**Testy:**

ORM

var newQuery = \_db.adverts.Where(x => x.AdditionDate > new DateTime(2018, 5, 29, 17, 32, 00) && x.AdditionDate < new DateTime(2018, 5, 29, 17, 35, 00) && x.City=="Katowice").ToList();

Wyniki:

1 - 28

2 - 23

3 - 31

4 - 33

5 - 21

6 - 20

7 - 25

8 - 20

9 - 20

10 – 29

AVG = 25

SQL

cmd.CommandText = "SELECT \* from [BoatsAd].[dbo].Adverts where AdditionDate > '2018-05-29 17:32:00' and AdditionDate < '2018-05-29 17:35:00' and City = 'Katowice'";

Wyniki:

1- 32

2- 20

3- 18

4- 12

5- 34

6- 16

7- 13

8- 12

9- 25

10- 20

AVG = 20.2

ORM

Advert advert = new Advert {

AdditionDate = new DateTime(2018, 5, 29, 17, 32, 00),

AdditionalInformation = "BRAK",

City = "Gliwice",

Email = "matstanik@gmail.com",

FinishDate = new DateTime(2018, 5, 29, 17, 35, 00),

Name = "TEST",

PhoneNumber = "485928375",

SureName = "TEST"

};

var newQuery = \_db.adverts.Add(advert);

\_db.SaveChanges();

Wyniki:

1. - 36

2 - 37

3 - 32

4 - 26

5 - 33

6 - 25

7 - 27

8 - 34

9 - 30

10 – 38

AVG = 32.8

SQL

cmd.CommandText = "INSERT INTO [dbo].[Adverts] ([AdditionDate],[FinishDate],[Name],[SureName],[PhoneNumber],[Email],[City],[AdditionalInformation]) VALUES ('2018-05-29 17:32:00', '2018-05-29 17:35:00', 'TEST', 'TEST', '485928375', 'matstanik@gmail.com', 'Gliwice', 'BRAK')";

Wyniki:

1- 11

2- 10

3- 11

4- 12

5- 25

6- 26

7- 14

8- 31

9- 14

10- 26

AVG = 18

**ORM**

Advert advert = new Advert {

AdditionDate = new DateTime(2018, 5, 29, 17, 32, 00),

AdditionalInformation = "BRAK",

City = "Gliwice",

Email = "matstanik@gmail.com",

FinishDate = new DateTime(2018, 5, 29, 17, 35, 00),

Name = "TEST",

PhoneNumber = "485928375",

SureName = "TEST"

};

Stopwatch stopWatch = Stopwatch.StartNew();

for(int i =0; i<1000; i++){

var newQuery = \_db.adverts.Add(advert);

\_db.SaveChanges();

}

Wyniki:

1. 26324
2. 23220
3. 25186
4. 39473

AVG = 28550,75

**SQL**

for (int i = 0; i < 1000; i++)

{

cmd.CommandText = "INSERT INTO [dbo].[Adverts] ([AdditionDate],[FinishDate],[Name],[SureName],[PhoneNumber],[Email],[City],[AdditionalInformation]) VALUES ('2018-05-29 17:32:00', '2018-05-29 17:35:00', 'TEST', 'TEST', '485928375', 'matstanik@gmail.com', 'Gliwice', 'BRAK')";

cmd.CommandType = CommandType.Text;

reader = cmd.ExecuteReader();

DataTable dt = new DataTable();

dt.Load(reader);

}

Wyniki:

1. 11798
2. 11838
3. 11647
4. 11672

AVG = 11738,75

**ORM**

var newQuery = \_db.adverts.ToList();

Wyniki:

1. 43
2. 43
3. 49
4. 38
5. 40
6. 38
7. 36
8. 42
9. 51
10. 40

AVG = 42

**SQL**

cmd.CommandText = "Select \* from [dbo].[Adverts]";

Wyniki:

1. 29
2. 71
3. 32
4. 24
5. 33
6. 24
7. 30
8. 30
9. 32
10. 33

AVG = 33.8

**ORM**

var newQuery = \_db.subjects.Where(x=>x.Advert.AdditionDate > new DateTime(2018, 5, 31, 12, 09, 50) && x.Advert.AdditionDate < new DateTime(2018, 5, 31, 12, 11, 30)).Select(y=>new { y.AdvertDescription, y.AdvertName, y.Price}).ToList();

Wyniki:

