, `directions`) VALUES ('1', '1', 'SCR1', '1', PointFromText('Point(83.294846 -4.426421)'), '71', 'ClassRoom', '01449 8500', 'scr1@ncirl.ie', 'Walk on your left hand side open the door close to stairs, the first room on your left');
```

Server: localhost:3306 » Database: navsingh\_MRPro » Table: mrp\_meeting\_rooms

Browse Structure SQL Search Insert Export Import Operations Triggers

Column	Type	Function	Null	Value
meetingRoomId	int(120)			1
buildingId	int(120)			1
name	varchar(120)			SCR1
floorNumber	int(120)			1
coordinates	point	PointFromText		Point(83.294846 -4.426421) <a href="#">Edit/Insert</a>
capacity	int(120)			71
type	varchar(120)			ClassRoom
phone	varchar(120)			01449 8500
email	varchar(120)			scr1@ncirl.ie
directions	varchar(480)			door close to stairs, the first room on your left

Go

✓ 1 row inserted.

```
INSERT INTO `mrp_meeting_rooms` (`meetingRoomId`, `buildingId`, `name`, `floorNumber`, `coordinates`, `capacity`, `type`, `phone`, `email`, `directions`) VALUES ('1', '1', 'SCR1', '1', PointFromText('Point(83.294846 -4.426421)'), '71', 'ClassRoom', '01449 8500', 'scr1@ncirl.ie', 'Walk on your left hand side open the door close to stairs, the first room on your left');
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

Run SQL query/queries on table navsingh\_MRPro.mrp\_meeting\_rooms: ⓘ

```
1 INSERT INTO `mrp_meeting_rooms` (`meetingRoomId`, `buildingId`, `name`, `floorNumber`, `coordinates`, `capacity`, `type`, `phone`, `email`, `directions`) VALUES ('1', '1', 'SCR1', '1', PointFromText('Point(83.294846 -4.426421)'), '71', 'ClassRoom', '01449 8500', 'scr1@ncirl.ie', 'Walk on your left hand side open the door close to stairs, the first room on your left');
```

Columns

- meetingRoomId
- buildingId
- name
- floorNumber
- coordinates
- capacity
- type
- phone
- email
- directions

SELECT \* SELECT INSERT UPDATE DELETE Clear Format

Get auto-saved query

☐ Bind parameters ⓘ

```
INSERT INTO `mrp_meeting_rooms` (
  `meetingRoomId`, `buildingId`, `name`, `floorNumber`, `coordinates`,
  `capacity`, `type`, `phone`, `email`, `directions`) VALUES (
  '1', '1', 'SCR1', '1', PointFromText('Point(83.294846 -4.426421)'),
  '71', 'ClassRoom', '01449 8500', 'scr1@ncirl.ie',
  'Walk on your left hand side open the door close to stairs, the first room on your left');
```

## Inserting Data into mrp\_companies Table

```
INSERT INTO `mrp_companies` (`companyId`, `name`, `headquarters`, `website`, `email`, `ceo`, `industry`, `tagline`) VALUES ('1', 'National College of Ireland', 'Mayor Street, IFSC, Dublin 1, D01 Y300, Ireland, Europe', 'https://ncirl.ie', 'contact@ncirl.ie', 'Gina Quin (President)', 'Education', 'NCI - Changing Lives through Education');
```

Server: localhost:3306 » Database: navsingh\_MRPro » Table: mrp\_companies

Browse Structure SQL Search Insert Export Import Operations Triggers

Column	Type	Function	Null	Value
companyId	int(120)			1
name	varchar(240)			National College of Ireland
headquarters	varchar(480)			Mayor Street, IFSC, Dublin 1, D01 Y300, Ireland, Europe
website	varchar(120)			https://ncirl.ie
email	varchar(120)			contact@ncirl.ie
ceo	varchar(120)			Gina Quin (President)
industry	varchar(120)			Education
tagline	varchar(120)			NCI - Changing Lives through Education

Run SQL query/queries on table navsingh\_MRPPro.mrp\_companies: ⓘ

```
1 INSERT INTO `mrp_companies` (`companyId`, `name`, `headquarters`, `website`, `email`, `ceo`, `industry`, `tagline`) VALUES ('1', 'National College of Ireland', 'Mayor Street, IFSC, Dublin 1, D01 Y300, Ireland, Europe', 'https://ncirl.ie', 'contact@ncirl.ie', 'Gina Quin (President)', 'Education', 'NCI - Changing Lives through Education');
```

