**A Data model for The Technical Academy**

**By JOHN IDOGUN**

**2061190**

**TABLE OF CONTENTS**

**INTRODUCTION…………………………………………………….. 1**

**2.0 REQUIREMENT SPECIFICATION …………………………………….. 2**

2*.1 entity relationship diagram………………………………………………………………………..*  **2**

2.2.1 LECTURER ENTITY………………………………………………………………………………………………….. 3

2.2.2 STUDENT ENTITY…………………………………………………………………………………………………… 4

2.2.3 SCHOOL ENTITY………………………………………………………………………………………………………….5

2.2.4 MODULE ENTITY…………………………………………………………………………………………………………6

2.2.5 COURSE ENTITY…………………………………………………………………………………………………………..7

2.2.6 TEACH ENTITY …………………………………………………………………………………………………………...8

**3.0 POPULATING THE DATABASE…………………………………………...9**

3.0.1 SCHOOL ENTITY…………………………………………………………………………………………..10

3.0.2 STUDENT ENTITY………………………………………………………………………………………….11

3.0.3 COURSE ENTITY…………………………………………………………………………………………..12

3.0.4 MODULE ENTITY…………………………………………………………………………………………..13

3.0.5 LECTURER ENTITY………………………………………………………………………………………..14

3.0.6 TEACH ENTITY………………………………………………………………………………………………15

3.1.1 QUERY 1 …………………………………………………………………………………………………….17

3.1.2 QUERY 2 …………………………………………………………………………………………………….18

3.1.3 QUERY 3 …………………………………………………………………………………………………….20

3.1.4 QUERY 4 – COUNT …………………………………………………………………………………….21

3.1.5 QUERY 5 - SUB QUERY……………………………………………………………………………….22

**4.0 Report …………………………………………………………….22**

**5.0 References……………………………………………………….24**

**6.0 Appendix – DDL Script……………………………………….25**

**IMAGE1** Showing the logical diagram of entities in technical academy……………………………………..2

**IMAGE2** Showing Relational diagram of entities in the technical academy……..3

**1.0 INTRODUCTION**

This is my solution for the assignment Technical Academy. In this documentation, I submitted an entity diagram which was created using the Oracle data modeler tool. Thereafter, The relational diagram was engineered from the entity relationship diagram and the data definition language script was generated with the Oracle 124rc version. I created random names and individuals as the data to test the efficiency of this assignment.

**2.0 REQUIREMENT SPECIFICATION**

2*.1 entity relationship diagram* **A picture containing text, screenshot, diagram, plan

Description automatically generated**

Image 1. Showing the logical diagram of entities in the technical academy

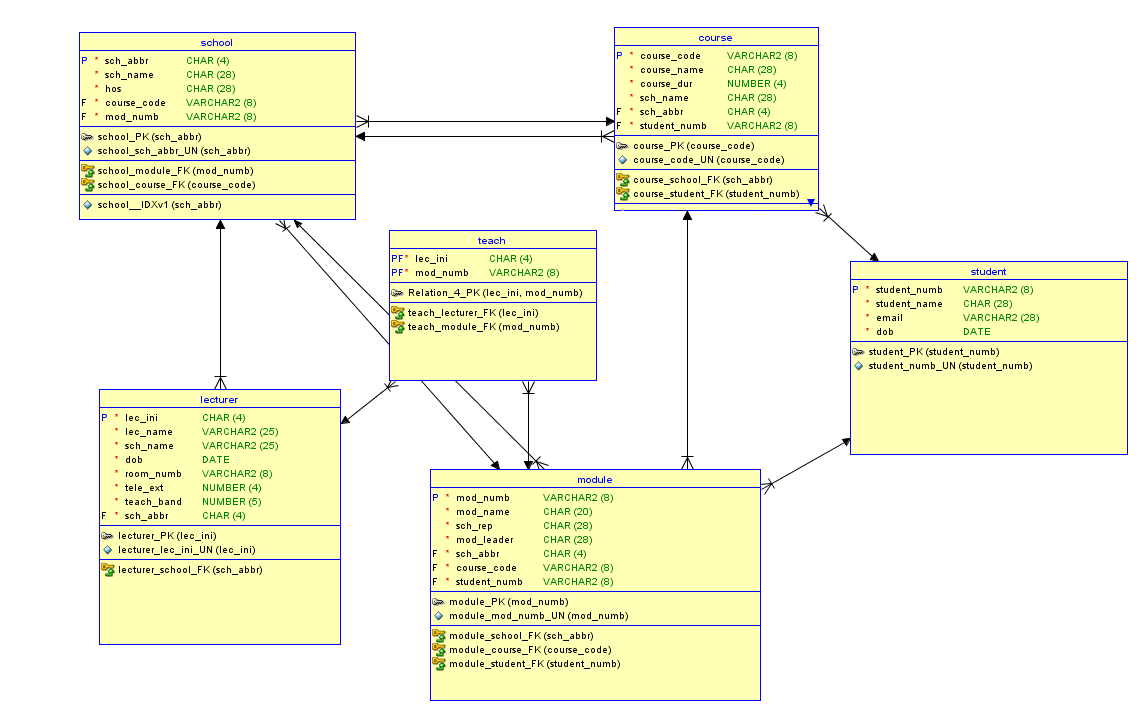
.

