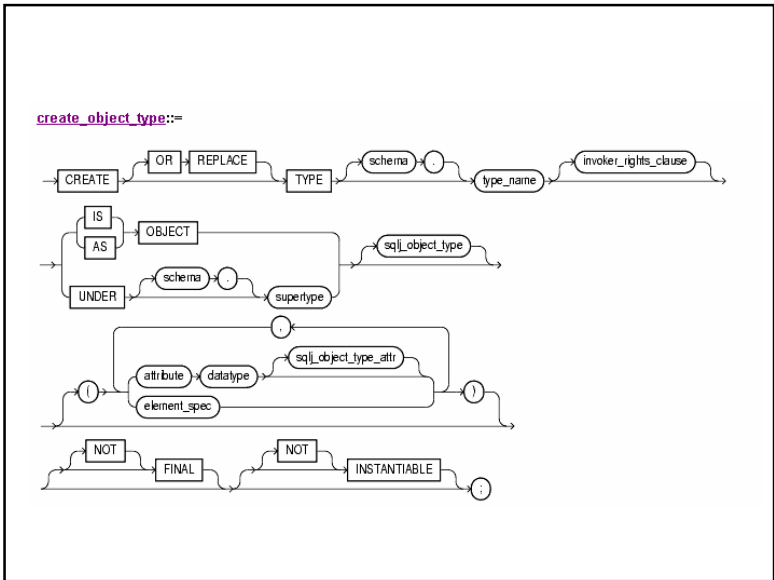
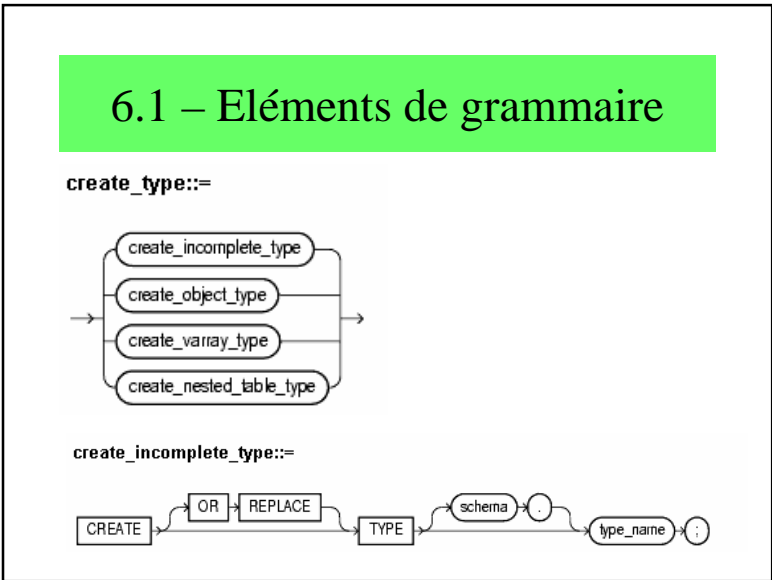
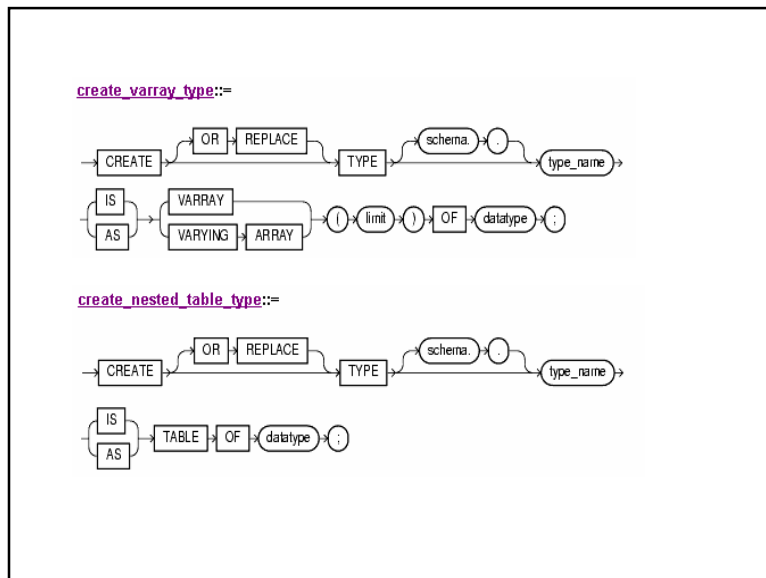
