



Bases de Datos Avanzadas (TICG1019)

Proyecto

Reservas de Vuelos

Integrantes

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12 de Enero del 2022

Rediseño de la base de Datos

La base de datos quedó distribuida de la siguiente manera:

Tabla Pasajero:

Sus clave primaria se encuentra formada por la composición de dos atributos *passId* y *passDob* esto debido a que como se menciona en la documentación se busca que al hacer inserción de datos esta carga pueda ser distribuida entre todos los servidores disponibles y no que uno sólo se encargue de todo por lo que se esta es una de las soluciones que se propone.

Tabla Vuelo:

Al igual que la tabla anterior se busca que al insertar datos esta carga pueda ser trabajada por varios servidores y no que uno solo escriba debajo de un último registro por lo que la solución propuesta es similar a la anterior, su clave primaria está formada por los atributos *flightId* y *flightDate*.

Tabla Reserva:

En la documentación se Spanner también se menciona que una de las soluciones es sacar un hash con las claves primarias y realizar la operación módulo con el total de servidores disponibles(en este caso 3) y de esa manera tener una carga más uniforme para cada servidor por lo que la clave primaria para estas tabla está conformada por el *ShardId* y el atributo *bookingId*

Tabla Detalles de Reserva:

A esta tabla no se le realizó ningún cambio con respecto a la original puesto que hace de una relación de muchos a muchos y sus únicos atributos son las claves de las tablas de las que nacen, es por esto su clave primaria está formada por *bookingId* y *PassId*

Tabla secuencias:

Esta tabla se añadió para poder ver los Id autoincrementables de las tablas para saber que Id sigue la secuencia luego de añadir un nuevo registro a cada tabla con excepción de la tabla de Detalles de Reserva.

Anexos:

CONSULTA

CONSULTA

CONSULTA

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CONSULTA

CONSULTA

NUEVA PESTAÑA

ACTUAL...

CANCELAR CONSULTA

CAMBIAR EL FORMATO DE LA CONSULTA

ACCESOS DIRECTOS

Ayuda para consultas de DML

TABLA

Press Alt+F1 for Accessibility Options.

1

-- Add new values in the VALUES clause in order of the column list.

2

-- Each value must be type compatible with its associated column.

3

insert into passenger (passid, passName, passMail, passDob) values (1, 'Kirbie', 'kdarrington@1688.com', '2021-09-30');

4

insert into passenger (passid, passName, passMail, passDob) values (2, 'Kelci', 'kcellas@mlb.com', '2021-06-07');

5

insert into passenger (passid, passName, passMail, passDob) values (3, 'Christy', 'csuttherman@cleantthemes.com', '2021-11-17');

6

insert into passenger (passid, passName, passMail, passDob) values (4, 'Olivier', 'ocaze@tumblr.com', '2021-02-27');

7

insert into passenger (passid, passName, passMail, passDob) values (5, 'Nicki', 'nccasid@liveinternet.ru', '2021-04-29');

8

insert into passenger (passid, passName, passMail, passDob) values (6, 'Henrietta', 'hlongridge@red.com', '2021-12-17');

9

insert into passenger (passid, passName, passMail, passDob) values (7, 'Natividad', 'nklosser@phoca.cz', '2021-04-18');

10

insert into passenger (passid, passName, passMail, passDob) values (8, 'Hayward', 'hbartoszewski@net.ne.jp', '2021-04-13');

11

insert into passenger (passid, passName, passMail, passDob) values (9, 'Tildy', 'tallman@bravesites.com', '2021-12-08');

12

insert into passenger (passid, passName, passMail, passDob) values (10, 'Ramsay', 'rmarry@github.com', '2021-04-03');

13

insert into passenger (passid, passName, passMail, passDob) values (11, 'Sibel', 'sacrotan@ui.com.br', '2021-10-10');

14

insert into passenger (passid, passName, passMail, passDob) values (12, 'Etty', 'enowland@hu.gov', '2021-10-12');

15

insert into passenger (passid, passName, passMail, passDob) values (13, 'Margaux', 'mshapler@doncdoogle.com.au', '2021-05-24');

