

Proiect BD

BD-P9: Asamblare PC

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Descriere:

Proiectul „Asamblare PC” urmărește implementarea unei aplicații Oracle APEX pentru gestionarea comenzilor de PC-uri personalizate. Sistemul permite înregistrarea clienților, a comenzilor și a componentelor utilizate în fiecare configurație. Baza de date este structurată pe patru tabele interconectate, respectând constrângerile de integritate. Aplicația oferă funcționalități pentru adăugare, vizualizare și gestionare a datelor, facilitând administrarea eficientă a procesului de asamblare.

Scriptul SQL DDL pentru implementarea tabelor:

```
create table pc_client(  
    cnp char(13) not null,  
    nume varchar2(40) not null,  
    email varchar2(40) not null,  
  
    constraint pc_client_pk primary key(cnp)  
);  
  
create table pc_componenta(  
    cod_c varchar2(10) not null,  
    denumire varchar2(80) not null,  
    producator varchar2(40) not null,  
    pret number(6) not null,  
  
    constraint pc_componenta_pk primary key(cod_c)  
);  
  
create table pc_comanda(  
    cod_pc varchar2(10) not null,  
    cnp_client char(13) not null,  
    data_comanda date not null,  
  
    constraint pc_comanda_pk primary key(cod_pc),  
    constraint pc_client_fk foreign key(cnp_client) references pc_client(cnp) on delete cascade  
);  
  
create table pc_lista_comanda(  
    cod_pc varchar2(10) not null,  
    cod_c varchar2(10) not null,  
    cantitate number(4) not null,  
  
    -- foreign keys  
    constraint pc_componenta_fk foreign key(cod_c) references pc_componenta(cod_c) on delete cascade,  
    constraint pc_comanda_fk foreign key(cod_pc) references pc_comanda(cod_pc) on delete cascade,  
  
    -- composite primary key  
    constraint pc_lista_comanda_pk primary key(cod_pc, cod_c)  
);
```

Scriptul SQL DML pentru adăugarea datelor:

COMPONENTE

```
insert into pc_componenta values('C669','Intel Raptor Lake Refresh, Core i5 14400F 2.5GHz','Intel',700);
insert into pc_componenta values('C506','AMD Ryzen 9 9900X 4.4GHz','AMD',2099);
insert into pc_componenta values('C112','Intel Arrow Lake, Core Ultra 9 285K 3.7GHz','Intel',3149);
insert into pc_componenta values('C971','AMD Ryzen Threadripper 7980X 3.2Ghz','AMD',27090);
insert into pc_componenta values('C807','Palit GeForce RTX 5090 GameRock 32GB GDDR7 512-bit DLSS 4.0','NVIDIA',14299);
insert into pc_componenta values('C206','ASRock Radeon RX 6600 Challenger D 8GB GDDR6 128-bit','AMD',1099);
insert into pc_componenta values('C868','Sapphire Nitro+ Radeon RX 7900 XTX Vapor-X 24GB GDDR6 384-bit','AMD',5259);
insert into pc_componenta values('C685','Sparkle Intel ARC A770 ROC Luna White 16GB GDDR6 256-bit','Intel',1924);
insert into pc_componenta values('C921','SSD Lexar NM710 1TB PCI Express 4.0 x4 M.2 2280','Lexar',269);
insert into pc_componenta values('C853','SSD Samsung 990 EVO Plus 2TB PCI Express 4.0 x4 M.2 2280','Samsung',699);
insert into pc_componenta values('C336','Memorie Kingston FURY Beast 32GB DDR5 6000MHz CL30 Dual Channel Kit','Kingston',539);
insert into pc_componenta values('C498','Memorie G.Skill Zeta R5 RDIMM 128GB DDR5 6400MHz CL32 Quad Channel Kit','G.Skill',4399);
insert into pc_componenta values('C834','Sursa ASUS ROG STRIX Aura Edition, 80+ Gold, 750W','ASUS',708);
insert into pc_componenta values('C814','Sursa Corsair RM1200e 80+ Gold 1200W','Corsair',1049);
insert into pc_componenta values('C550','Carcasa Fractal Design North TG charcoal dark','Fractal Design',892);
insert into pc_componenta values('C167','Placa de baza ASUS ROG STRIX X670E-F GAMING WIFI','ASUS',2469);
```

CLIENTI

```
insert into pc_client values('5061202411122','Paul Gondola','paul.gorgonzola@protonmail.com');
insert into pc_client values('1980107322077','Dan Ghimpul','dan.ghimpul98@mail.ru');
insert into pc_client values('6011021294866','Andreea Prahoveana','andreeapraaa@yahoo.com');
insert into pc_client values('1801102359886','Calin Popa','calin.popa@student.upt.ro');
insert into pc_client values('6040229355655','Alexandra Haidet','alexa.haidet2004@yandex.com');
```

