1. Сгенерируйте данные для таблиц своей базы данных.

Подчиненные таблицы должны состоять из 1 000 строк (таблица с описанием пловцов – 100 000), таблица Result – 1 000 000.

У нас будет всего 5 стилей: Front Crawl, Breaststroke, Butterfly Stroke, Backstroke, Sidestroke.

5 дистанций: 50m, 100m, 200m, 400m, 800m.

Ранк для пловцов: U1, U2, U3, 1, 2, 3, CMS, MS.

Ранк для тренеров: CMS, MS, WMS.

Ранк для судей: MS, WMS.

GENERATE DATA

USE [Swimming]

--ТАБЛИЦА [dbo].[TypeSwimming]

INSERT INTO [dbo].[TypeSwimming] ([Name])

VALUES (N'Front Crawl'),

(N'Breaststroke'),

(N'Butterfly Stroke'),

(N'Backstroke'),

(N'Sidestroke')

--ТАБЛИЦА [Swimmer].[Coach] (случайных 1000)

ALTER TABLE [Swimmer].[Coach] ADD [RankId] INT NOT NULL -- добавляю столбец для RankId

INSERT INTO [Swimmer].[Coach] ([FirstName], [LastName], [PassportNumber], [Rank], [RankId])

SELECT

[FirstName] = [first\_name],

[LastName] = [last\_name],

-- номер паспорта: первая буква [first\_name] + первая буква [last\_name] + случайное число от 1000000 до 9999999 (7 цифр)

[PassportNumber] = CONCAT(LEFT([first\_name],1), LEFT([last\_name],1), CAST(CONVERT(BIGINT,FLOOR(RAND(CHECKSUM(NEWID()))\*(9999999-1000000+1)+1000000)) AS NVARCHAR (MAX))),

[Rank] = '',

[RankId] = ROUND((RAND(CHECKSUM(NEWID())))\*(3-1)+1,0) -- RankId от 1 до 3

FROM [dbo].[TestData] -- загруженная 1000 рандомных людей

-- для генерации Rank

CREATE TABLE #RankCoach ([RankId] INT NOT NULL IDENTITY(1, 1), [Rank] NVARCHAR(3) NOT NULL); --DROP TABLE #RankCoach

INSERT INTO #RankCoach ([Rank]) VALUES (N'CMS'), (N'MS'), (N'WMS');

UPDATE [Swimmer].[Coach]

SET [Rank] = (SELECT [Rank] FROM #RankCoach WHERE #RankCoach.[RankId] = [Swimmer].[Coach].[RankId])

--удаляю [RankId]

ALTER TABLE [Swimmer].[Coach] DROP COLUMN [RankId]

/\*ТАБЛИЦА [Swimmer].[Swimmer]\*/

-- для генерации Rank

DECLARE @RankSwimmer TABLE ([Rank] INT NOT NULL IDENTITY(1, 1), [Name] NVARCHAR(10) NOT NULL);

INSERT INTO @RankSwimmer (Name) VALUES (N'U1'), (N'U2'), (N'U3'), (N'1'), (N'2'), (N'3'), (N'CMS'), (N'MS');

--временная таблица людей

CREATE TABLE #People

(

PeopleId int not null identity(1,1),

FirstName nvarchar(50) not null,

LastName nvarchar(100) not null,

Gender nvarchar(1) not null

)

-- собираю циклом, сначала 2 женщины, потом 1 мужчины

DECLARE @i INT = 2;

WHILE @i>0

BEGIN

INSERT INTO #People

SELECT FirstTable.[first\_name], SecondTable.[last\_name], gender

FROM

(SELECT DISTINCT [first\_name], gender

FROM [Swimming].[dbo].[RandomPeople] -- загруженная 1000 рандомных людей

WHERE [genderNumber] = @i) FirstTable

CROSS JOIN

(SELECT DISTINCT [last\_name]

FROM [Swimming].[dbo].[RandomPeople]

WHERE [genderNumber] = @i) SecondTable

SET @i=@i-1

END

--переменные для генерации даты рождения

DECLARE @startDate DATETIME = '19800101' --для самого старшего

DECLARE @endDate DATETIME = '20101231' -- для самого молодого

--данные для таблицы [Swimmer].[Swimmer]

INSERT INTO [Swimmer].[Swimmer]

SELECT TOP 100000

[FirstName] = [FirstName],

[LastName] = [LastName],

-- номер паспорта: первая буква [FirstName] + первые 3 буква [LastName]+ [Gender]+ случайное число от 1 до 9 + случайное число от 1000000 до 9999999 (7 цифр)

[PassporNumber] = CONCAT(LEFT([FirstName],1), UPPER(LEFT([LastName],3)), ABS(CHECKSUM(NewId())) % 8 + 1, CAST(CONVERT(BIGINT,FLOOR(RAND(CHECKSUM(NEWID()))\*(9999999-1000000)+1000000)) AS NVARCHAR (MAX))),

[BirthDate] = DATEADD(DAY, RAND(CHECKSUM(NEWID())) \* (1 + DATEDIFF(DAY, @startDate, @endDate)), @startDate),