Image.2 Showing Relational diagram of entities in the technical academy

**2.2.1 LECTURER ENTITY**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Type | SIZE | Primary Key | Foreign key | Mandatory | Constraint |
| Lec\_ini | CHAR | 4 | Yes | No | Yes | - |
| Lec\_name | CHAR | 25 | no | No | yes | - |
| Room number | VARCHAR | 8 | no | No | yes | - |
| Date\_of\_Birth | DATE | - | no | No | yes | - |
| telephone\_extension | NUMERIC | 6 | no | No | Yes | - |
| Teaching band | NUMERIC | 5 | no | No | no | - |
| Sch\_abbr | Char | 4 | no | yes | Yes | - |

The lecturer entity has six attributes and various data types such as character, variable and character(VARCHAR), NUMBER( numeric), and dates.

a)*Lec\_ini*(Lecturer Initials): The uniqueness of the lecturer-initials sets it apart hence that makes it the primary key. The datatype used for this attribute is the CHAR(character data type) and it also has a size of 4.

b)*Lec\_name*(Lecturer name): The lecturer name is a mandatory element of a lecturer because every lecturer has a name, and since their names are written in alphabets and not numerals, the data type of this attribute is character and the size will be 28.

c)*Sch\_name*(school\_name): For the sake of identity, we group lecturers into schools, and all schools have names, and names are written in alphabets and not numerals except in unique cases, this implies that we would use the character datatype(CHAR) as the datatype and make it mandatory.

d)*Room\_numb*(Room number): Every lecturer has a staff room or office on campus and these offices can be located using a room number, therefore, making room number a mandatory requirement on the lecturer entity. Also, it has a data type of numbers because the room numbers are written in digits. this attribute has a size of 6.

e) *Date\_Of\_Birth*(Date of Birth): The date of birth is of the datatype date. This is a mandatory requirement because it is a very important bio data to have.

f)*Tele\_ext*(Telephone extension): In every room, there are telephone numbers used to get across to lecturers, these numbers are in digits, this is why the datatype is in number and with a size of 5.

g)*Teach\_band*(Teaching\_band): The data type of this attribute is numbers and it has a size of 5.

h)sch\_abbr(school abbreviation): The school abbreviation is a foreign key on this entity because of its relationship with the school and the fact that sch\_abbr is the primary key of the school entity. it has a datatype of char and a size of 4

**2.2.2 STUDENT ENTITY**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Type | SIZE | Primary Key | Foreign key | Mandatory | Constraint |
| STUDENT NAME | CHAR | 28 | no | no | Yes | - |
| STUDENT\_NUMBER | VARCHAR | 8 | Yes | no | yes | - |
| EMAIL | VARCHAR | 28 | no | no | yes | - |
| DATE\_OF\_BIRTH | DATE | - | no | no | yes | - |

The Student entity has four attributes in its table, these attributes are

a)*Student\_name*(*Student name)*: This has a data type of character and a size of 28, it is a mandatory component of the entity relationships

b) *Student\_numb*(*Student number):* This is made the primary key and has a datatype of variable and character (VARCHAR), The size of the student number is 8. which means it can’t be more than 8 digits, by default the primary key is made a mandatory component of the student entity.

c) *Email*: The data type of this attribute is made variable and character because an email can consist of various variables and characters, the email in the student entity is not made a mandatory component.

d) *Date of birth*: Every student has a date of birth that is inputted in the data type called Date, a mandatory component for the student entity.