16

insert into passenger (passid, passName, passMail, passDob) values (14, 'Rand', 'rressa@dogpile.com', '2021-07-12');

17

insert into passenger (passid, passName, passMail, passDob) values (15, 'Carri', 'cbrotherton@china.com.cn', '2021-12-20');

18

insert into passenger (passid, passName, passMail, passDob) values (16, 'Arrika', 'atraylen@colombia.edu', '2021-11-15');

19

insert into passenger (passid, passName, passMail, passDob) values (17, 'Drusy', 'droult@amazon.co.uk', '2021-05-21');

20

insert into passenger (passid, passName, passMail, passDob) values (18, 'Leslie', 'lboillin@last.fm', '2021-05-02');

21

insert into passenger (passid, passName, passMail, passDob) values (19, 'Cesar', 'cmarfey@discoast.net', '2021-06-27');

22

insert into passenger (passid, passName, passMail, passDob) values (20, 'Abbott', 'amitchinson@microsoft.com', '2021-09-05');

ESQUEMA

RESULTADOS

EXPLICACIÓN

Todos los resultados

1 fila insertadas

Esta declaración insertada

insert into passenger (passid, passName, passMail, passDob) values (93, 'Edwina', 'edraeskr@addtoany.com', '2021-12-28');

insert into passenger (passid, passName, passMail, passDob) values (94, 'Brent', 'bbraccor@storify.com', '2021-03-19');

insert into passenger (passid, passName, passMail, passDob) values (95, 'Nikita', 'ngonoldm@cnet.com', '2021-09-21');

insert into passenger (passid, passName, passMail, passDob) values (96, 'Nickola', 'ngarmonsm@walmart.com', '2021-06-25');

insert into passenger (passid, passName, passMail, passDob) values (97, 'Helenelizabeth', 'hbrenkonridger@wiley.com', '2021-09-17');

insert into passenger (passid, passName, passMail, passDob) values (98, 'Ailsun', 'ascarnewrp@studiopress.com', '2021-01-16');

insert into passenger (passid, passName, passMail, passDob) values (99, 'Jackqueline', 'jmcmanamomq@instagram.com', '2021-04-01');

insert into passenger (passid, passName, passMail, passDob) values (1000, 'Fannie', 'falfonsinir@exblog.jp', '2021-06-30');

Inserts en la tabla passenger

CONSULTA

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CONSULTA

NUEVA PESTAÑA

EJECUTAR

BORRAR CONSULTA

CAMBIAR EL FORMATO DE LA CONSULTA

ACCESOS DIRECTOS

Ayuda para consultas de DML

TABLA

Press Alt+F1 for Accessibility Options.

1

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (1, 'France', 'Indonesia', '2021-08-04', 10, 216.78);

2

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (2, 'China', 'Niger', '2021-01-22', 21, 509.6);

3

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (3, 'Cuba', 'Russia', '2021-02-04', 10, 641.53);

4

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (4, 'Serbia', 'United States', '2021-12-12', 33, 512.03);

5

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (5, 'Thailand', 'Norway', '2021-11-07', 30, 620.46);

6

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (6, 'China', 'Netherlands', '2021-01-26', 38, 543.3);

7

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (7, 'Thailand', 'Indonesia', '2021-08-15', 34, 356.01);

8

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (8, 'China', 'Costa Rica', '2021-03-04', 20, 296.03);

9

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (9, 'Indonesia', 'Peru', '2021-05-23', 50, 318.97);

10

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (10, 'Mauritius', 'Philippines', '2021-06-19', 18, 630.17);

11

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (11, 'Indonesia', 'Kenya', '2021-10-26', 45, 338.51);

12

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (12, 'Lithuania', 'Portugal', '2021-01-27', 2, 318.61);

13

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (13, 'Indonesia', 'China', '2021-02-02', 40, 408.46);

14

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (14, 'Russia', 'Russia', '2021-09-05', 20, 509.03);

15

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (15, 'Kazakhstan', 'Thailand', '2021-11-24', 46, 309.6);

16

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (16, 'Thailand', 'Ecuador', '2021-09-10', 16, 319.03);