COMENZI

```
insert into pc_comanda values('P92810','1980107322077','04/24/2025');
insert into pc_comanda values('P18019','1980107322077','04/25/2025');
insert into pc_comanda values('P18472','1801102359886','12/11/2024');
insert into pc_comanda values('P63803','5061202411122','02/27/2025');
insert into pc_comanda values('P21620','6040229355655','05/13/2025');
insert into pc_comanda values('P31999','5061202411122','03/28/2025');
insert into pc_comanda values('P54127','1801102359886','06/29/2024');
insert into pc_comanda values('P37272','6011021294866','01/16/2025');
```

LISTA COMENZI

```
insert into pc_lista_comanda values('P92810','C506',1);
insert into pc_lista_comanda values('P92810','C807',1);
insert into pc_lista_comanda values('P92810','C814',2);
insert into pc_lista_comanda values('P92810','C336',4);
insert into pc_lista_comanda values('P63803','C971',2);
insert into pc_lista_comanda values('P63803','C167',1);
insert into pc_lista_comanda values('P63803','C685',3);
insert into pc_lista_comanda values('P63803','C498',8);
insert into pc_lista_comanda values('P63803','C550',1);
insert into pc_lista_comanda values('P63803','C834',1);
insert into pc_lista_comanda values('P18472','C167',3);
insert into pc_lista_comanda values('P18472','C868',1);
insert into pc_lista_comanda values('P18019','C853',2);
insert into pc_lista_comanda values('P18019','C669',3);
insert into pc_lista_comanda values('P18019','C506',1);
insert into pc_lista_comanda values('P18019','C921',6);
insert into pc_lista_comanda values('P21620','C112',2);
insert into pc_lista_comanda values('P21620','C206',1);
insert into pc_lista_comanda values('P21620','C167',3);
insert into pc_lista_comanda values('P21620','C807',2);
insert into pc_lista_comanda values('P21620','C921',4);
insert into pc_lista_comanda values('P21620','C971',1);
insert into pc_lista_comanda values('P31999','C685',1);
insert into pc_lista_comanda values('P31999','C550',2);
insert into pc_lista_comanda values('P31999','C112',1);
insert into pc_lista_comanda values('P31999','C336',3);
insert into pc_lista_comanda values('P31999','C498',1);
insert into pc_lista_comanda values('P54127','C669',1);
insert into pc_lista_comanda values('P54127','C814',7);
insert into pc_lista_comanda values('P37272','C550',2);
insert into pc_lista_comanda values('P37272','C807',1);
insert into pc_lista_comanda values('P37272','C834',3);
```

Partea A:

PC Garage

paul.hondola@student.upt.ro

Cod Componenta	Denumire	Prodicator	Pret
C814	Sursa Corsair RM1200e 80+ Gold 1200W	Corsair	1049
C834	Sursa ASUS ROG STRIX Aura Edition, 80+ Gold, 750W	ASUS	708
C685	Sparkle Intel ARC A770 ROC Luna White 16GB GDDR6 256-bit	Intel	1924
C868	Sapphire Nitro+ Radeon RX 7900 XTX Vapor-X 24GB GDDR6 384-bit	AMD	5259
C853	SSD Samsung 990 EVO Plus 2TB PCI Express 4.0 x4 M.2 2280	Samsung	699
C921	SSD Lexar NM710 1TB PCI Express 4.0 x4 M.2 2280	Lexar	269
C167	Placa de baza ASUS ROG STRIX X670E-F GAMING WIFI	ASUS	2469
C807	Palit GeForce RTX 5090 GameRock 32GB GDDR7 512-bit DLSS 4.0	NVIDIA	14299
C336	Memorie Kingston FURY Beast 32GB DDR5 6000MHz CL30 Dual Channel Kit	Kingston	539
C498	Memorie G.Skill Zeta R5 RDIMM 128GB DDR5 6400MHz CL32 Quad Channel Kit	G.Skill	4399
C669	Intel Raptor Lake Refresh, Core i5 14400F 2.5GHz	Intel	700
C112	Intel Arrow Lake, Core Ultra 9 285K 3.7GHz	Intel	3149
C550	Carcasa Fractal Design North TG charcoal dark	Fractal Design	892
C206	ASRock Radeon RX 6600 Challenger D 8GB GDDR6 128-bit	AMD	1099
C971	AMD Ryzen Threadripper 7980X 3.2Ghz	AMD	27090
C506	AMD Ryzen 9 9900X 4.4GHz	AMD	2099

