

Terps Wellness Center

Group No. 5
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Background

- A database for UMD Administration, to store and verify if student health details are in line with protocols.
- Working to send kits to students before arrival, process the kits, and report the test results to the Terps Wellness Center.
- Provide diagnostics for students who report exposure or illness symptoms.
- Diagnostics in these cases may include other kinds of tests such as blood analysis, strep, and any number of other doctor-prescribed tests.
- Offered to provide distribution of flu vaccines and COVID vaccines.
- Terps Wellness Center issues the tests and takes full responsibility for making payment.
- Data Source:
 1. For UHC Employees: <https://health.umd.edu/about-us/meet-our-staff>.
 2. For Student: Survey of fellow classmates.



INTRODUCTION

Mission Statement

- Maintain a robust and accurate database, including all the information of Students, UHC Employees.
- Storing vaccinations and medical tests, and the corresponding payment details for the same.

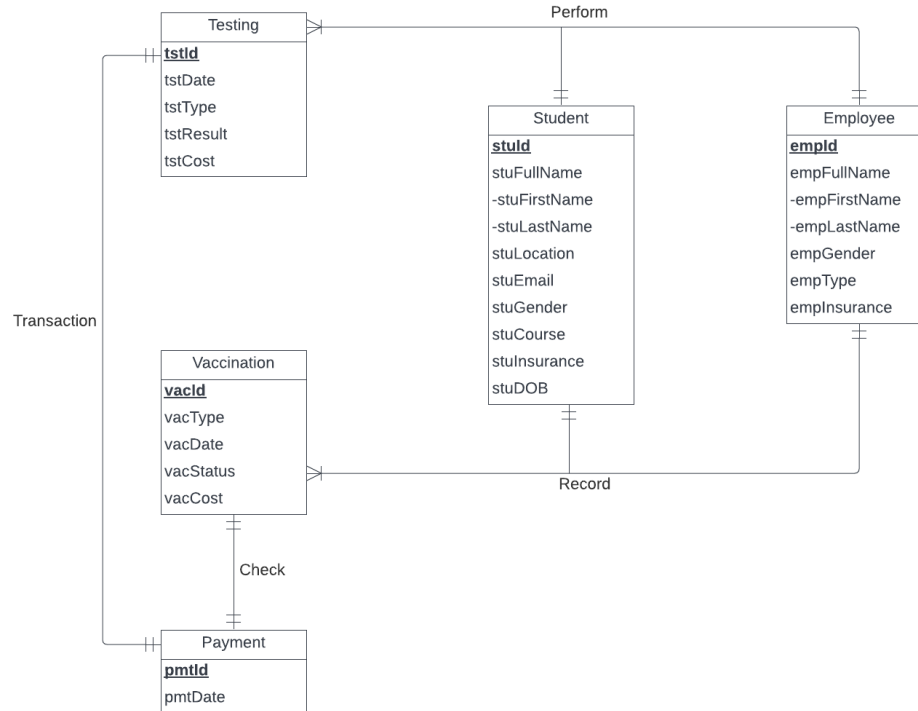


INTRODUCTION

Mission Objective

- Details of students who have taken Covid-19 vaccines and tested negative in COVID test.
- Details of all the students who have taken COVID-19 vaccine.
- Employee ID(s) of employees who have administered most number of vaccines.
- Types of vaccines administered and their quantity in decreasing order.
- Total amount billed owing to tests and vaccinations.
- Details of students who are cleared to enter the university.

Conceptual Database Design



Relational Schema

Employee (**empld**, empFirstName, empLastName, empGender, empType, empInsurance)

Student (**stuld**, stuFirstName, stuLastName, stuLocation, stuEmail, stuGender, stuCourse, stuInsurance, stuDOB)

Vaccination (**vacld**, vacType, vacDate, vacStatus, vacCost)

Testing (**tstld**, tstDate, tstType, tstResult, tstCost)

Payment (**pmtld**, pmtDate, *vacld*, *tstld*)

Perform (**tstld**, *stuld*, *empld*)

Record (**vacld**, *stuld*, *empld*)

Database Design

Create 'Employee' Table:

```
CREATE TABLE [Wellness.Employee] (  
  empId CHAR(10) NOT NULL,  
  empFirstName VARCHAR(20),  
  empLastName VARCHAR(20),  
  empGender CHAR(1),  
  empType VARCHAR(20),  
  empInsurance VARCHAR(20),  
  CONSTRAINT pk_Employee_empId PRIMARY KEY (empId))
```

Database Design

Create 'Student' Table:

```
CREATE TABLE [Wellness.Student] (  
  stuId CHAR(10) NOT NULL,  
  stuFirstName VARCHAR(20),  
  stuLastName VARCHAR(20),  
  stuLocation VARCHAR(30),  
  stuEmail VARCHAR(50),  
  stuGender CHAR(1),  
  stuCourse VARCHAR(30),  
  stuInsurance VARCHAR(20),  
  stuDOB DATE,  
  CONSTRAINT pk_Student_stuId PRIMARY KEY (stuId))
```


Database Design

Create 'Vaccination' Table:

```
CREATE TABLE [Wellness.Vaccination] (  
  vacId CHAR(10) NOT NULL,  
  vacType VARCHAR(30),  
  vacDate DATE,  
  vacStatus VARCHAR(30),  
  vacCost NUMERIC,  
  CONSTRAINT pk_Vaccination_vacId PRIMARY KEY (vacId) )
```

