LaSalle College
Montréal

Project : 30%

Course Identification

Name of program– Code	COMPUTER SCIENCE TECHNOLOGY - PROGAMMING (420.BP) INFORMATION TECHNOLOGY PROGRAMMER-ANALYST (LEA.3Q)
Course title:	**DATABASES II**
Course number:	420-BD2-AS
Group:	4750
Teacher's name:	M.Zeroug
Duration:	Extended
Semester:	Fall 2025

Student Identification

Name: ______________________________ Student number: ________

Date: _________________ Result: _______________

☐ I declare that this is an original work, and that I credited all content sources of which I am not the author (online and printed, images, graphics, films, etc.), in the required quotation and citation style for this work.

Standard of the Evaluated Competency

Statement of the evaluated competency – Code

Use a database management system- 00Q7

Evaluated elements of the competency	*Relevant performance criteria specific to each element*
4. Program automated data processing operations.	4.1 Accurate identification of data processing operations to be automated 4.2 Appropriate creation of stored procedures and scripts

Instructions

- This exam lasts 4 periods.
- No break is allowed in this exam. Students are not allowed to exit the examination room before half of the allotted time has passed. Once a student has exited the classroom, he or she may not re-enter. (PIEA – Article 5.12.4)
- Students must be silent during the exam time.
- It is the teacher's responsibility to identify language errors. If such errors are found, teachers may deduct 10% to 20% of the final grade. (PIEA – Article 5.7)
- Plagiarism, attempts at plagiarism or complicity in plagiarism during an evaluation worth 20% or more of the final grade results in a mark of zero (0) for that course. (PIEA – Article 5.18)
- Wait for the teacher's signal before turning this page.
- Permitted software: SqlDeveloper or vscode
- Permitted equipment: Laptop
- Permitted notes: Course notes (Any concept you didn't learn in class is not accepted)

Mark Breakdown

This evaluation is worth 100 points, distributed as follows:

Questions	Mark	Total
Q1	10	10 points
Q2	10	10 points
Q3	10	10 points
Q4	20	20 points
Q5	20	20 points
Q6.a	20	20 points
Q6.b	10	10 points
Total		100

1) Use the script that we provide you in order to create the following database tables:

PILOT

COLUMN	TYPE	SIZE	Explanation
PILOT_ID	N	3	Pilot id
LAST_NAME	V	20	Last name
FIRST_NAME	V	20	Fist name
CITY_ID	N	3	City id
SALARY	N	7,2	salary

CITY

COLUMN	TYPE	SIZE	Explanation
CITY_ID	N	3	City id
CITY_NAME	V	20	City name

PLANE

COLUMN	TYPE	SIZE	Explanation
PLA_ID	N	2	Plane id
PLA_DESC	V	20	Plane description
MAX_PASSENGER	N	3	Maximum of passenger
CITY_ID	N	3	City id

FLIGHT

COLUMN	TYPE	SIZE	Explanation
FLIGHT_ID	N	3	Flight id
PILOT_ID	N	3	Pilot id
PLA_ID	***N***	2	Plane id
CITY_DEP	***N***	3	City id departure
CITY_ARR	***N***	3	City id arrivals
DEP_DATE	***D***		
DEP_TIME	***N***	4	Departure time
ARR_TIME	***N***	4	Arrival time

2)

a) By using SELECT .. BULK COLLECT .., type a plsql program that asks to enter a city id and display all planes based in this city (pla_id, desc, max_passenger and city name)

b) Execute this code for the cities : 102, 101

3)

a)By using a cursor, type a PL/SQL program that displays the (id, description, capacity and city name) for all planes located in particular city (enter city name regardless of the case: ex:MonTreal) and their max passenger is greater or equal to a particular number.

b) Execute this this code

4)

a) Create the stored function **NbOfPlanesPerCity** that accepts the parameter : **city name** and returns the number of planes located in that city.
b) Test the function **NbOfPlanesPerCity** (the city name could be entered in upper or lower case)

5)

a) Create the stored procedure **ListOfFlights** that accepts the parameter : **city name** (departure city) and displays the list of flights ordered in ascending order of departure time (the columns to display are : flight id, pilot name, plane description, departure time, arrival time, arrival city name)

b) Test the procedure **ListOfFlights** (the city name could be entered in upper or lower case)

6)

a) Create the package and package body called Pack_Pilot that defines the following objects :

- **Update_Salary :** allows increase/decrease the salary of pilot according to a new amount or a percentage (use a technic to define an overload object with the same function/procedure name) (the info to output : pilot id, last name, old salary, new salary, the amount or percentage)
- **List_Of_Pilots** : pilots who pilot a particular plane (pilot_id, last_name, pla_desc pilot city_name) (use cursor with parameter)
- **Nb_Planes :** Returns the total number of planes flown by a given pilot.

b) Type a plsql program that test the objects of this package

- Test Update_Salary, List_Of_Pilots and Nb_Planes

Note:

-Is not allowed to change anything in the script: flight2025.sql

-It is recommended to manage usual exceptions (for all questions)

-The members of the team (or a student) must do oral presentation and answer to questions.