*Relationships*

The Student entity has several *relationships* with other entities in the technical academy such as a

a) One-to-one relationship with a course*(course)* i.e. one student is enrolled into the school to study a course

b)One- to-many relationships with modules this means that one student has many modules in his/her course

**2.2.3 SCHOOL ENTITY**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Type | SIZE | Primary Key | Foreign Key | Mandatory | Constraint |
| School name | VARCHAR | 28 | no | No | Yes | - |
| School abbreviation | CHAR | 4 | yes | No | yes | - |
| Head of School | CHAR | 28 | no | no | yes | - |
| Course\_code | VARCHAR | 8 | No | yes | Yes | - |
| Module\_number | VARCHAR | 8 | No | yes | Yes | - |

The School entity has five attributes in its table, these are

a) *Sch\_Name* (*School Name):* Every school on earth has a name, which is a mandatory requirement. Also, the school attribute has a data type of variable character (VARCHAR) and a size of 28.

b) *School\_Abbr (School Abbreviation): T*his has a datatype of character (CHAR), The size of the character is 4. which means it can’t be more than 4 characters, this Is the primary key of the school entity because of its uniqueness.

c) *Hos (Head Of School)*: This has a data type of variable character and a size of 28, it is a mandatory component of the entity by default.

d) *Course\_Code(course code)*: This appeared in the school entity as a result of its relationship with the course entity, it has a data type of VARCHAR and a size of 8, it is a foreign key and primary key of the course entity

e) *Mod\_numb*(*Module number)*: The module number appears as a foreign key in this school entity because of its relationship with the school, it is the primary key of the module entity.

*Relationships*

The school entity has several relationships with other entities in the technical academy school such as a

1. One-to-many relationship with Lecturer*(Lecturer)* This means that one school employs many lecturers to teach their courses.
2. One-to-one relationship with Lecturer*(Lecturer)* this means one of the lecturers becomes head of the school.
3. One to- many with course(*Course*) this means that a school has many courses
4. One to many with modules(modules) this means that a school owns many courses that owns many modules

**2.2.4 MODULE ENTITY**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Type | SIZE | Primary Key | Foreign key | Mandatory | Constraint |
| MOD\_Name | VARCHAR | 20 | no | No | Yes | - |
| MOD\_number | VARCHAR | 8 | Yes | No | yes | - |
| Mod\_leader | CHAR | 28 | No | No | yes | - |
| Sch\_rep | CHAR | 28 | NO | no | yes | - |
| Sch\_abbr | CHAR | 4 | No | Yes | Yes | - |
| Course\_code | VARCHAR | 8 | No | Yes | Yes | - |
| Student\_numb | VARCHAR | 8 | No | Yes | No | - |

The module entity has Seven attributes in its table, these are

a)*Mod\_name*(*Module Name):* This has a data type of variable character and a size of twenty, it is a mandatory component of the entity, but it is not the primary key

b) *Mod\_numb( Module number) :* this is the primary key of this entity and it has a datatype of variable and character (VARCHAR) , The size of the VARCHAR is 8. which means it can’t be more than pass the 8 character, by default the primary key is made a mandatory component.

c) *Sch\_rep(school rep)*: This is an attribute that has a data type of character and size of 28.

d) *Mod\_leader*(Module leader): This attribute houses the mod\_leader it is the module leader that’s the leader of several lecturers, it has a data type of character and size of 28

e)*Sch\_Abbr*(school abbreviation): The school abbreviation is a foreign key on this entity because of its relationship with the school and the fact that sch\_abbr is the primary key of the school entity. it has a datatype of char and a size of 4.

f)Course\_Code(course code): The course\_code attribute is a foreign key on this entity because of the relationship module has with the school and because it is the primary key of course entity. it has a datatype of varchar (variable character) because it inputs data that has characters and numbers. the size of 8 is allocated to this attribute.

g)Student\_Numb(student\_number): The student\_numb attribute is a foreign key on this entity because of the relationship, module entity has with student entity and because it is the primary key of student entity. it has a datatype of varchar (variable character) because it inputs data that has characters and numbers. the size of 8 is allocated to this attribute.

*Relationships*

The module entity has several relationships with other entities in the technical academy school such as a

1. many-to-many relationship with lecturers this means that many lecturers teach many modules and many modules are taught by many lecturers .
2. one-to-many with Student(*Student*) This means that a student can enrol into many modules
3. many-to-one with school(*school*) this means that a school owns many modules.
4. many-to-one with course(*Course*) This means that many modules makes up a course

**2.2.5 COURSE ENTITY**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Type | SIZE | Primary Key | Foreign Key | Mandatory | Constraint |
| Course Name | CHAR | 28 | no | No | Yes | - |
| Course\_code | VARCHAR | 8 | Yes | No | Yes | - |
| Course\_dur | NUMBER | 4 | No | No | Yes | - |
| Sch\_name | CHAR | 28 | No | No | Yes | - |
| Sch\_abbr | CHAR | 4 | No | Yes | Yes | - |
| Student\_numb | VARCHAR | 8 | No | Yes | Yes | - |

