



HIGHER EDUCATION PROGRAMMES

Academic Year 2024:	July - December
Formative Assessment 3:	Systems Development 2 (HSYD201-1)
NQF Level, Credits:	6, 40
Weighting:	25%
Assessment Type:	Practical exercises
Educator:	O. Dyantyi
Examiner:	O. Dyantyi
Due Date:	11 November 2024
Total:	50 marks

Instructions:

- This formative assessment consists of TWO Questions.
- The assessment is based on Units 6 to 8 (Modules 1 to 5) of the study guide.

The assessment covers the following learning outcomes:

- Working with files and databases
- Connecting Java to a Database
- Transaction Processing

Question 1

[15 marks]

InterSA is a bus company that offers its travelling services to its customers throughout southern Africa. When passengers board the bus, there's usually someone who registers passengers' details using a notebook (hardcopy). The details include Name, Surname, Destination, and Contact No. (person-related). InterSA has approached you to help them create a graphical user interface (GUI) application that will record these details instead of recording them in a hardcopy book.

Use MySQL workbench to create a database schema named **“fa3_assessment”**. Within the database, create a table to store passenger details and name it **“passenger_details”**. Create the passenger_details fields as follows:

TABLE: student_booking

Field names	Data type	Primary key	Description
FName	VARCHAR(15)	No	passenger's first name
LName	VARCHAR(15)	No	passenger's last name
Dest	VARCHAR(25)	No	passenger's destination
Phone	VARCHAR(10)	No	passenger's relative phone number

NB Please use the field names in the table above.

You should be able to see the following when finished:

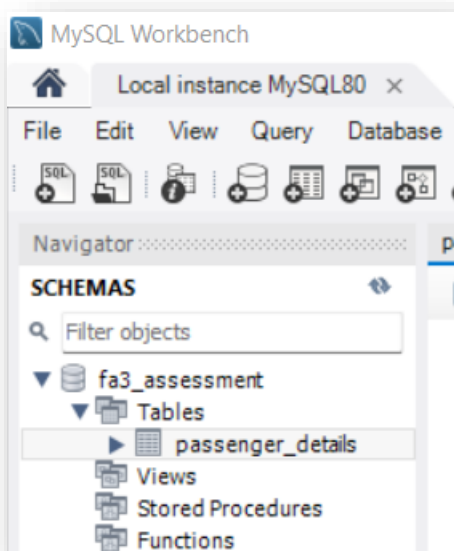


Table Name: Schema: **fa3_assessment**

Charset/Collation: Engine:

Comments:

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
FName	VARCHAR(15)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LName	VARCHAR(15)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dest	VARCHAR(25)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Phone	VARCHAR(10)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Export your database “fa3_assessment” and Zip/compress the dump folder for submission on Colcampus as your Question 1.

Question 2

[35 marks]

Use NetBeans IDE to create a Java Swing application (GUI) that will interact with the passenger_details table where the user can enter/insert and view passengers who boarded the bus. Save the application as “**FormativeAssessment 3 GUI.java**”

NB records/information MUST be entered into the table “passenger_details” through the graphical user interface (GUI).

You should be able to see the following when finished:

Java Swing (GUI)

InterSA Boarded Passengers

Name **Surname**

Destination **Phone**

Name	Surname	Destination	Phone
Thembi	Mtyali	Gqeberha	0835214523
Peter	Parker	Graaf Reneit	0835214524
Hendrik	Botha	Gqeberha	0835214523
Owen	Kruger	Gqeberha	0865231425
Adam	Osthusien	East London	0865231429

After inserting the student information via the Java Swing (GUI) the records are logged in the table "student_booking".

Limit to 1000 rows

```
1 • SELECT * FROM fa3_assessment.passenger_details;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: ☐

	FName	LName	Dest	Phone
▶	James	Gada	Umtata	0732518256
	Sheron	Mthembu	East London	0862541235
	Thembi	Mtyali	Gqeberha	0835214523
	Peter	Parker	Graaf Reneit	0835214524
	Hendrik	Botha	Gqeberha	0835214523
	Owen	Kruger	Gqeberha	0865231425
	Adam	Osthusien	East London	0865231429

Zip/compress the “FormativeAssessment 3 GUI” project folder and submit it on ColCampus as your Questions 2.

Criteria	Task	Marks
Question 1		
MySQL Database.	A database is created successfully using the provided schema (fa3_assessment) and table (passenger_details) names. The table fields FName, LName, Dest, and Phone have been used.	15 marks
Question 2		
Java Program execution	<p>The program executes without any syntax or runtime errors.</p> <p>The application allows users to insert and view records stored in a MySQL database using the "insert" and "view" buttons.</p> <p>The program uses the Java connection string to connect to the MySQL database and table.</p> <p>The program uses Java “insert” and “select” SQL statements to insert and view table records.</p>	20 marks
Java correct output	The application can display records from the MySQL table “passenger_details” and to the GUI. What is shown in the passenger_details table must also be shown in the GUI.	10 marks
Design of logic	The program flows logically. The program is user-friendly, as shown in the example provided.	5 marks

Study guide, Modules 1 - 5, pg. 102 - 661.

Questions 1 and 2 assessed the following learning outcome(s):

Connecting JAVA to a Database.

Transaction Processing.