1. 33
2. 34
3. 39
4. 33
5. 35
6. 38
7. 22
8. 30
9. 37
10. 34

AVG = 33.5

**SQL**

cmd.CommandText = "select AdvertName, AdvertDescription, Price from Subjects INNER JOIN Adverts on Adverts.AdvertId = Subjects.AdvertId where (Adverts.AdditionDate > '2018-05-31 12:09:50' and Adverts.AdditionDate < '2018-05-31 12:11:30')";

Wyniki:

1. 27
2. 15
3. 14
4. 41
5. 15
6. 21
7. 15
8. 24
9. 28
10. 27

AVG = 22.7

**TEST SQLMS – select with inner Join**

1. select AdvertDescription, AdvertName, Price from Subjects INNER JOIN Adverts on Adverts.AdvertId = Subjects.AdvertId where (Adverts.AdditionDate > '2018-05-31 12:09:50' and Adverts.AdditionDate < '2018-05-31 12:11:30')

Wyniki:

Próba 1 - Total execution time

15 13 17 10 8 11 8 8 9 11 = > 11.0000

Próba 2 - Total execution time

9 10 10 11 9 9 9 9 7 10 = > 9.3000

1. SELECT 1 AS [C1], [Filter1].[AdvertDescription] AS [AdvertDescription],

[Filter1].[AdvertName] AS [AdvertName], [Filter1].[Price] AS [Price] FROM (SELECT [Extent1].[AdvertId] AS [AdvertId1], [Extent1].[AdvertName] AS [AdvertName], [Extent1].[AdvertDescription] AS [AdvertDescription], [Extent1].[Price] AS [Price]FROM [dbo].[Subjects] AS [Extent1]

INNER JOIN [dbo].[Adverts] AS [Extent2] ON [Extent1].[AdvertId] = [Extent2].[AdvertId] WHERE [Extent2].[AdditionDate] > convert(datetime2, '2018-05-31 12:09:50.0000000', 121) ) AS [Filter1] INNER JOIN [dbo].[Adverts] AS [Extent3] ON [Filter1].[AdvertId1] = [Extent3].[AdvertId] WHERE [Extent3].[AdditionDate] < convert(datetime2, '2018-05-31 12:11:30.0000000', 121)

Wyniki:

Próba 1 - Total execution time

11 11 15 12 13 13 12 10 15 17 = > 12.9000

Próba 2 - Total execution time

14 12 12 12 12 13 12 10 12 11 = > 12.0000

**ORM**

List<Boat> boat = \_db.boats.Where(x=>x.SailBoat.EnginePower> 500).ToList();

foreach(Boat singleBoat in boat)

{singleBoat.Price = 10101;

}\_db.SaveChanges();

Wyniki:

1. 24
2. 29
3. 37
4. 23
5. 28
6. 31
7. 18
8. 29
9. 27
10. 30

AVG = 27.6

**SQL**

cmd.CommandText = "Update Subjects Set Price = 51234 from Subjects INNER JOIN SailBoat on Subjects.SubjectId = SailBoat.SubjectId where SailBoat.EnginePower > 500";

Wyniki:

1. 37
2. 25
3. 26
4. 25
5. 24
6. 16
7. 23
8. 21
9. 33
10. 20

AVG = 25

**ORM**

Boat boat = \_db.boats.Where(x=>x.Advert.Name == "Abby" && x.Advert.SureName == "Halama" && x.Advert.Email == "testUpdate@gmail.com").FirstOrDefault();

boat.SailBoat.EnginePower = 11;

Wyniki:

1. 44
2. 41
3. 42
4. 49
5. 46
6. 48
7. 41
8. 36
9. 44
10. 47

AVG = 43.8

**SQL**

cmd.CommandText = "Update SailBoat Set EnginePower = 22 from SailBoat INNER JOIN Subjects on SailBoat.SubjectId = Subjects.SubjectId Inner JOIN Adverts on Subjects.AdvertId = Adverts.AdvertId where Adverts.Name = 'Abby' and Adverts.SureName = 'Halama' and Email = 'testUpdate@gmail.com'";

Wyniki:

1. 32
2. 18
3. 24
4. 17
5. 21
6. 21
7. 22
8. 47
9. 22
10. 24

AVG = 24.7

**TEST SQLMS – Update with inner Join**

1. Update SailBoat

Set EnginePower = 1

from

SailBoat INNER JOIN Subjects on SailBoat.SubjectId = Subjects.SubjectId

Inner JOIN Adverts on Subjects.AdvertId = Adverts.AdvertId

where

Adverts.Name = 'Abby' and Adverts.SureName = 'Halama' and Adverts.Email = 'testUpdate@gmail.com'