The course entity has Six attributes in its table, these are

a)*Course Name(Course Name)*: This has a data type of character and a size of 28, it is a mandatory component of the entity because it is mandatory that the course name of the student be named, although it is not the primary key.

b) *Course\_code(Course code):* This is the primary key and has a datatype of variable and character (VARCHAR) , The size of the variable and character is 8. which means it can’t be more than 8 characters, by default the primary key is made a mandatory component.

c) Course\_dur(course\_duration): this has a data type of numeric and size of 4.This is inputed because every course has its duration

d) *Sch\_name*(school name): All courses are taught in a school so therefore the sch\_name is a necessary and mandatory attribute to be inputed on a course entity, it has a data type of character and size of 28.

e) S*ch\_abbr*(school abbreviation*):* As a result of the relationship school has with course, the primary key appears as a foreign key in this entity, it has a datatype of char and size of 4.

f)S*tudent\_numb*(student\_number): The student\_numb attribute is a foreign key on this entity because of the relationship, the course entity has with the student entity and because it is the primary key of student entity. it has a datatype of varchar (variable character) because it inputs data with characters and numbers. the size of 8 is allocated to this attribute.

*Relationships*

The course entity has several relationships with other entities in the technical academy school such as a

1. one-to-many relationship with the school*(school)* this means that a school teaches many courses .
2. One- to- many relationship with modules(module) this means that many modules make up a course.
3. one- to- one with student(student) this means that one student is enrolled to study one course at a time .

**2.2.6 TEACH ENTITY**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attibute | Type | SIZE | PRIMARY KEY | FOREIGN KEy | Mandatory | Constraint |
| Lec\_ini | CHAR | 4 | Yes | yes | Yes | - |
| Mod\_numb | VARCHAR | 8 | Yes | Yes | Yes | - |

N.B- The teach entity was created by itself, I had to rename it

Attribute

a)*Lec\_ini(Lecturer initials):* This appears as a foreign key and a primary key due to its relationship with the lecturer entity,The lecturer initial has a data type of character, a size of 4, and it is the primary key.

b)*Mod\_numb* (*module number*): This is the primary key of the module entity and it is also a foreign key of teach entity.

**3.0 POPULATING THE DATABASE**

I created some data from fiction in other to populate the database and see how functional it was, the data created is in no way real, these names are created from the figment of my imagination.

**3.0.1 SCHOOL ENTITY**

SQL> **SELECT \* FROM SCHOOL;**

**SCH\_ABBR SCH\_NAME HOS COURSE\_CODE MOD\_NUMB**

---- ---------------------------- ---------------------------- -------- --------

HUMA HUMANITIES NAROV KVASA HAN111 HMA101

MGTS MANAGEMENT KULLER SORIANO MAN211 GAN19

EDUC EDUCATION BRUNO ASPER EDUC444 ADUE12

NURS NURSING GLEN CATANG NURS212 LIFE122

LLB LAW JANET SOLDADO LLM111 LAWC01

SOA ART FINN CONNOLLY THAR211 RTE111

MCOM MATHEMATICS AND COMPUTER SVEN BRAN CSC101 DTM111

7 rows selected.

**3.0.2 STUDENT ENTITY**

SQL> SELECT \* FROM STUDENT;