PC Garage

paul.hondola@student.upt.ro

Save

Search: All Text ColumnsGo

Actions

Edit

Add Row

Reset

		Cnp Client	Data Comanda
<input type="checkbox"/>			
<input checked="" type="checkbox"/>	P92810	1980107322077	4/24/2025
<input type="checkbox"/>	P18019	1980107322077	4/25/2025
<input type="checkbox"/>	P18472	1801102359886	12/11/2024
<input type="checkbox"/>	P63803	5061202411122	2/27/2025
<input type="checkbox"/>	P21620	6040229355655	5/13/2025
<input type="checkbox"/>	P31999	5061202411122	3/28/2025
<input type="checkbox"/>	P54127	1801102359886	6/29/2024
<input type="checkbox"/>	P37272	6011021294866	1/16/2025

1 rows selectedTotal 8

Search: All Text ColumnsGo

Actions

Edit

Add Row

Reset

		Cantitate
<input checked="" type="checkbox"/>	C336	4
<input type="checkbox"/>	C506	1
<input type="checkbox"/>	C807	1
<input type="checkbox"/>	C814	2

1 rows selectedTotal 4

PC Garage				
CNP Client 5061202411122 (Paul Gondola)				
Cod Comanda	Cod Componenta	Denumire	Pret	Canitate
P31999	C112	Intel Arrow Lake, Core Ultra 9 285K 3.7GHz	3149	1
P31999	C336	Memorie Kingston FURY Beast 32GB DDR5 6000MHz CL30 Dual Channel Kit	539	3
P31999	C498	Memorie G.Skill Zeta R5 RDIMM 128GB DDR5 6400MHz CL32 Quad Channel Kit	4399	1
P31999	C550	Carcasa Fractal Design North TG charcoal dark	892	2
P31999	C685	Sparkle Intel ARC A770 ROC Luna White 16GB GDDR6 256-bit	1924	1
P63803	C167	Placa de baza ASUS ROG STRIX X670E-F GAMING WIFI	2469	1
P63803	C498	Memorie G.Skill Zeta R5 RDIMM 128GB DDR5 6400MHz CL32 Quad Channel Kit	4399	8
P63803	C550	Carcasa Fractal Design North TG charcoal dark	892	1
P63803	C685	Sparkle Intel ARC A770 ROC Luna White 16GB GDDR6 256-bit	1924	3
P63803	C834	Sursa ASUS ROG STRIX Aura Edition, 80+ Gold, 750W	708	1
P63803	C971	AMD Ryzen Threadripper 7980X 3.2Ghz	27090	2

```

select
  c.cod_c as Cod_Componenta,
  c.denumire as Denumire,
  c.producator as Producator,
  c.pret as Pret,
  sum(lc.cantitate) as Total_Comenzi
from pc_componenta c
join pc_lista_comanda lc on lc.cod_c = c.cod_c
group by c.cod_c, c.denumire, c.producator, c.pret

```

PC Garage				
CNP Client 5061202411122 (Paul Gondola)				
Cod Componenta ↑	Denumire	Producator	Pret	Total Comenzi
C112	Intel Arrow Lake, Core Ultra 9 285K 3.7GHz	Intel	3149	3
C167	Placa de baza ASUS ROG STRIX X670E-F GAMING WIFI	ASUS	2469	7
C206	ASRock Radeon RX 6600 Challenger D 8GB GDDR6 128-bit	AMD	1099	1
C336	Memorie Kingston FURY Beast 32GB DDR5 6000MHz CL30 Dual Channel Kit	Kingston	539	7
C498	Memorie G.Skill Zeta R5 RDIMM 128GB DDR5 6400MHz CL32 Quad Channel Kit	G.Skill	4399	9
C506	AMD Ryzen 9 9900X 4.4GHz	AMD	2099	2
C550	Carcasa Fractal Design North TG charcoal dark	Fractal Design	892	5
C669	Intel Raptor Lake Refresh, Core i5 14400F 2.5GHz	Intel	700	4
C685	Sparkle Intel ARC A770 ROC Luna White 16GB GDDR6 256-bit	Intel	1924	4
C807	Palit GeForce RTX 5090 GameRock 32GB GDDR7 512-bit DLSS 4.0	NVIDIA	14299	4
C814	Sursa Corsair RM1200e 80+ Gold 1200W	Corsair	1049	9
C834	Sursa ASUS ROG STRIX Aura Edition, 80+ Gold, 750W	ASUS	708	4
C853	SSD Samsung 990 EVO Plus 2TB PCI Express 4.0 x4 M.2 2280	Samsung	699	2
C868	Sapphire Nitro+ Radeon RX 7900 XTX Vapor-X 24GB GDDR6 384-bit	AMD	5259	1
C921	SSD Lexar NM710 1TB PCI Express 4.0 x4 M.2 2280	Lexar	269	10
C971	AMD Ryzen Threadripper 7980X 3.2Ghz	AMD	27090	103

```

select
  com.cod_pc as Cod_Comanda,
  comp.cod_c as Cod_Componenta,
  comp.denumire as Denumire,
  comp.pret as Pret,
  lc.cantitate as Cantitate
from pc_comanda com
join pc_lista_comanda lc on lc.cod_pc = com.cod_pc
join pc_componenta comp on comp.cod_c = lc.cod_c
where com.cnp_client = '0000000000000'
order by com.cod_pc, comp.cod_c;