Columns

- companyId
- name
- headquarters
- website
- email
- ceo
- industry
- tagline

SELECT \* SELECT INSERT UPDATE DELETE Clear Format

Get auto-saved query

☐ Bind parameters ⓘ

```
INSERT INTO `mrp_companies` (
  `companyId`, `name`, `headquarters`, `website`, `email`, `ceo`,
  `industry`, `tagline`) VALUES (
    '1', 'National College of Ireland', 'Mayor Street, IFSC, Dublin 1,
    D01 Y300, Ireland, Europe', 'https://ncirl.ie', 'contact@ncirl.ie',
    'Gina Quin (President)', 'Education', 'NCI - Changing Lives through Education');
```

### 3 Final Report Xcode

#### Project Guide

This guide will help understand the requirement for opening and running this project- MeetingRoom Pro is an ios (Swift) project, in order to use open the project code we require the following:

- Apple MacBook (I am using Macbook Pro, 6 GB Ram, 2.3 GHz Intel Core i5)



## Installing Xcode

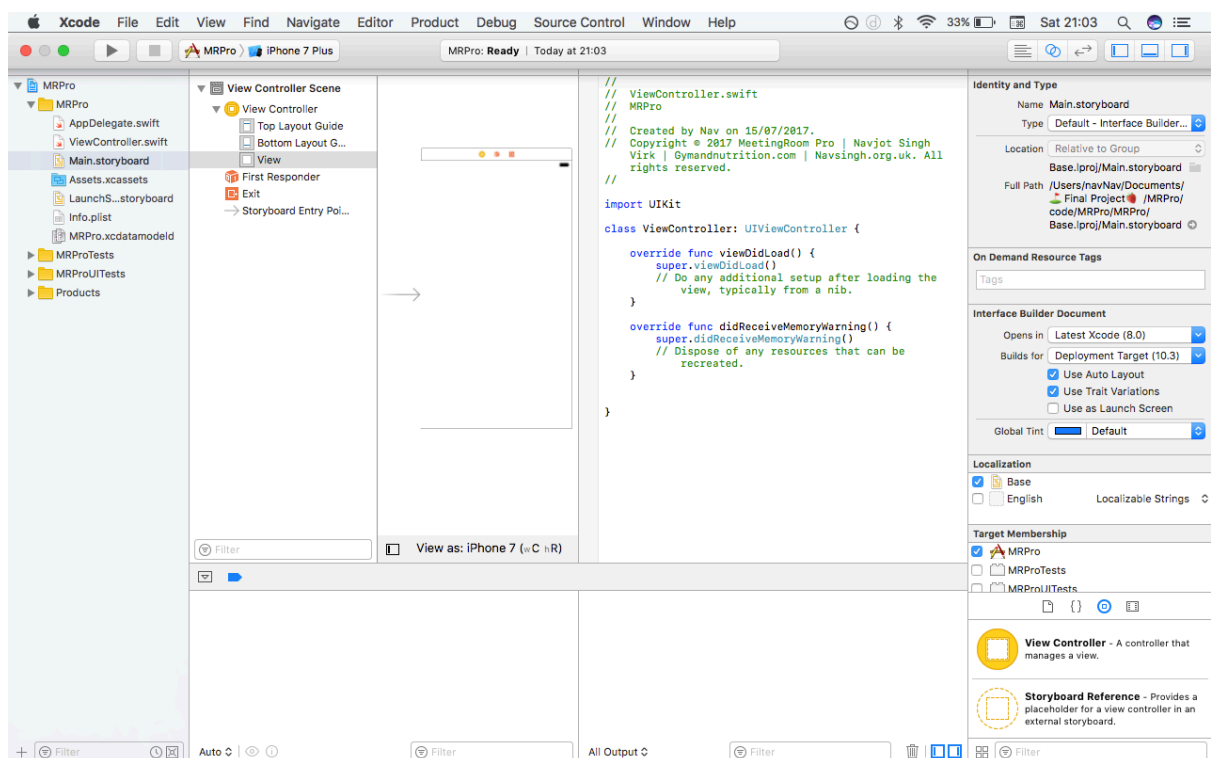
Describe xcode and its features in detail in the final report.

