ITEC200
ASSESSMENT 3 REPORT PRESENTATIONS
ASSESSMENT GUIDELINES

Assessment Overview

Due Dates	8th June 2023 at 8am
Weighting	40%
Length and /or formate	Reporting including SQL code + Video recorded presentations
Learning outcomes assessed	LO2, LO3, LO4
Graduates attributes assessed	GA4, GA10, GA1
How to submit	Via LEO
Return of assignment	After semester results release
Assessment criteria	Rubrics: see at end of document

Context

The Institute of Sport and High Performance (ISHP) is a Sports Science Lab based in Toronto, Canada, that gathers and analyses data from state-of-the-art technology to allow athletes to perform at their highest level for the rest of their life, and not be restricted by injury.

ISHP works directly with healthcare providers, trainers & coaches to create a comprehensive client approach driven by data.

Please watch the following project introduction video By Dr. Lauren Karatanevsk one of the co-founders of ISHP about the project goals.

Database Requirements – clients informations

ISHP Database needs to store the following details for each Client:

ID	2	**Origin**	Caucasian	**Weight**	63 kg
Last Name	Fowles	**Age**	26	**BMI**	27.3
First Name	Samantha	**Gender**	F		
Date of birth	1996-10-17	**Height**	152 cm		

Note that Weight and Hight may change over time, therefore clients' Weight and Hight will be measured and recorded during each client's visit. The database should store the history of Weight and Hight and visit date.

Also, note that AGE and BMI are calculated fields:

AGE= Current Date - Date of Birth

BMI = weight in kilograms divided by height in meters squared (kg/m^2)

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Data collections technology (1) & Sample Data files

ISHP uses various devices/technologies to measure different body/health factors.

ISHP uses the PNOĒ system which is a resting metabolic test that delivers clinical accuracy in measuring metabolic, heart, lung, and cellular fitness, and provides the gold standard in nutrition and exercise personalisation. The following short video provides an introduction to the PNOĒ system.

The devices used by ISHP, including the PNOĒ system, generate a CSV file as output which includes the data recorded during the test. The following sample CSV files are provided by ISHP (Please download):

- CSV file of an Active Metabolic Rate (AMR) Assessment
- CSV file of a Resting Metabolic Rate (RMR) Assessment

For information about these assessments see the following reports:

- PNOĒ Active Metabolic Rate (AMR) Report
- PNOĒ Resting Metabolic Rate (RMR) Report

Data Collections Technology (2) – Force Frame

Another technology used by ISHP is ForceFrame Strength Testing System. The following video provides an overview of ForeFrame.
This is a sample CSV file generated by a ForceFrame test (Please download)

Data collections Technology (3) – Proteus

ISHP also uses Proteus® Motion's technology to measure strength and power for 100% of human movements. Below is an short video introducing this technology:
This is a sample CSV file generated by a Proteus® test (Please download)

Assessment Task Requirements

1. **Conceptual Database Design:** Using the data modelling and normalisation techniques design a database for ISHP that can store data of ISHP clients, their visits, and their performance data in each performance test (provided as CSV files) in the database. The output of your conceptual design should be presented in an ER diagram using Crows Foot notation. Note that each client may visit ISHP multiple times and in each visit, multiple performance tests using different technology/devices can be performed.
2. **Physical Database Design:** based on the conceptual database design, use MS ACCESS or LIBRE OFFICE BASE to create a database (tables and relationships) and insert the sample data provided in CSV files. For the client table, makeup at least 10 clients (any name, and details you like).
3. **Queries:** Create queries to provide the following information:

3.1 based on the data from the Resting Metabolic (RMR) Test done by the PNOE system, calculate the following metrics:

   - Average Calories/Min - kcal/min
   - Average Fat Calories - kcal/min
   - Average CHO Calories - kcal/min
   - Average Fat percentage - % fat >80

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- Average CHO percentage - % CHO <20
- Average BF 12-18 breaths per minute
- Average VT 0.4-0.6L for females and 0.5-0.7L for males
- Average RER - .7 to 1.0 --- 80% fat
- Average HR 60-100 - 72 Average

3.2 The list of all clients, including their personal details, age, and BMI.
3.3. The count of visits and tests for each client.
3.4. The most frequently performed test
3.5 OPTIONAL TASK (You will receive a bonus mark for performing this task correctly!):
Using the PNOE system data, First should find a 2-minute area out of the 10 minutes where the data looks the most stable - the slope of zero. Then compares the slopes of VO2 to VCO2 to HR to BF (breathing frequency). Within that two minutes block, calculate the metrics in Q3.1.

4. Database security and ethical issues

Write a short note (about 350 words) for the CEO of ISHP and discuss the ethical, and security issues and that need to be considered in storing and maintaining data and make any recommendations that you think are appropriate. Also, propose measures, including specific security tools/features in the selected DBMS (MS Access or Liber Office Base) to protect data against security threats and handle data ethically.

Paragraph Breakdown

*350 word limit not a lot of word to play around with. GET STRAIGHT TO THE POINT!!

* 3 main points that MUST be coved in the 350 word limit

- ✓ State what application has been used to create the physical database applications has been used
- ✓ Explore and explain the ethical, and security issues that can be considered when using the DB application
- ✓ Propose the measures, that include specific security tools/ features in the selected DBMS to protect data against security threats – handle data ethically

5. Video Presentation

o Use Zoom or other apps to record a short video presentation (3-4 minutes). In your presentation turn on your webcam (to include your face in the presentation) and share your screen (to show your database files. Run all queries you've created. Switch to SQL view and explain the commands/functions used in the query and how the query works.

*this sections of the assessment requirements you to pre record a video of the physical database that has been created holding all the required date, and need to explain what the database is explaining and what it holds, run the queries that you have created and the SQL view [coloured writing and codes] – then further explain what each command and function does [when explaining how the queries work use the internet to help explain how each of the commands and functions are linked to the information provided in the physical database]

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Important Notice: The purpose of this recording is to safeguard academic integrity. The assignment will receive a FAIL grade if you do not submit the recorded presentation, or if your presentation does not provide adequate evidence that the submitted materials are original and the result of your own work.

What to Submit

1. A report in Word or pdf format including the ER diagram and the 350-word note about database security and ethics

2. Database file (MS Access or LibreOffice Base file) – this is downloaded straight from the applications

3. Recorded video presentation – the pre recorded presentations of questions 5