Wyniki:

Próba 1 - Total execution time

11 10 8 11 8 9 6 9 9 9 = > 9.0000

Próba 2 - Total execution time

8 12 7 8 9 8 9 8 10 7 = > 8.6000

DECLARE @0 Decimal

Set @0 ='1'

Declare @1 Int

set @1 = '13053'

Declare @EntityKeyValue1 Int

set @EntityKeyValue1 = '13053'

SELECT

[Limit1].[C1] AS [C1],

[Limit1].[SubjectId] AS [SubjectId],

[Limit1].[AdvertId] AS [AdvertId],

[Limit1].[CategoryId] AS [CategoryId],

[Limit1].[AdvertName] AS [AdvertName],

[Limit1].[AdvertDescription] AS [AdvertDescription],

[Limit1].[Price] AS [Price],

[Limit1].[ProducentName] AS [ProducentName],

[Limit1].[BoatModel] AS [BoatModel],

[Limit1].[Length] AS [Length],

[Limit1].[Beam] AS [Beam],

[Limit1].[Weight] AS [Weight],

[Limit1].[BuiltYear] AS [BuiltYear],

[Limit1].[Draft] AS [Draft],

[Limit1].[Displacement] AS [Displacement]

FROM ( SELECT TOP (1)

[Extent1].[SubjectId] AS [SubjectId],

[Extent1].[AdvertId] AS [AdvertId],

[Extent1].[CategoryId] AS [CategoryId],

[Extent1].[AdvertName] AS [AdvertName],

[Extent1].[AdvertDescription] AS [AdvertDescription],

[Extent1].[Price] AS [Price],

[Extent2].[ProducentName] AS [ProducentName],

[Extent2].[BoatModel] AS [BoatModel],

[Extent2].[Length] AS [Length],

[Extent2].[Beam] AS [Beam],

[Extent2].[Weight] AS [Weight],

[Extent2].[BuiltYear] AS [BuiltYear],

[Extent2].[Draft] AS [Draft],

[Extent2].[Displacement] AS [Displacement],

'0X0X' AS [C1]

FROM [dbo].[Subjects] AS [Extent1]

INNER JOIN [dbo].[Boats] AS [Extent2] ON [Extent1].[SubjectId] = [Extent2].[SubjectId]

INNER JOIN [dbo].[Adverts] AS [Extent3] ON [Extent1].[AdvertId] = [Extent3].[AdvertId]

WHERE ('Abby' = [Extent3].[Name]) AND ('Halama' = [Extent3].[SureName]) AND ('testUpdate@gmail.com' = [Extent3].[Email])

) AS [Limit1]

SELECT

[Extent1].[SubjectId] AS [SubjectId],

[Extent1].[SailsArea] AS [SailsArea],

[Extent1].[IsEngine] AS [IsEngine],

[Extent1].[EnginePower] AS [EnginePower],

[Extent1].[EngineType] AS [EngineType],

[Extent1].[HullType] AS [HullType],

[Extent1].[YachtType] AS [YachtType],

[Extent1].[RudderType] AS [RudderType]

FROM [dbo].[SailBoat] AS [Extent1]

WHERE [Extent1].[SubjectId] = @EntityKeyValue1

UPDATE [dbo].[SailBoat]

SET [EnginePower] = @0

WHERE ([SubjectId] = @1)

Wyniki:

Próba 1 - Total execution time

15 14 12 11 13 10 12 13 10 15 = > 12.5000

Próba 2 - Total execution time

1. 12 17 12 12 13 11 16 12 12 = > 12.8000

**TEST SQLMS – Insert to multiple tables**

1. ORM

DECLARE @0 DateTime2

set @0 = '2018-06-03 16:54:27'

DECLARE @1 DateTime2

set @1 = '2018-06-08 16:54:27'

DECLARE @2 varchar(max)

set @2 = 'Mateusz'

DECLARE @3 varchar(max)

set @3 = 'Stanik'

DECLARE @4 varchar(max)

set @4 ='234234323'

DECLARE @5 varchar(max)

set @5 ='test@gmail.col'

DECLARE @6 varchar(max)

set @6 = 'Katowice'

DECLARE @7 varchar(max)

set @7 = 'brak'

INSERT [dbo].[Adverts]([AdditionDate], [FinishDate], [Name], [SureName], [PhoneNumber], [Email], [City], [AdditionalInformation])

VALUES (@0, @1, @2, @3, @4, @5, @6, @7)