Install Xcode on your Mac, using Appstore or this link:

<https://developer.apple.com/xcode/ide/>



This is how a project in Xcode Ide looks like –



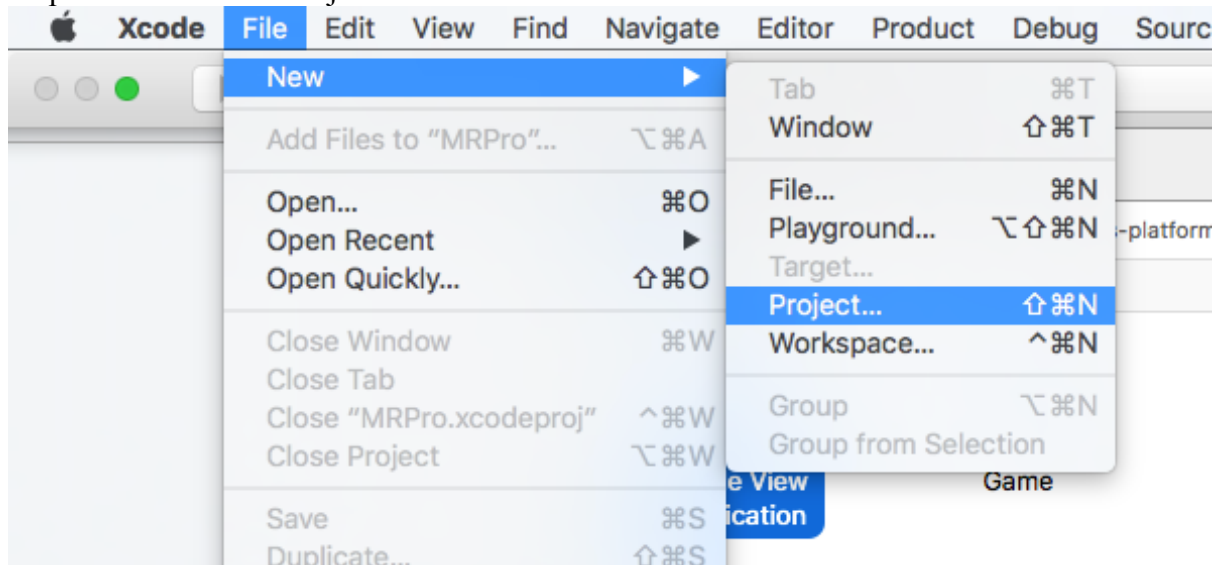
## Opening the Project

Use MRPro.xcworkspace file to open the project in xcode.