17

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (17, 'Bangladesh', 'China', '2021-12-04', 46, 401.07);

18

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (18, 'Slovenia', 'Indonesia', '2021-08-19', 42, 200.47);

19

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (19, 'Russia', 'Poland', '2021-07-31', 31, 674.02);

20

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (20, 'Malaysia', 'China', '2021-09-15', 34, 420.14);

21

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (21, 'Nigeria', 'Armenia', '2021-12-07', 20, 500.55);

22

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (22, 'Philippines', 'Canada', '2021-09-30', 45, 431.44);

ESQUEMA

RESULTADOS

EXPLICACIÓN

Todos los resultados

1 fila insertadas

Esta declaración insertada

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (993, 'Brazil', 'Russia', '2021-10-19', 22, 556.84);

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (994, 'Portugal', 'China', '2021-12-30', 5, 316.51);

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (995, 'Greece', 'Brazil', '2021-08-16', 5, 616.59);

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (996, 'China', 'Belarus', '2021-09-04', 25, 517.26);

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (997, 'Belize', 'Philippines', '2021-05-18, 48, 379.28);

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (998, 'South Africa', 'Yemen', '2021-06-26', 21, 336.24);

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (999, 'Netherlands', 'Ukraine', '2021-09-10', 18, 426.14);

insert into flight (flightid, flightSource, flightDest, flightDate, flightSeat, ticketCost) values (1000, 'Russia', 'China', '2021-05-15', 1, 494.7);

Inserts en la tabla flight

Google Cloud Platform My Project

CONSULTA CONSULTA CONSULTA CONSULTA CONSULTA CONSULTA CONSULTA

4 NUEVA PESTAÑA

TABLA

EJECUTAR BORRAR CONSULTA CAMBIAR EL FORMATO DE LA CONSULTA ACCESOS DIRECTOS Ayuda para consultas de DML

Press Alt+F1 for Accessibility Options.

```
1 -- insert into booking (bookingId, bookDate, ShardId, flightId) values (1, '2021-08-18', 3, 42);
2 insert into booking (bookingId, bookDate, ShardId, flightId) values (2, '2021-08-19', 1, 768);
3 insert into booking (bookingId, bookDate, ShardId, flightId) values (3, '2021-11-05', 3, 266);
4 insert into booking (bookingId, bookDate, ShardId, flightId) values (4, '2021-08-09', 1, 487);
5 insert into booking (bookingId, bookDate, ShardId, flightId) values (5, '2021-02-14', 1, 13);
6 insert into booking (bookingId, bookDate, ShardId, flightId) values (6, '2021-09-28', 2, 813);
7 insert into booking (bookingId, bookDate, ShardId, flightId) values (7, '2021-04-01', 3, 109);
8 insert into booking (bookingId, bookDate, ShardId, flightId) values (8, '2021-05-10', 1, 743);
9 insert into booking (bookingId, bookDate, ShardId, flightId) values (9, '2021-09-24', 2, 988);
10 insert into booking (bookingId, bookDate, ShardId, flightId) values (10, '2021-10-11', 1, 117);
11 insert into booking (bookingId, bookDate, ShardId, flightId) values (11, '2021-09-06', 3, 662);
12 insert into booking (bookingId, bookDate, ShardId, flightId) values (12, '2021-09-09', 3, 771);
13 insert into booking (bookingId, bookDate, ShardId, flightId) values (13, '2021-11-18', 3, 463);
14 insert into booking (bookingId, bookDate, ShardId, flightId) values (14, '2021-02-02', 3, 677);
15 insert into booking (bookingId, bookDate, ShardId, flightId) values (15, '2021-04-20', 1, 216);
16 insert into booking (bookingId, bookDate, ShardId, flightId) values (16, '2021-11-15', 2, 765);
17 insert into booking (bookingId, bookDate, ShardId, flightId) values (17, '2021-11-25', 1, 668);
18 insert into booking (bookingId, bookDate, ShardId, flightId) values (18, '2021-04-07', 3, 368);
19 insert into booking (bookingId, bookDate, ShardId, flightId) values (19, '2021-08-03', 2, 687);
20 insert into booking (bookingId, bookDate, ShardId, flightId) values (20, '2021-09-28', 1, 564);
21 insert into booking (bookingId, bookDate, ShardId, flightId) values (21, '2021-05-11', 1, 454);
22 insert into booking (bookingId, bookDate, ShardId, flightId) values (22, '2021-07-28', 3, 233);
```