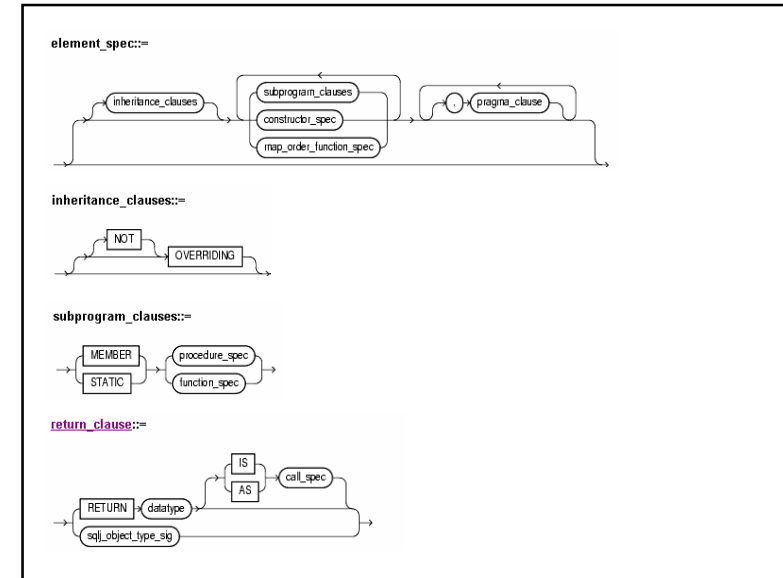
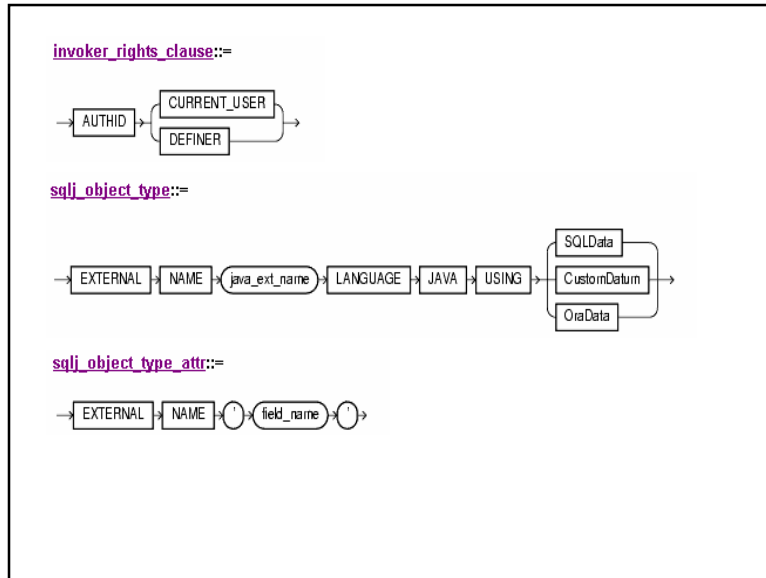