STUDENT\_NO STUDENT\_NAME EMAIL DOB

-------- ---------------------------- ---------------------------- ---------

11123456 Tina Turner tinaturner@tac.ac.uk 23-JUN-93

11154656 Parry Barney parrbarney@tac.ac.uk 30-JUL-98

11156468 Corry Unde corryunde@tac.ac.uk 03-AUG-99

11145576 Callum Brooklyn callum2bad@tac.ac.uk 23-JUN-94

11148936 Carla Bameda bamedadang@tac.ac.uk 02-JUN-93

11100877 Teju Badejo tturner@tac.ac.uk 23-JUN-93

11134244 Iyke Babatunde babstunde@tac.ac.uk 24-AUG-00

11169892 Success Iwuoha sucabarney@tac.ac.uk 30-MAR-99

11256465 Pat Gibson gibbopat@tac.ac.uk 03-OCT-99

11127576 Patrick Enamela patenal@tac.ac.uk 30-SEP-04

12232424 Perfect Cajeda perfgod@tac.ac.uk 02-JUN-01

11456448 Sally Arena sallyarena@tac.ac.uk 04-JUN-01

11124642 Gershom Bask bgershom@tac.ac.uk 03-AUG-00

11073876 Carl Harry harrycal@tac.ac.uk 29-JUL-00

12637867 Carla Harris hacarla@tac.ac.uk 28-JAN-02

11

11984033 Carlanda Paris cparis@tac.ac.uk 08-JUL-00

11148939 Acton Brendan bacton@tac.ac.uk 08-SEP-00

12345758 Timothy Fales falestim@tac.ac.uk 29-JUN-99

30001354 Talitha Cumi talithacumi@tac.ac.uk 21-JUN-95

30001355 Manasseh Githa gmanasseh@tac.ac.uk 22-JAN-93

30001356 Gideion Orkani gorkani@tac.ac.uk 02-SEP-94

30001357 Sani Babalola babasani@tac.ac.uk 22-JUL-92

30001358 Tanga Brima brimatanga@tac.ac.uk 23-MAY-95

**3.0.3 COURSE ENTITY**

SQL> SELECT \* FROM COURSE;

**COURSE\_CODE COURSE\_NAME COURSE\_DUR SCH\_NAME SCH\_ABBR STUDENT\_NO**

---- --------

AEB101 ANIMAL SCIENCE 4 BIOSCIENCE BIOS 30001356

PBB101 BOTANY 4 BIOSCIENCE BIOS 30001353

ANA111 ANATOMY 4 BIOSCIENCE BIOS 30001352

OENG420 OIL AND GAS ENGINEERING 3 ENGINEERING ENGR 11154656

CENG120 COMPUTER ENGINEERING 3 ENGINEERING ENGR 11156468

MENG101 MECHANICAL ENGINEERING 3 ENGINEERING ENGR 11145576

12

PENG101 PETROLEUM ENGINEERING 3 ENGINEERING ENGR 11148936

SENG101 SPACE ENGINEERING 3 ENGINEERING ENGR 11100877

CVEN101 CIVIL ENGINEERING 3 ENGINEERING ENGR 11073876

GLY111 GEOLOGY 3 PHYSICAL SCIENCE PHYS 30001355

CSC111 COMPUTER SCIENCE 4 PHYSICAL SCIENCE PHYS 30001350

PHYS111 PHYSICS 3 PHYSICAL SCIENCE PHYS 30001351

PHE111 HEALTH EDUCATION 4 EDUCATION EDUC 30001357

ADE111 ADULT EDUCATION 3 EDUCATION EDUC 30001358

CHM111 CHEMISTRY 4 PHYSICAL SCIENCE PHYS 30001359

15 rows selected.

**3.0.4 MODULE ENTITY**

SQL> SELECT \* FROM MODULE;

MOD\_NUMB MOD\_NAME SCH\_REP MOD\_LEADER SCH\_ COURSE\_C STUDENT\_NUMB

---------------------------- ---- -------- --------

ADM111 ADVANCED MECHANICS SANBA CRUSOE PASCAL SADIQ ENGR AME420 11154656

13

DATA541 BASIC DATA SCIENCE SVEN BRAN SADHIT KHAN MCOM CSC111 30001401

SWD210 SOFTWARE DEVELOPMENT SVEN BRAN DERRECK UMUANA MCOM CSC111 30001402

ML111 MACHINE LEARNING SVEN BRAN ZENDAYA ADLER MCOM CSC111 30001403

SWD211 SOFTWARE DESIGN SVEN BRAN CARL ERROL MCOM CSC111 30001404

AI111 ARTICIALINTELLIGENCE SVEN BRAN LILA CASPSER MCOM CSC111 30001406

6 rows selected.

**3.0.5 LECTURER ENTITY**

SQL> SELECT\* FROM LECTURER;