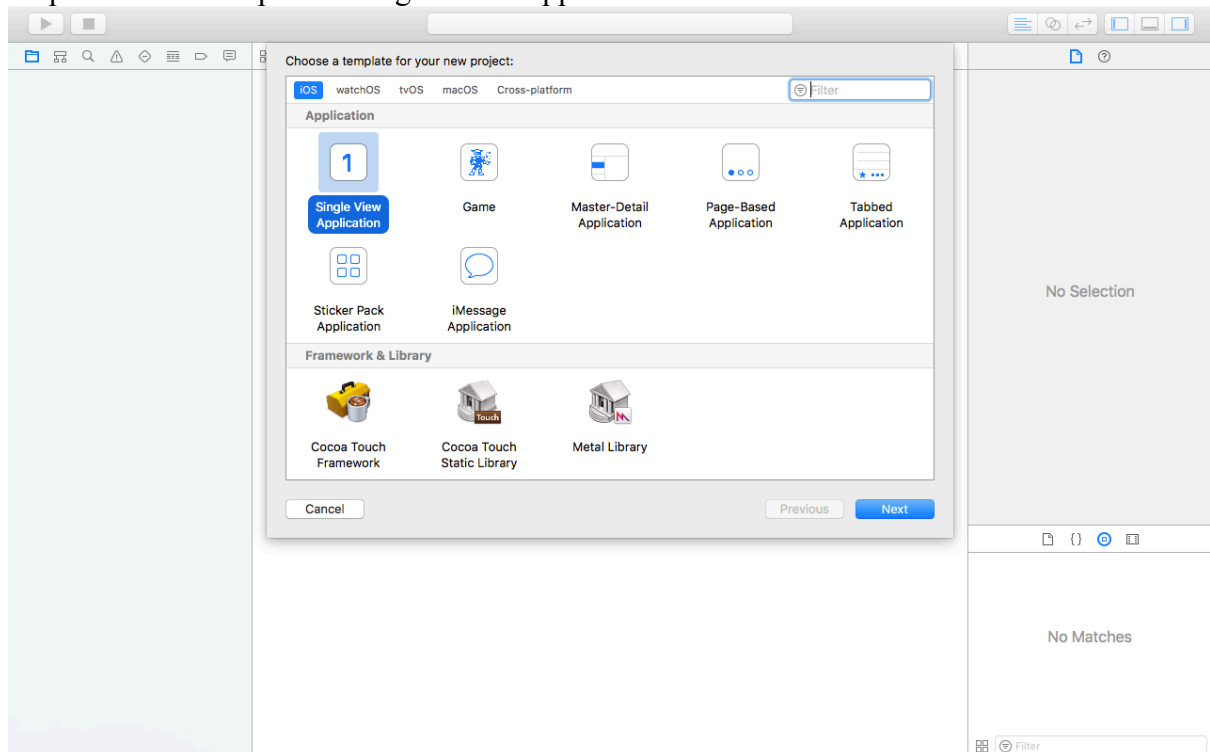
## Creating Project

Basic Steps involved in Project Creation

Step 1: File > New > Project



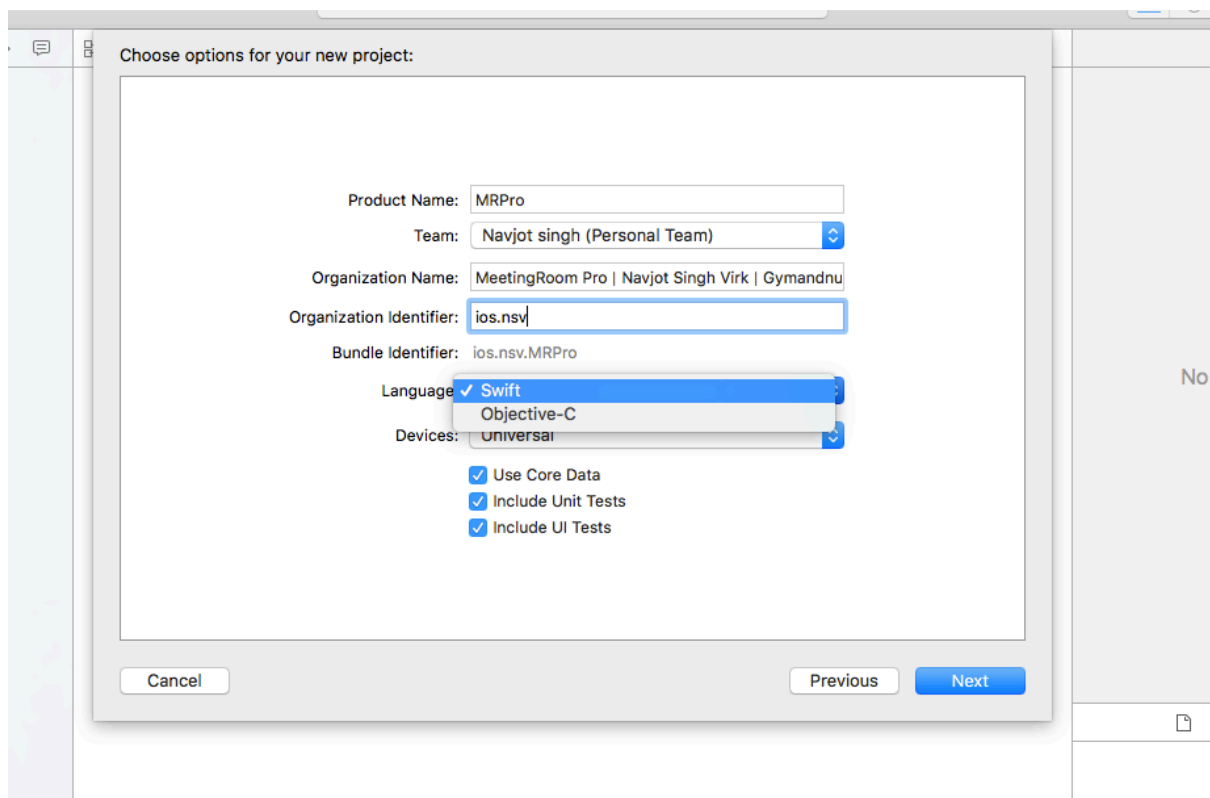
Step 2: Choose template – Single View Application > Next