# Chapitre VI ORACLE et les objets

## ORACLE et les objets

- 6.1 – Eléments de grammaire
- 6.2 – Exemples avec objet
- 6.3 – Conclusion



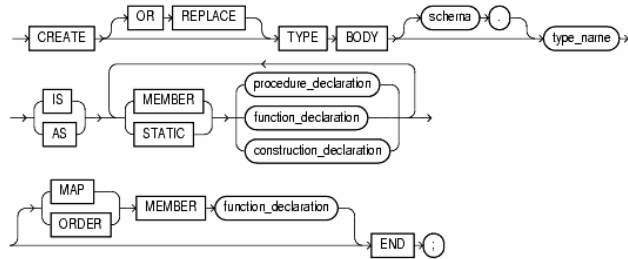


## Exemple de création

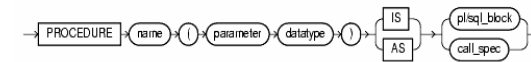
```

CREATE TYPE customer_typ_demo AS OBJECT
(
  customer_id      NUMBER(6)
  , cust_first_name  VARCHAR2(20)
  , cust_last_name  VARCHAR2(20)
  , cust_address    CUST_ADDRESS_TYP
  , phone_numbers   PHONE_LIST_TYP
  , nls_language     VARCHAR2(3)
  , nls_territory    VARCHAR2(30)
  , credit_limit     NUMBER(9,2)
  , cust_email       VARCHAR2(30)
  , cust_orders      ORDER_LIST_TYP
) ;
  
```

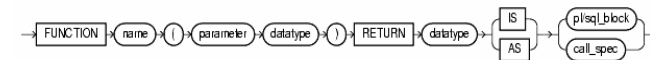
## CREATE TYPE BODY



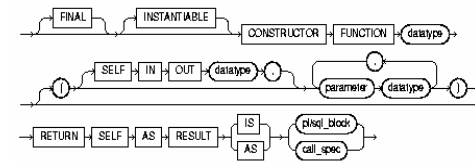
**procedure\_declaration::=**



**function\_declaration::=**



**constructor\_declaration::=**



```

ALTER TYPE data_typ
  ADD MEMBER FUNCTION qtr(der_qtr DATE)
  RETURN CHAR CASCADE;

CREATE OR REPLACE TYPE BODY data_typ IS
  MEMBER FUNCTION prod (invent NUMBER) RETURN NUMBER IS
  BEGIN
    RETURN (year + invent);
  END;
  MEMBER FUNCTION qtr(der_qtr DATE) RETURN CHAR IS
  BEGIN
    IF (der_qtr < TO_DATE('01-APR', 'DD-MON')) THEN
      RETURN 'FIRST';
    ELSIF (der_qtr < TO_DATE('01-JUL', 'DD-MON')) THEN
      RETURN 'SECOND';
    ELSIF (der_qtr < TO_DATE('01-OCT', 'DD-MON')) THEN
      RETURN 'THIRD';
    ELSE
      RETURN 'FOURTH';
    END IF;
  END;
END;

```

```

CREATE TYPE data_typ AS OBJECT
( year NUMBER,
  MEMBER FUNCTION prod(invent NUMBER) RETURN NUMBER
);

CREATE TYPE BODY data_typ IS
  MEMBER FUNCTION prod (invent NUMBER) RETURN NUMBER IS
  BEGIN
    RETURN (year + invent);
  END;
END;

CREATE TYPE phone_list_typ AS VARRAY(5) OF VARCHAR2(25);

CREATE TYPE cust_address_typ2 AS OBJECT
( street_address VARCHAR2(40)
, postal_code VARCHAR2(10)
, city VARCHAR2(30)
, state_province VARCHAR2(10)
, country_id CHAR(2)
, phone phone_list_typ
);

CREATE TYPE cust_nt_address_typ
AS TABLE OF cust_address_typ;

```

## 6.2 – Exemple avec objet

```
Create or replace Type house_t As Object
(
  length Number,
  width Number,
  height Number,
  Member Function square_foot Return Number,
  Member Function volume Return Number
);
```

## Création du corps

```
Create or replace Type Body house_t AS
Member Function square_foot Return Number is
  Begin
    Return length * width;
  End;
Member Function volume Return Number is
  Begin
    Return length * width * height;
  End;
End;
```

## Création d'une table avec objet

```
Create Table houses (house varchar2(20),
  house_dimensions house_t);
```

```
Insert into houses Values
('Townhouse',house_t(85,70,35));
```

Length width height

## Procédure avec objet

```
Declare
  area Number ;
  volume Number;
  housetemp house_t;
Begin
  Select house_dimensions Into housetemp
  From houses Where house = ' Townhouse ' ;
  area:=housetemp.squar_foot();
  volume:=housetemp.volume();
  ...
END;
```

### 6.3 – Conclusion

- Intégration de quelques possibilités objet
- ORACLE = SGBD Relationnel-Objet