LEC\_INI LEC\_NAME SCH\_NAME DOB ROOM\_NUM TELE\_EXT TEACH\_BAND SCH\_ABBR

-------- -- ---------- ----

DEUM DERRECK UMUANA MATHEMATICS AND COMPUTER 09-JUN-78 00000003 6286 200 MCOM

ZEAD ZENDAYA ADLER MATHEMATICS AND COMPUTER 11-OCT-81 00000004 6287 100 MCOM

CAER CARL ERROL MATHEMATICS AND COMPUTER 15-JAN-76 00000005 6288 300 MCOM

GAUS GAIUS USMAN MANAGEMENT 06-MAY-80 00000007 6289 100 MANA

14

PHUC PHILLIP UCHECHI MANAGEMENT 14-OCT-78 00000019 6290 200 MANA

DAMA DAMIAN MARSHALL MANAGEMENT 04-SEP-77 00000020 6291 300 MANA

CRIA CRYSTAL IAN MANAGEMENT 04-SEP-88 00000021 6292 300 MANA

BRAT BRIAN ATILA BIOSCIENCE 16-OCT-76 00000022 6293 100 BIOS

CHAN CHARITY ANNDERSON BIOSCIENCE 14-DEC-70 00000023 6294 300 BIOS

SAAC SANJANA ACURA BIOSCIENCE 11-NOV-89 00000024 6295 100 BIOS

ADDA ADRIAN DAMIAN BIOSCIENCE 27-MAY-78 00000025 6296 200 BIOS

SLOM SLAVIC OMRAN ENGINEERING 04-NOV-75 00000026 6297 100 ENGR

SACR SANBA CRUSOE ENGINEERING 09-SEP-80 00000027 6298 200 ENGR

PASA PASCAL SADIQ ENGINEERING 21-FEB-80 00000028 6299 100 ENGR

SVBR SVEN BRAN MATHEMATICS AND COMPUTER 26-NOV-75 00000041 6301 400 MCOM

KEAD KELLER ADDSER BIOSCIENCE 20-JAN-73 00000029 6300 400 BIOS

16 rows selected.

**3.0.6 TEACH ENTITY**

SQL> SELECT \* FROM TEACH;

LEC\_ MOD\_NUMB

15

---- --------

CAER SWD211

DEUM SWD210

LICA AI111

PASA ADM111

SAKH DATA541

ZEAD ML111

16

**QUERIES**

**3.1.1 QUERY 1**

SQL> SELECT LEC\_INI, LEC\_NAME, TEACH\_BAND FROM LECTURER

2 WHERE TEACH\_BAND > 100;

LEC\_ LEC\_NAME TEACH\_BAND

---- ------------------------- ----------

DEUM DERRECK UMUANA 200

CAER CARL ERROL 300

PHUC PHILLIP UCHECHI 200

DAMA DAMIAN MARSHALL 300

CRIA CRYSTAL IAN 300

CHAN CHARITY ANNDERSON 300

ADDA ADRIAN DAMIAN 200

SACR SANBA CRUSOE 200

SVBR SVEN BRAN 400

KEAD KELLER ADDSER 400

17

10 rows selected.

**3.1.2 QUERY 2**

SQL> SELECT LEC\_INI, LEC\_NAME, TEACH\_BAND FROM LECTURER

2 WHERE TEACH\_BAND = 100;

LEC\_ LEC\_NAME TEACH\_BAND

---- ------------------------- ----------

ZEAD ZENDAYA ADLER 100

GAUS GAIUS USMAN 100

BRAT BRIAN ATILA 100

SAAC SANJANA ACURA 100

SLOM SLAVIC OMRAN 100

PASA PASCAL SADIQ 100

6 rows selected.

18

**3.1.3 QUERY 3**

SQL> SELECT LEC\_INI,LEC\_NAME

2 FROM LECTURER

3 WHERE LEC\_INI NOT IN (SELECT LEC\_INI FROM TEACH);

LEC\_ LEC\_NAME

ADDA ADRIAN DAMIAN

BRAT BRIAN ATILA

CHAN CHARITY ANNDERSON

CRIA CRYSTAL IAN

DAMA DAMIAN MARSHALL

GAUS GAIUS USMAN

KEAD KELLER ADDSER

PHUC PHILLIP UCHECHI

SAAC SANJANA ACURA

SACR SANBA CRUSOE

SLOM SLAVIC OMRAN

SVBR SVEN BRAN

19

12 rows selected.

**3.1.4 QUERY 4 – COUNT**

SQL> select count(\*)

2 from COURSE

3 WHERE SCH\_NAME ='ENGINEERING';

COUNT(\*)

----------

6

20

**3.1.5 QUERY 5 - SUB QUERY**

SQL> SELECT LEC\_INI, LEC\_NAME, TEACH\_BAND FROM LECTURER

2 WHERE TEACH\_BAND <= (SELECT MIN(TEACH\_BAND)FROM LECTURER);

LEC\_ LEC\_NAME TEACH\_BAND

---- ------------------------- ----------

ZEAD ZENDAYA ADLER 100

GAUS GAIUS USMAN 100

BRAT BRIAN ATILA 100

SAAC SANJANA ACURA 100

SLOM SLAVIC OMRAN 100

PASA PASCAL SADIQ 100

6 rows selected.

21

**4.0 Report**

**HOW DATA GOVERNANCE CAN EFFECTIVELY BE UTILIZED IN A UNIVERSITY ENVIRONMENT**

**(CASE STUDY : TECHNICAL ACADEMY)**

***What is Data Governance***

Data governance can be defined as a companywide framework for assigning decision-related rights and duties in order to be able to adequately handle data as a company asset (Otto, [2011b](https://www.tandfonline.com/doi/full/10.1080/12460125.2016.1187397)).