```

Partea B:

PC Garage		paul.hondola@student.upt.ro	
Nume		Email	
Calin Popa		calin.popa@student.upt.ro	
Dan Ghimpul		dan.ghimpul98@mail.ru	
Paul Gondola		paul.gorgonzola@protonmail.com	
Andreea Prahoveana		andreeapraaa@yahoo.com	
Alexandra Haidet		alexa.haidet2004@yandex.com	

PC Garage		paul.hondola@student.upt.ro	
Comanda		✕	
P18019 (Dan Ghimpul)			
Componenta		✕	
Palit GeForce RTX 5090 GameRock 32GB GDDR7 512-bit DLSS 4.0			
Cantitate			
1000			

```
select distinct lc.cod_pc || ' (' || pccl.nume || ') ', lc.cod_pc as "Codul comenzii" from pc_lista_comanda lc
join pc_comanda pcc on lc.cod_pc = pcc.cod_pc
join pc_client pccl on pcc.cnp_client = pccl.cnp
```

```
DECLARE
    l_exists NUMBER;
BEGIN
    SELECT COUNT(*)
    INTO l_exists
    FROM pc_lista_comanda
    WHERE cod_pc = :P7_COD_PC
        AND cod_c = :P7_COD_C;

    IF l_exists = 0 THEN
        INSERT INTO pc_lista_comanda (cod_pc, cod_c, cantitate)
        VALUES (:P7_COD_PC, :P7_COD_C, :P7_CANTITATE);
        apex_application.g_print_success_message := 'Produsul a fost adaugat comenzii.';
    ELSE
        UPDATE pc_lista_comanda
        SET cantitate = cantitate + :P7_CANTITATE
        WHERE cod_pc = :P7_COD_PC
            AND cod_c = :P7_COD_C;

        -- Display message for user
        apex_application.g_print_success_message := 'Cantitatea a fost actualizată pentru componenta deja existentă.';
    END IF;

    :P7_COD_PC := NULL;
    :P7_COD_C := NULL;
    :P7_CANTITATE := NULL;
END;
```

PC Garage				
<div>Cod Comanda</div> <div>P18019 (Dan Ghimpul)</div>				
Cod C ↑	Denumire	Producator	Pret	Cantitate
C506	AMD Ryzen 9 9900X 4.4GHz	AMD	2099	1
C669	Intel Raptor Lake Refresh, Core i5 14400F 2.5GHz	Intel	700	3
C853	SSD Samsung 990 EVO Plus 2TB PCI Express 4.0 x4 M.2 2280	Samsung	699	2
C921	SSD Lexar NM710 1TB PCI Express 4.0 x4 M.2 2280	Lexar	269	6
C971	AMD Ryzen Threadripper 7980X 3.2Ghz	AMD	27090	100

```
select c.cod_pc || ' (' || cl.numc || ')' as display_value,
       c.cod_pc as return_value
from pc_comanda c
join pc_client cl on c.cnp_client = cl.cnp
```

```
select pcco.cod_c, pcco.denumire, pcco.producator, pcco.pret, pclc.cantitate from pc_componenta pcco
join pc_lista_comanda pclc on pclc.cod_c = pcco.cod_c
where pclc.cod_pc = :P_VMAX
```

PC Garage				
<div></div> <div>paul.hondola@student.upt.ro</div>				
Cnp	Nume	Numar Comenzi	Pret Total	
6040229355655	Alexandra Haidet	1	71568	
6011021294866	Andreea Prahoveana	1	18207	
1801102359886	Calin Popa	2	20709	
1980107322077	Dan Ghimpul	2	2736863	
5061202411122	Paul Gondola	2	112086	

```
SELECT
    cl.cnp,
    cl.numc,
    COUNT(DISTINCT c.cod_pc) AS numar_comenzi,
    SUM(lc.cantitate * comp.pret) AS pret_total
FROM
    pc_client cl
JOIN
    pc_comanda c ON cl.cnp = c.cnp_client
JOIN
    pc_lista_comanda lc ON c.cod_pc = lc.cod_pc
JOIN
    pc_componenta comp ON lc.cod_c = comp.cod_c
GROUP BY
    cl.cnp, cl.numc
ORDER BY cl.numc
```