Step 3:

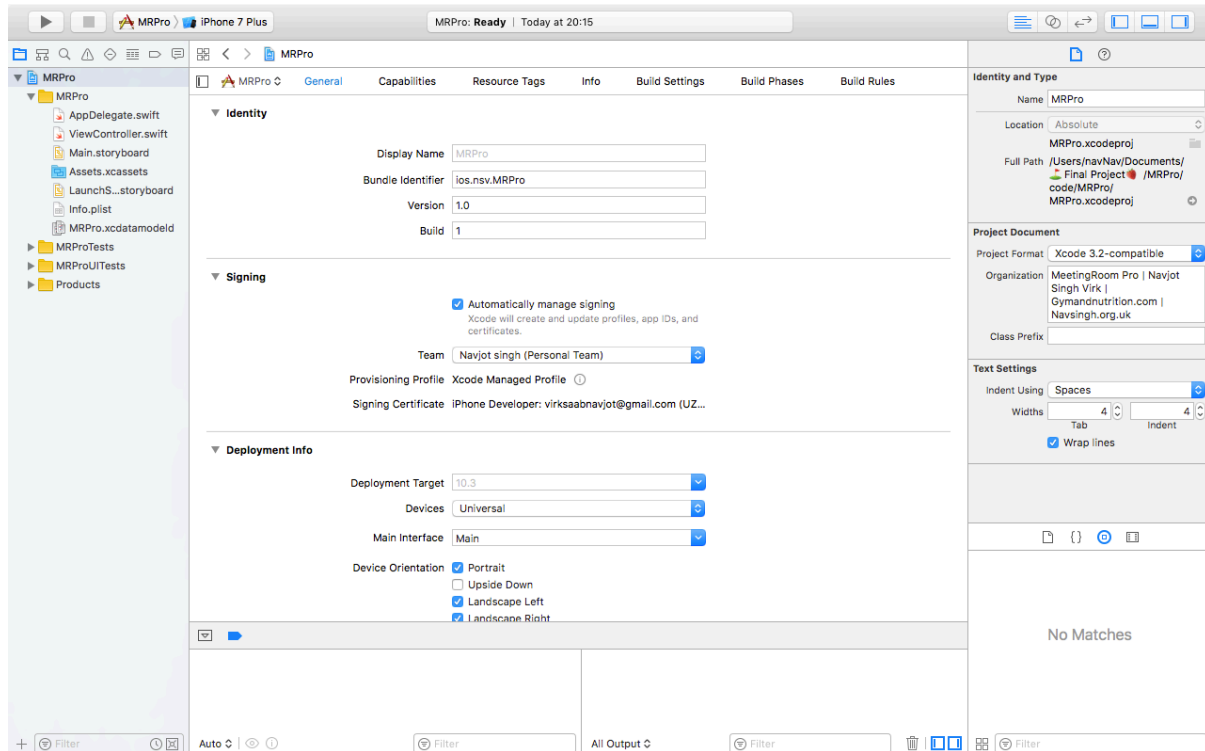
- Enter Product Name (aka. Project name) – MRPro (aka. MeetingRoom Pro)

- Select Team (Personal ios developer account – just sign in with your apple id and xcode will take care of the rest)
- Organisation Identifier: ios.nsv (it could be anything (but unique) you like but it should usually make some sense and be short, simple and sweet like in this example- ios signifies its an ios app and nsv – Navjot singh virk)
- Select Language: Swift will be used for this project.
- Devices: Universal means the app will be supported on both iphones and ipads (you can also choose any one of them if you want to limit certain device type users).
- Others: Include UnitTests and UTests
- Press > Next



Step 4: Save the project on computer at location of your choice

Step 5: New Xcode project opens in a new window



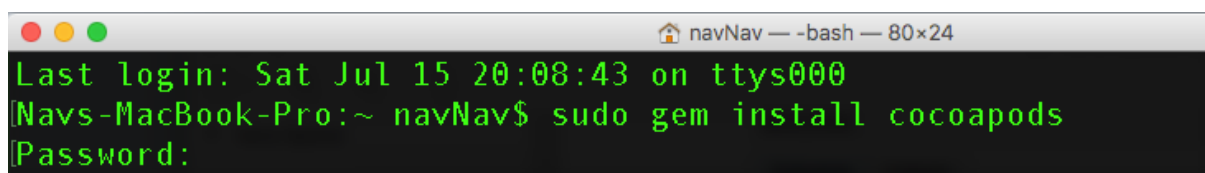
Step 6: At this stage project is ready and can be run on an emulator or a real ios device.