SELECT [AdvertId]

FROM [dbo].[Adverts]

WHERE @@ROWCOUNT > 0 AND [AdvertId] = scope\_identity()

declare @8 bigint

set @8 = 26366

declare @9 bigint

set @9 = 1

declare @10 varchar(max)

set @10 = 'sorzedam żaglówke'

declare @11 varchar(max)

set @11 = 'Brak informacji na temat przedmiotu'

declare @12 float

set @12 = 33

INSERT [dbo].[Subjects]([AdvertId], [CategoryId], [AdvertName], [AdvertDescription], [Price])

VALUES (@8, @9, @10, @11, @12)

SELECT [SubjectId]

FROM [dbo].[Subjects]

WHERE @@ROWCOUNT > 0 AND [SubjectId] = scope\_identity()

declare @13 bigint

set @13 = 14049

declare @14 varchar

set @14 = 'test'

declare @15 float

set @15 = 0

declare @16 float

set @16 = 32

declare @17 float

set @17 = 23

declare @18 varchar(max)

set @18 = '1999'

declare @19 float

set @19 = 0

declare @20 float

set @20 = 0

INSERT [dbo].[Boats]([SubjectId], [ProducentName], [BoatModel], [Length], [Beam], [Weight], [BuiltYear], [Draft], [Displacement])

VALUES (@13, @14, NULL, @15, @16, @17, @18, @19, @20)

declare @21 bigint

set @21 = 14049

declare @22 float

set @22 = '23'

declare @23 bit

set @23 = 'True'

declare @24 float

set @24 = 3

declare @25 bit

set @25 = '1'

declare @26 varchar(max)

set @26 = 'MONOHULL'

declare @27 varchar(max)

set @27 = 'Brak'

declare @28 varchar(max)

set @28 = 'Zaburtowy'

INSERT [dbo].[SailBoat]([SubjectId], [SailsArea], [IsEngine], [EnginePower], [EngineType], [HullType], [YachtType], [RudderType])

VALUES (@21, @22, @23, @23, @24, @25, @26, @27)

Wyniki:

Próba 1 - Total execution time

15 16 18 18 14 28 33 17 18 16 = > 19.50

1. SQL

insert into Adverts values (

'2018-06-03 16:54:27','2018-06-08 16:54:27','Mateusz','Stanik','234234323','test@gmail.col','Katowice','brak'

);

insert into Subjects values (

26386, 1, 'sorzedam żaglówke', 'Brak informacji na temat przedmiotu', 33

);

insert into Boats values (

14067,'test', '0',32,23,44,'1999', 0, 0

);

insert into SailBoat values (

14067,23,'True',3,1,'MONOHULL','Brak','Zaburtowy'

);

Wyniki:

Próba 2 - Total execution time

11 10 8 13 15 9 10 9 8 8 = > 10.1000

**ORM**

Boat boat = new Boat {

Advert = new Advert{

AdditionalInformation = "brak",

AdditionDate = DateTime.Now,

City = "Katowice",

Email = "test@gmail.col",

FinishDate = DateTime.Now.AddDays(5),

Name = "Mateusz",

SureName = "Stanik",

PhoneNumber = "234234323"

},

AdvertDescription = "Brak informacji na temat przedmiotu",

SailBoat = new SailBoat {

EnginePower = 324,

EngineType = 1,

HullType = "MONOHULL",

IsEngine = true,

RudderType = "Zaburtowy",

SailsArea = 23,

YachtType = "Brak",

},

AdvertName = "sorzedam żaglówke",

BuiltYear = "1999",

Price = 8090,

Weight = 23,

Beam = 32,

CategoryId = 1,

ProducentName = "test"

};

\_db.boats.Add(boat);

\_db.SaveChanges();

Wyniki:

|  |
| --- |
| 1. 91 |
| 1. 86 |
| 1. 98 |
| 1. 103 |
| 1. 87 |
| 1. 94 |
| 1. 97 |
| 1. 106 |
| 1. 92 |
| 1. 100 |
|  |

AVG = 95.4

**SQL**

cmd.CommandText = "insert into Adverts values ('2018-06-03 16:54:27','2018-06-08 16:54:27' ,'Mateusz','Stanik','234234323','test@gmail.col','Katowice','brak'); insert into Subjects values (26408, 1, 'sorzedam żaglówke', 'Brak informacji na temat przedmiotu', 33);insert into Boats values (14091, 'test', '0', 32, 23, 44, '1999', 0, 0); insert into SailBoat values (14091, 23, 'True', 3, 1, 'MONOHULL', 'Brak', 'Zaburtowy'); ";