**N.B** The Company can refer to an organization, firm, airport, school etc.

The purpose of data governance is solely to have control over the management of data, it also aims to increase the value of data, ensure the security of data in any system e.g. a School, Airport, Organization, Firm etc. and minimize data-related cost and risk.

According to (Cheong,Chang, 2007) Data governance can also help to check the integrity of the data and the best way to manage data effectively and successfully is through the adoption of a data governance structure and framework.The Technical Academy is an educational institution so therefore there will be high usage of data for academic related matters. Constraints should be effectively placed on the usage of data, regulations and censoring

22

In situations where there is a breach of the law the governing body ensures that its policies are instilled .

The goals of data governance may be defined at all levels of the academy.

From guest to staff to student .

And the awareness of these goals helps the users to effectively use it without compromise

The issues that will be addressed in the technical academy will be this and not limited to this

* Increasing consistency and confidence in [decision making](https://en.wikipedia.org/wiki/Decision_making)
* Improving [data security](https://en.wikipedia.org/wiki/Information_security) amongst student,staff and guests
* also defining and verifying the requirements for data distribution policies
* Ensuring accountability for the quality of information dispensed
* Increase the effectiveness of staff and students
* Establish process performance baselines to enable improvement efforts

23

**5.0 References**

1) Vijay, K. and Carol,V.B (2010) *Communications of the ACM* ,Volume53,Issue 1 pp 148-152

2) Cheong,L .K and Chang, V(2007) *The Need For Data Governance: A Case Study.* 18th Australasian Conference on Information System, Dec 5-7 2007 pp 1

3) Otto, B. (2011b). *Organizing data governance: Findings from the telecommunications industry and consequences for large service providers*. *Communications of the AIS,* *29*, 45–66.

4) Weill, P., & Ross, J. W. (2004). *IT governance: How top performers manage IT decision rights for superior results*. Boston, MA: Harvard Business School Publishing

5)Nassa, S. and Frommholz, I. (2022). *7CI006 Portfolio 2021-2022.* [online] canvas.wlv.ac.uk. Available at: https://canvas.wlv.ac.uk/courses/30704/files/4141668. Wlv.ac.uk. (2018). University of Wolverhampton - University of Wolverhampton. [online] Available at: https://www.wlv.ac.uk/ [Accessed 5 Jun. 2023].

24

**6.0 Appendix – DDL Script**

-- Generated by Oracle SQL Developer Data Modeler 21.2.0.183.1957

-- at: 2023-05-31 16:00:13 WAT

-- site: Oracle Database 12cR2

-- type: Oracle Database 12cR2

-- predefined type, no DDL - MDSYS.SDO\_GEOMETRY

-- predefined type, no DDL - XMLTYPE

CREATE TABLE course (

course\_code VARCHAR2(8) NOT NULL,

course\_name CHAR(28) NOT NULL,

25

course\_dur NUMBER(4) NOT NULL,

sch\_name CHAR(28) NOT NULL,

sch\_abbr CHAR(4) NOT NULL,

student\_numb VARCHAR2(8) NOT NULL);

CREATE UNIQUE INDEX course\_\_idx ON

course (

course\_code

DESC );

ALTER TABLE course ADD CONSTRAINT course\_pk PRIMARY KEY ( course\_code );

ALTER TABLE course ADD CONSTRAINT course\_code\_un UNIQUE ( course\_code );

CREATE TABLE lecturer (

lec\_ini CHAR(4) NOT NULL,

lec\_name CHAR(25) NOT NULL,

sch\_name CHAR(25) NOT NULL,

dob DATE NOT NULL,

26

room\_numb VARCHAR2(8) NOT NULL,

tele\_ext NUMBER(4) NOT NULL,

teach\_band NUMBER(5) NOT NULL,

sch\_abbr CHAR(4) NOT NULL

);

ALTER TABLE lecturer ADD CONSTRAINT lecturer\_pk PRIMARY KEY ( lec\_ini );

ALTER TABLE lecturer ADD CONSTRAINT lecturer\_lec\_ini\_un UNIQUE ( lec\_ini );

CREATE TABLE module (

mod\_numb VARCHAR2(8) NOT NULL,

mod\_name CHAR(20) NOT NULL,

sch\_rep CHAR(28) NOT NULL,

mod\_leader CHAR(28) NOT NULL,

sch\_abbr CHAR(4) NOT NULL,

course\_code VARCHAR2(8) NOT NULL,

student\_numb VARCHAR2(8) NOT NULL

);

27

ALTER TABLE module ADD CONSTRAINT module\_pk PRIMARY KEY ( mod\_numb );

ALTER TABLE module ADD CONSTRAINT module\_mod\_numb\_un UNIQUE ( mod\_numb );