Step 7: Start making changes (write code)

## Cocoapods

Installing Cocoapods (on my computer which will allow us to use different useful cocoapods available on the internet).

- Open terminal
- Run this command: `$ sudo gem install cocoapods` (cocoapods is implemented in ruby so its included as a gem on our computer).



Explain cocoapods a bit in the final report

Explain what pods are, why they are needed, why they are useful?

## Create Pod File

In order to use Cocoapods we need to create a Podfile for our project.

- Open Terminal
- Navigate to the project folder
- To create the **Podfile** run this command in the terminal: `$ pod init`



```

22 gems installed
[code/MRPro k-Pro:~ navNav$ cd /Users/navNav/Documents/Final\ Project /MRPro/
Navs-MacBook-Pro:MRPro navNav$ ls
MRPro          MRPro.xcodeproj MRProTests      MRProUITests
Navs-MacBook-Pro:MRPro navNav$ pod init
Navs-MacBook-Pro:MRPro navNav$ ls
MRPro          MRPro.xcodeproj MRProTests      MRProUITests  Podfile
Navs-MacBook-Pro:MRPro navNav$ █

```

As we can see a Podfile was created when we ran the '**ls**' command second time to list the contents of the project folder.

- **Open Podfile** in an editor and write > **pod 'SwiftyJSON'** to add our first pod that will help in handling JSON better (it's a very popular library/pod among ios developer community when it comes to handling JSON in ios Swift).

```

1  platform :ios, '9.0'
2
3  target 'MRPro' do
4      # Comment the next line if you're not using Swift and don't want to use dynamic frameworks
5      use_frameworks!
6
7      # Pods for MRPro
8      pod 'SwiftyJSON'
9
10     target 'MRProTests' do
11         inherit! :search_paths
12         # Pods for testing
13     end
14
15     target 'MRProUITests' do
16         inherit! :search_paths
17         # Pods for testing
18     end
19
20 end
21

```

- Save Podfile > Run this command in terminal - **\$ pod install** (this can take time (upto 1 to 2 hours depending on your network speed if cocoapods are not used on your computer before in order to setup cocopods master repo).

```
Terminal Shell Edit View Window Help MRPro --bash-- 105x33
Navs-MacBook-Pro:MRPro navNav$ ls
MRPro      MRPro.xcodeproj MRProTests  MRProUITests  Podfile
Navs-MacBook-Pro:MRPro navNav$ pod install
Setting up CocoaPods master repo
$ /usr/bin/git clone https://github.com/CocoaPods/Specs.git master --progress
Cloning into 'master'...
remote: Counting objects: 1399915, done.
remote: Compressing objects: 100% (2459/2459), done.
remote: Total 1399915 (delta 1753), reused 2106 (delta 843), pack-reused 1396456
Receiving objects: 100% (1399915/1399915), 411.32 MiB | 331.00 KiB/s, done.
Resolving deltas: 100% (712362/712362), done.
Checking out files: 100% (168378/168378), done.

CocoaPods 1.3.0.beta.2 is available.
To update use: `sudo gem install cocoapods --pre`
[!] This is a test version we'd love you to try.

For more information, see https://blog.cocoapods.org and the CHANGELOG for this version at https://github.com/CocoaPods/CocoaPods/releases/tag/1.3.0.beta.2

Setup completed
Analyzing dependencies
Downloading dependencies
Installing SwiftyJSON (3.1.4)
Generating Pods project
Integrating client project

[!] Please close any current Xcode sessions and use `MRPro.xcworkspace` for this project from now on.
Sending stats
Pod installation complete! There is 1 dependency from the Podfile and 1 total pod installed.
Navs-MacBook-Pro:MRPro navNav$
```

- Close project in Xcode.
- Open the newly generated – MRPro.xcworkspace. And now onwards everytime to open/work on the project MRPro.xcworkspace should be used instead of MRPro.xcodeproj
- Now at this stage the pod we installed will be available to use (Usage: import SwiftyJSON).
- All the other pods will be installed the same way.