Wyniki:

1. 27
2. 30
3. 24
4. 29
5. 33
6. 67
7. 33
8. 23
9. 25
10. 27

AVG = 31.8

|  |
| --- |
|  |

**Porównanie wielu insertów z zapisem na końcu**

**ORM**

var boats = new List<Boat> {

new Boat {

Advert = new Advert{

AdditionalInformation = "brak",

AdditionDate = DateTime.Now,

City = "Katowice",

Email = "test@gmail.col",

FinishDate = DateTime.Now.AddDays(5),

Name = "Mateusz",

SureName = "Stanik",

PhoneNumber = "234234323"

},

AdvertDescription = "Brak informacji na temat przedmiotu",

SailBoat = new SailBoat {

EnginePower = 324,

EngineType = 1,

HullType = "MONOHULL",

IsEngine = true,

RudderType = "Zaburtowy",

SailsArea = 23,

YachtType = "Brak",

},

AdvertName = "sorzedam żaglówke",

BuiltYear = "1999",

Price = 8090,

Weight = 23,

Beam = 32,

CategoryId = 1,

ProducentName = "test"

},

…

}

};

\_db.boats.AddRange(boats);

\_db.SaveChanges();

Wyniki:

1650

**SQL**

cmd.CommandText = "insert into Adverts values ('2018-06-03 16:54:27','2018-06-08 16:54:27' ,'Mateusz','Stanik','234234323','test@gmail.col','Katowice','brak'); insert into Subjects values (26434, 1, 'sorzedam żaglówke', 'Brak informacji na temat przedmiotu', 33);insert into Boats values (14117, 'test', '0', 32, 23, 44, '1999', 0, 0); insert into SailBoat values (14117, 23, 'True', 3, 1, 'MONOHULL', 'Brak', 'Zaburtowy'); " +

"insert into Adverts values('2018-06-03 16:54:27', '2018-06-08 16:54:27', 'Mateusz', 'Stanik', '234234323', 'test@gmail.col', 'Katowice', 'brak'); insert into Subjects values (26435, 1, 'sorzedam żaglówke', 'Brak informacji na temat przedmiotu', 33); insert into Boats values (14118, 'test', '0', 32, 23, 44, '1999', 0, 0); insert into SailBoat values (14118, 23, 'True', 3, 1, 'MONOHULL', 'Brak', 'Zaburtowy'); " +

…

cmd.CommandType = CommandType.Text;

reader = cmd.ExecuteReader();

Wyniki:

32

**Porównanie wielu insertów z ciągłym zapisem**

**ORM**

for (int i = 0; i < 20; i++)

{

var boat = new Boat {

Advert = new Advert{

AdditionalInformation = "brak",

AdditionDate = DateTime.Now,

City = "Katowice",

Email = "test@gmail.col",

FinishDate = DateTime.Now.AddDays(5),

Name = "Mateusz",

SureName = "Stanik",

PhoneNumber = "234234323"

},

AdvertDescription = "Brak informacji na temat przedmiotu",

SailBoat = new SailBoat {

EnginePower = 324,

EngineType = 1,

HullType = "MONOHULL",

IsEngine = true,

RudderType = "Zaburtowy",

SailsArea = 23,

YachtType = "Brak",

},

AdvertName = "sorzedam żaglówke",

BuiltYear = "1999",

Price = 8090,

Weight = 23,

Beam = 32,

CategoryId = 1,

ProducentName = "test"

};

\_db.boats.Add(boat);

\_db.SaveChanges();

}

Wynik:

1750

**SQL**

int j = 14217;

int k = 26534;

for (int i= 0; i < 20; i++)

{

cmd.CommandText = "insert into Adverts values ('2018-06-03 16:54:27','2018-06-08 16:54:27' ,'Mateusz','Stanik','234234323','test@gmail.col','Katowice','brak'); insert into Subjects values (" + k + ", 1, 'sorzedam żaglówke', 'Brak informacji na temat przedmiotu', 33);insert into Boats values (" + j + ", 'test', '0', 32, 23, 44, '1999', 0, 0); insert into SailBoat values (" + j+", 23, 'True', 3, 1, 'MONOHULL', 'Brak', 'Zaburtowy'); ";

cmd.CommandType = CommandType.Text;

reader = cmd.ExecuteReader();

DataTable dt = new DataTable();

dt.Load(reader);

j++;

k++;

}

sqlConnection1.Close();

Wynik:

266