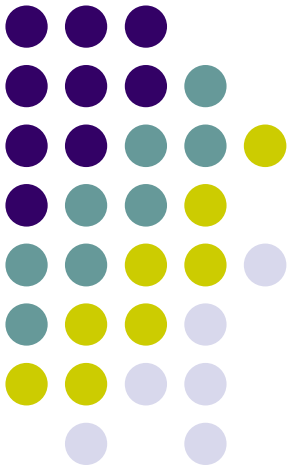
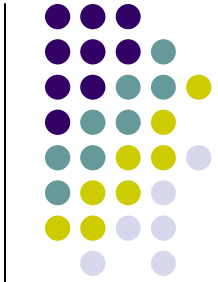
Variables and built-in functions

CIS 331: Introduction to Database Systems

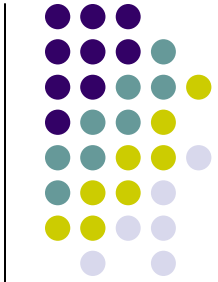


Topics:



- SQL*Plus string functions
  - UPPER()
  - LOWER()
  - SUBSTR()
- SYSDATE() function
- Variables in SQL*Plus
- PROMPT ... ACCEPT ...
- TTITLE, BTITLE
- BREAK

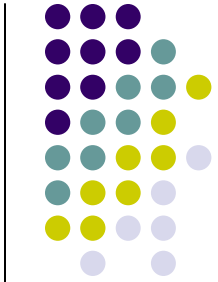
String functions



- Some basic string manipulation functions are switching case and getting substrings:

```
SELECT first_name, middle_name, UPPER(last_name)
    FROM professors
;

SELECT LOWER(first_name), SUBSTR(middle_name, 1, 1),
    UPPER(last_name)
    FROM professors
;
```

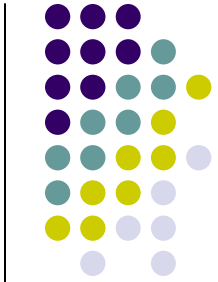
String functions



- || is used to concatenate strings:

```
SELECT first_name || ' ' || SUBSTR(middle_name, 1, 1)
     || ' ' || UPPER(last_name)
     FROM professors
;
```

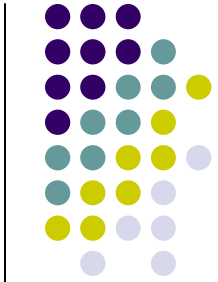
Sysdate



- SYSDATE is used to get system date and time:

```
SELECT sysdate
    FROM dual
;
```

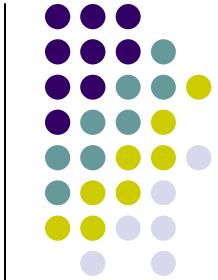
Sysdate



- You can format SYSDATE in any style you can imagine:

```
SELECT to_char(sysdate, 'mm-dd-yy')
    FROM dual
;

SELECT to_char(sysdate, 'mm/dd/yyyy')
    FROM dual
;

SELECT to_char(sysdate, 'hh24:mi:ss')
    FROM dual
;
```

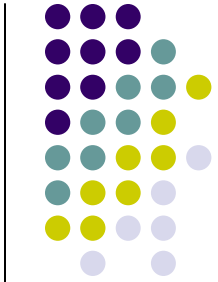
SQL*Plus variables



- Introducing variables in the SQL*Plus environment:

```
DEFINE MY_NAME = 'Gilgamesh';

DEFINE;

UNDEFINE MY_NAME;

DEFINE;

DEFINE MY_NAME = 'Enkidu';

SELECT '&MY_NAME'
    FROM dual
;
```

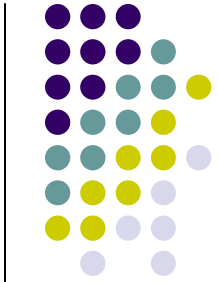
Prompt … Accept …



- PROMPT … ACCEPT … is used to interactively get information from the user:

```
PROMPT 'What is your name? '
   ACCEPT your_name

PROMPT &your_name
```

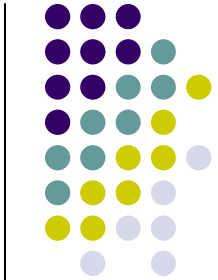
TTitle



- TTITLE sets the header for the output page:

```
COLUMN middle_name FORMAT A1;

TTITLE 'All students taking CIS664'

SELECT first_name, middle_name, last_name
    FROM students
    WHERE ssn IN
    (
     SELECT student
         FROM students_classes
              WHERE class = 'CIS664'
    )
;
```

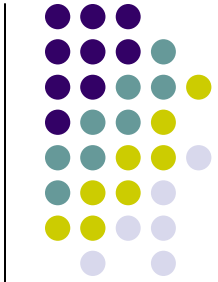
TTitle, BTitle



- Similarly, BTITLE sets the footer for the output page:

```
BTITLE LEFT  'CIS664: Data Mining'
TTITLE RIGHT 'All students taking CIS664'

SELECT first_name, middle_name, last_name
    FROM students
        WHERE ssn IN
        (
        SELECT student
            FROM students_classes
                WHERE class = 'CIS664'
        )
;
```

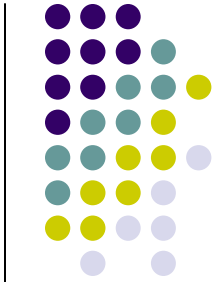
SQL.PNO



- **SQL.PNO is the number of the current output page:**

```
BTITLE OFF
TTITLE CENTER 'All students taking CIS664' SKIP CENTER -
'Page ' SQL.PNO SKIP 2

SELECT first_name, middle_name, last_name
    FROM students
        WHERE ssn IN
        (
        SELECT student
            FROM students_classes
                WHERE class = 'CIS664'
        )
;
```

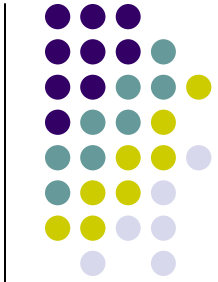
Break



- Something more sophisticated - list all students in all classes, one class per page:

```
SET PAGESIZE 15;
CLEAR BRAKES;

COLUMN CLASS_ID NOPRINT NEW_VALUE CLASS_ID;

TTITLE CENTER 'List of all students' SKIP -
CENTER 'taking class ' CLASS_ID

BTITLE SKIP 2;

BREAK ON CLASS_ID SKIP PAGE ON CLASS_ID

SELECT first_name, middle_name, last_name, class CLASS_ID
    FROM students_classes sC, students S
        WHERE SC.student = S.ssn
            ORDER BY class;
```

TTitle again



- Even more sophistication - let us use custom formatted current date in the TTITLE:

```
SET PAGESIZE 10
COLUMN my_date NOPRINT NEW_VALUE my_date

SELECT to_char(sysdate, 'mm/dd/yyyy') my_date
    FROM dual
;

TTITLE CENTER 'Today is &my_date' skip 3
BTITLE OFF

SELECT name
   FROM departments
;
```