- If the members of the team (or a student) are absent in the oral presentation without justification the mark zero is assigned

What you should deliver

1- The solution of each question (Q2.sql, Q3.sql,Q4.sql,Q5.sql, Q6.sql)

2- One pdf file that contains the question statement and the screenshot of result

Due date : December the 2nd

PILOT

PILOT_ID	LAST_NAME	FIRST_NAME	CITY_ID	SALARY
1	FANTASSO	ALBERT	100	7000
2	PETERS	FRANK	101	7000
3	ROSS	PAUL	102	6000
4	MIRANDA	SERGE	100	5800
5	TALADOIRE	GILLES	101	6200
6	BONFILS	GERARD	101	6000
7	LAHRIRE	PHILLIPE	103	5200
8	MARCENAC	PIERRE	102	5800
9	CAVARERO	ERIC	102	6000
10	TAYLOR	ROBERT	100	6800

CITY

CITY_ID	CITY_NAME
100	OTTAWA
101	QUEBEC
102	MONTREAL
103	TORONTO
104	VICTORIA
105	EDMONTON

PLANE

PLA_ID	PLA_DESC	CAPACITY	CITY_ID
1	A300	300	102
2	A310	300	102
3	B727	250	100
4	A300	280	103
5	CONCORDE	160	102
6	B747	460	100
7	B727	250	100
8	A310	300	101
9	B737	350	103
10	CONCORDE	160	100

FLIGHT

FLIGHT_ID	PILOT_ID	PLA_ID	CITY_DEP	CITY_ARR	DEP_DATE	DEP_TIME	ARR_TIME
100	1	1	102	103	12-OCT-21	1100	1430
101	1	8	100	103	12-OCT-21	1700	2000
102	2	1	101	103	10-NOV-21	1400	1600
103	5	3	101	103	05-MAY-21	1800	2000
104	9	1	100	102	14-APR-21	645	730
105	10	2	103	102	12-JAN-21	1100	1400
106	1	4	102	103	31-DEC-21	800	1100
107	8	4	102	100	25-FEB-21	715	800
108	1	8	104	103	13-JUN-21	900	1300
109	9	2	102	100	18-AUG-21	1215	1300
110	4	5	100	103	04-SEP-21	1500	1800
111	1	2	103	104	13-AUG-21	1630	2030
112	4	5	102	105	15-NOV-21	1100	1420
113	3	5	105	100	18-OCT-21	1500	1800
114	8	9	100	101	26-DEC-21	1700	1830
115	7	5	100	101	14-NOV-21	1800	1930

Statement of the competency:

Use a database management system- 00Q7

Elements of the Competency	**Performance Criteria**	*Questions*	**Excellent** Evidence of a profoundly developed competency	**Highly Satisfactory** Evidence of a highly developed competency	**Satisfactory** Evidence of a developed competency	**Minimal** Evidence of an underdeveloped competency
3. Program automated data Processing operations.	• Accurate identification of data processing operations • Appropriate creation of stored procedures and scripts		The students made a perfect data processing	The students generally made a correct data processing	The students often made a correct data processing	The students sometimes made a correct data processing
		Q1	[10-9]	[9-8[	[8-7[	[7-6[
		Q2	[10-9]	[9-8[	[8-7[	[7-6[
		Q3	[10-9]	[9-8[	[8-7[	[7-6[
		Q4	[20-18]	[18-16[	[16-14[	[14-12[
		Q5	[20-18]	[18-16[	[16-14[	[14-12[
		Q6.a	[20-18]	[18-16[	[16-14[	[14-12[
		Q6.b	[10-9]	[9-8[	[8-7[	[7-6[

CORRECTION GRID FOR LANGUAGE

Clear Communication	Clear Communication, **most of the time**	Vague Communication	Unclear Communication
- 0	- 0,5	- 1,5	- 2
(Word Choice) Use of precise and rich vocabulary	(Word Choice) Use of precise vocabulary	(Word Choice) Use of imprecise vocabulary	(Word Choice) Use of inappropriate vocabulary
- 0	- 0,5	- 1,5	- 2
(Format/Type of work) Respect of norms	(Format/Type of work) Respect of **most of the** norms	(Format/Type of work) Non-respect of the norms	(Format/Type of work) Inappropriate in relation to the required norms
- 0	- 0,5	- 1,5	- 2
(Linguistic Code) (≤2 mistakes / page)	(Linguistic Code) (3-7 mistakes/page)	(Linguistic Code) (8-10 mistakes/ page)	(Linguistic Code) (>10 mistakes/ page)
- 0	- 0,5 - 2.5	- 2.5 - 3.5	- 4