ESQUEMA RESULTADOS EXPLICACIÓN

Todos los resultados >

1 fila insertadas

Esta declaración insertada

- insert into booking (bookingId, bookDate, ShardId, flightId) values (993, '2021-04-17', 3, 478);
- insert into booking (bookingId, bookDate, ShardId, flightId) values (994, '2021-02-18', 2, 796);
- insert into booking (bookingId, bookDate, ShardId, flightId) values (995, '2021-07-23', 3, 715);
- insert into booking (bookingId, bookDate, ShardId, flightId) values (996, '2021-03-16', 3, 584);
- insert into booking (bookingId, bookDate, ShardId, flightId) values (997, '2021-10-04', 1, 954);
- insert into booking (bookingId, bookDate, ShardId, flightId) values (998, '2021-10-26', 3, 428);
- insert into booking (bookingId, bookDate, ShardId, flightId) values (999, '2021-04-08', 3, 789);
- insert into booking (bookingId, bookDate, ShardId, flightId) values (1000, '2021-06-23', 3, 885);

letada (tiempo transcurrido: 329.17 ms)

Inserts en la tabla booking

Google Cloud Platform My Project

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4 NUEVA PESTAÑA

TABLA

EJECUTAR BORRAR CONSULTA CAMBIAR EL FORMATO DE LA CONSULTA ACCESOS DIRECTOS Ayuda para consultas de DML

Press Alt+F1 for Accessibility Options.

```
1 insert into bookingdetails (bookingId, passId) values (97, 593);
2 insert into bookingdetails (bookingId, passId) values (945, 511);
3 insert into bookingdetails (bookingId, passId) values (926, 653);
4 insert into bookingdetails (bookingId, passId) values (532, 940);
5 insert into bookingdetails (bookingId, passId) values (323, 929);
6 insert into bookingdetails (bookingId, passId) values (225, 529);
7 insert into bookingdetails (bookingId, passId) values (827, 811);
8 insert into bookingdetails (bookingId, passId) values (893, 888);
9 insert into bookingdetails (bookingId, passId) values (442, 942);
10 insert into bookingdetails (bookingId, passId) values (396, 715);
11 insert into bookingdetails (bookingId, passId) values (152, 778);
12 insert into bookingdetails (bookingId, passId) values (191, 243);
13 insert into bookingdetails (bookingId, passId) values (321, 168);
14 insert into bookingdetails (bookingId, passId) values (125, 753);
15 insert into bookingdetails (bookingId, passId) values (24, 941);
16 insert into bookingdetails (bookingId, passId) values (911, 136);
17 insert into bookingdetails (bookingId, passId) values (285, 176);
18 insert into bookingdetails (bookingId, passId) values (487, 72);
19 insert into bookingdetails (bookingId, passId) values (134, 548);
20 insert into bookingdetails (bookingId, passId) values (821, 751);
21 insert into bookingdetails (bookingId, passId) values (219, 558);
22 insert into bookingdetails (bookingId, passId) values (513, 81);
```

ESQUEMA RESULTADOS EXPLICACIÓN

Todos los resultados >

1 fila insertadas

Esta declaración insertada

- insert into bookingdetails (bookingId, passId) values (797, 758);
- insert into bookingdetails (bookingId, passId) values (259, 838);
- insert into bookingdetails (bookingId, passId) values (445, 125);
- insert into bookingdetails (bookingId, passId) values (485, 158);
- insert into bookingdetails (bookingId, passId) values (137, 135);
- insert into bookingdetails (bookingId, passId) values (263, 478);
- insert into bookingdetails (bookingId, passId) values (763, 947);
- insert into bookingdetails (bookingId, passId) values (468, 338);

letada (tiempo transcurrido: 403.53 ms)

Inserts en la tabla bookingdetails