[Gender] = [Gender],

[Rank] = ABS(CHECKSUM(NewId())) % 7 + 1, -- от 1 до 7

[TrainerId] = FLOOR(RAND(CHECKSUM(NEWID()))\*(1000-1)+1) -- от 1 до 1000

FROM #People

/\* ТАБЛИЦА [Swimmer].[AnthropometricTest]\*/

--переменные для генерации даты теста

DECLARE @startDate DATETIME = '20210101' --начальная дата

INSERT INTO [Swimmer].[AnthropometricTest]

SELECT

[SwimmerId],

[Date] = DATEADD(DAY, RAND(CHECKSUM(NEWID())) \* (1 + DATEDIFF(DAY, @startDate, GETDATE())), @startDate),

[Weight] = CONVERT(FLOAT, ROUND((RAND(CHECKSUM(NEWID())))\*(120-45)+45,3)), -- от 45 кг до 120 кг

[Height] = CONVERT (INT, ROUND((RAND(CHECKSUM(NEWID())))\*(195-130)+130,0)), -- от 130 см до 195 см

[Chest] = CONVERT(FLOAT, ROUND((RAND(CHECKSUM(NEWID())))\*(120-45)+45,2)), -- от 45 см до 120 см

[Waist] = CONVERT(FLOAT, ROUND((RAND(CHECKSUM(NEWID())))\*(90-30)+30,2)) -- от 30 см до 90 см

FROM [Swimmer].[Swimmer]

/\*ТАБЛИЦА [Competition].[CompetitionVenue]\*/

INSERT INTO [Competition].[CompetitionVenue] ([CompetitionVenueName], [CountryName], [CityName])

SELECT

[CompetitionVenueName] = [Place],

[CountryName] = [Country],

[CityName] = [City]

FROM [Swimming].[dbo].[AddirionalData] -- таблица с 1000 рандомных стран и городов

/\*ТАБЛИЦА [Competition].[Competition]\*/

INSERT INTO [Competition].[Competition] ([CompetitionName], [DateStart], [DateEnd])

SELECT TOP 100

[CompetitionName] = 'OpenWaterSwimming', -- International tournament, Tournament, Universiade, Сhampionship

[DateStart] = CONVERT(DATE, CONVERT(NVARCHAR(10), [Time],104)),

[DateEnd] = DATEADD(DD,+3,CONVERT(DATE, CONVERT(NVARCHAR(10), [Time],104)))

FROM [Swimming].[dbo].[AddirionalData]

ORDER BY [Country] DESC

/\*ТАБЛИЦА [Competition].[Bridge\_Competition\_CompetitionVenue]\*/

INSERT INTO [Competition].[Bridge\_Competition\_CompetitionVenue] ([CompetitionId], [CompetitionVenueId])

SELECT

[CompetitionId] = ROUND((RAND(CHECKSUM(NEWID())))\*(500-1)+1,0), -- от 1 до 500,

[CompetitionVenueId] = ROUND((RAND(CHECKSUM(NEWID())))\*(1000-1)+1,0) -- от 1 до 1000

FROM [Competition].[CompetitionVenue]

/\*ТАБЛИЦА [Competition].[Swimmer].[Results]\*/

-- CTE для генерации рандомного времени

;WITH CTE\_GenerationTime AS

(

SELECT TOP 1440

ROW\_NUMBER() OVER (ORDER BY (SELECT NULL)) AS Id,

CONVERT(TIME, DATEADD(minute, ROW\_NUMBER() OVER (ORDER BY (SELECT NULL)), '00:00:00')) AS RandomTime

FROM sys.all\_objects a1

CROSS JOIN sys.all\_objects a2

),

CTE\_UseTime (Id, RandomTime)

AS

(

SELECT Id, RandomTime

FROM CTE\_GenerationTime

WHERE Id BETWEEN 30 AND 1029

)

INSERT INTO [Swimmer].[Results]

SELECT

[CompetitionId] = ROUND((RAND(CHECKSUM(NEWID())))\*(500-1)+1,0), -- от 1 до 500

[SwimmerId] = ROUND((RAND(CHECKSUM(NEWID())))\*(100000-1)+1,0), -- от 1 до 100 000

[TypeSwimmingId] = ROUND((RAND(CHECKSUM(NEWID())))\*(5-1)+1,0), -- от 1 до 5

[ResultTime] = UseTime1.[RandomTime]

FROM CTE\_UseTime UseTime1, CTE\_UseTime UseTime2 --делаем 1 000 000 записей

1. Решите следующую задачу.

Дана таблица людей People. Поля: ID, FirstName, ParentName, LastName, ID\_Father, ID\_Mother.

Для всех Дмитриев выведите их ФИО и ФИО их отцов.

--решаем через самосоединение таблицы

SELECT

FIO = CONCAT(men.[LastName],' ',men.[FirstName],' ',men.[ParentName]),

FIO\_father = CONCAT(father.[LastName],' ',father.[FirstName],' ',father.[ParentName])

FROM [People] men, [People] father

WHERE men.[ID\_Father] = father.[Id] AND men.[LastName] LIKE 'Дмитриев%'