CREATE TABLE school (

sch\_abbr CHAR(4) NOT NULL,

sch\_name CHAR(28) NOT NULL,

hos CHAR(28) NOT NULL,

course\_code VARCHAR2(8) NOT NULL,

mod\_numb VARCHAR2(8) NOT NULL

);

CREATE UNIQUE INDEX school\_\_idxv1 ON

school (

sch\_abbr

ASC );

28

ALTER TABLE school ADD CONSTRAINT school\_pk PRIMARY KEY ( sch\_abbr );

ALTER TABLE school ADD CONSTRAINT school\_sch\_abbr\_un UNIQUE ( sch\_abbr );

CREATE TABLE student (

student\_numb VARCHAR2(8) NOT NULL,

student\_name CHAR(28) NOT NULL,

email VARCHAR2(28) NOT NULL,

dob DATE NOT NULL

);

ALTER TABLE student ADD CONSTRAINT student\_pk PRIMARY KEY ( student\_numb );

ALTER TABLE student ADD CONSTRAINT student\_numb\_un UNIQUE ( student\_numb );

CREATE TABLE teach (

lec\_ini CHAR(4) NOT NULL,

mod\_numb VARCHAR2(8) NOT NULL

29

);

ALTER TABLE teach ADD CONSTRAINT relation\_4\_pk PRIMARY KEY ( lec\_ini,

mod\_numb );

ALTER TABLE course

ADD CONSTRAINT course\_school\_fk FOREIGN KEY ( sch\_abbr )

REFERENCES school ( sch\_abbr );

ALTER TABLE course

ADD CONSTRAINT course\_student\_fk FOREIGN KEY ( student\_numb )

REFERENCES student ( student\_numb );

ALTER TABLE lecturer

ADD CONSTRAINT lecturer\_school\_fk FOREIGN KEY ( sch\_abbr )

REFERENCES school ( sch\_abbr );

ALTER TABLE module

ADD CONSTRAINT module\_course\_fk FOREIGN KEY ( course\_code )

REFERENCES course ( course\_code );

30

ALTER TABLE module

ADD CONSTRAINT module\_school\_fk FOREIGN KEY ( sch\_abbr )

REFERENCES school ( sch\_abbr );

ALTER TABLE module

ADD CONSTRAINT module\_student\_fk FOREIGN KEY ( student\_numb )

REFERENCES student ( student\_numb );

ALTER TABLE school

ADD CONSTRAINT school\_course\_fk FOREIGN KEY ( course\_code )

REFERENCES course ( course\_code );

ALTER TABLE school

ADD CONSTRAINT school\_module\_fk FOREIGN KEY ( mod\_numb )

REFERENCES module ( mod\_numb );

ALTER TABLE teach

ADD CONSTRAINT teach\_lecturer\_fk FOREIGN KEY ( lec\_ini )

REFERENCES lecturer ( lec\_ini );

31

ALTER TABLE teach

ADD CONSTRAINT teach\_module\_fk FOREIGN KEY ( mod\_numb )

REFERENCES module ( mod\_numb );

-- Oracle SQL Developer Data Modeler Summary Report:

--

-- CREATE TABLE 6

-- CREATE INDEX 2

-- ALTER TABLE 21

-- CREATE VIEW 0

-- ALTER VIEW 0

-- CREATE PACKAGE 0

-- CREATE PACKAGE BODY 0

-- CREATE PROCEDURE 0

-- CREATE FUNCTION 0

-- CREATE TRIGGER 0

32

-- ALTER TRIGGER 0

-- CREATE COLLECTION TYPE 0

-- CREATE STRUCTURED TYPE 0

-- CREATE STRUCTURED TYPE BODY 0

-- CREATE CLUSTER 0

-- CREATE CONTEXT 0

-- CREATE DATABASE 0

-- CREATE DIMENSION 0

-- CREATE DIRECTORY 0

-- CREATE DISK GROUP 0

-- CREATE ROLE 0

-- CREATE ROLLBACK SEGMENT 0

-- CREATE SEQUENCE 0

-- CREATE MATERIALIZED VIEW 0

-- CREATE MATERIALIZED VIEW LOG 0

-- CREATE SYNONYM 0

-- CREATE TABLESPACE 0

-- CREATE USER 0

--

33

-- DROP TABLESPACE 0

-- DROP DATABASE 0

--

-- REDACTION POLICY 0

--

-- ORDS DROP SCHEMA 0

-- ORDS ENABLE SCHEMA 0

-- ORDS ENABLE OBJECT 0

--

-- ERRORS 0

-- WARNINGS 0

34