Database Design

Create 'Testing' Table:

```
CREATE TABLE [Wellness.Testing] (  
  tstId CHAR(10) NOT NULL,  
  tstDate DATE,  
  tstType VARCHAR(30),  
  tstResult VARCHAR(20),  
  tstCost NUMERIC,  
  CONSTRAINT pk_Testing_tstId PRIMARY KEY (tstId))
```

Database Design

Create 'Payment' Table:

```
CREATE TABLE [Wellness.Payment] (  
  pmtId CHAR(10)NOT NULL ,  
  pmtDate DATE,  
  vacId CHAR(10),  
  tstId CHAR(10),  
  CONSTRAINT pk_Payment_pmtId PRIMARY KEY (pmtId),  
  CONSTRAINT fk_Payment_vacId FOREIGN KEY (vacId)  
    REFERENCES [Wellness.Vaccination] (vacId)  
    ON DELETE NO ACTION ON UPDATE CASCADE,  
  CONSTRAINT fk_Payment_tstId FOREIGN KEY (tstId)  
    REFERENCES [Wellness.Testing] (tstId)  
    ON DELETE NO ACTION ON UPDATE CASCADE )
```

Database Design

Create 'Perform' Table:

```
CREATE TABLE [Wellness.Perform] (  
  tstId CHAR(10) NOT NULL,  
  stuld CHAR(10),  
  empId CHAR(10),  
  CONSTRAINT pk_Perform_tstId PRIMARY KEY (tstId),  
  CONSTRAINT fk_Perform_tstId FOREIGN KEY (tstId)  
    REFERENCES [Wellness.Testing] (tstId)  
    ON DELETE CASCADE ON UPDATE CASCADE,  
  CONSTRAINT fk_Perform_stuld FOREIGN KEY (stuld)  
    REFERENCES [Wellness.Student] (stuld)  
    ON DELETE NO ACTION ON UPDATE NO ACTION,  
  CONSTRAINT fk_Perform_empId FOREIGN KEY (empId)  
    REFERENCES [Wellness.Employee] (empId)  
    ON DELETE NO ACTION ON UPDATE NO ACTION )
```

Database Design

Create 'Record' Table:

```
CREATE TABLE [Wellness.Record] (  
    vacId CHAR(10) NOT NULL,  
    stuId CHAR(10) NOT NULL,  
    empId CHAR(10),  
    CONSTRAINT pk_Record_vacId PRIMARY KEY (vacId),  
    CONSTRAINT fk_Record_vacId FOREIGN KEY (vacId)  
        REFERENCES [Wellness.Vaccination] (vacId)  
        ON DELETE CASCADE ON UPDATE CASCADE,  
    CONSTRAINT fk_Record_stuId FOREIGN KEY (stuId)  
        REFERENCES [Wellness.Student] (stuId)  
        ON DELETE NO ACTION ON UPDATE NO ACTION,  
    CONSTRAINT fk_Record_empId FOREIGN KEY (empId)  
        REFERENCES [Wellness.Employee] (empId)  
        ON DELETE NO ACTION ON UPDATE NO ACTION )
```

Business Transactions

Transaction Number 1:

What are the details of students who have taken Covid-19 vaccines and tested negative in COVID test?

```
SELECT DISTINCT s.stuld AS 'Student ID', CONCAT(s.stuFirstName, ' ', s.stuLastName) AS 'Student Name', s.stuGender  
AS 'Gender', s.stuEmail AS 'E-mail ID', s.stuCourse AS 'Course', s.stuInsurance AS 'Insurance Type', s.stuLocation AS  
'Location', s.stuDOB AS 'Date of Birth'
```

```
FROM [Wellness.Record] r, [Wellness.Perform] p, [Wellness.Student] s, [Wellness.Vaccination] v, [Wellness.Testing] t
```

```
WHERE (r.vaclId = v.vaclId) AND (r.stuld = s.stuld) AND (v.vacType = 'Covid-19 Vaccine')  
      AND (p.tstId = t.tstId) AND (p.stuld = s.stuld) AND (t.tstType = 'Covid Test')  
      AND (t.tstResult = 'Negative')
```

Result 1:

Student ID	Student Name	Gender	E-mail ID	Course	Insurance Type	Location	Date of Birth
S117444377	Deep Singh	M	pds11@umd.edu	In Person	School	Off Campus	1997-10-30
S119365724	Nishank Shah	M	nishank7@umd.edu	In Person	School	Off Campus	1998-12-15

Business Transactions

Transaction Number 2:

What are the names and Employee ID(s) of employee(s) who have administered most number of vaccines?

```
SELECT DISTINCT s.stuld AS 'Student ID', CONCAT(s.stuFirstName, ' ', s.stuLastName) AS 'Student Name', s.stuGender  
AS 'Gender', s.stuEmail AS 'E-mail ID', s.stuCourse AS 'Course', s.stuInsurance AS 'Insurance Type', s.stuLocation AS  
'Location', s.stuDOB AS 'Date of Birth' FROM [Wellness.Record] r, [Wellness.Student] s, [Wellness.Vaccination] v
```

```
WHERE (r.vacId = v.vacId) AND (r.stuld = s.stuld) AND (v.vacType = 'Covid-19 Vaccine')
```

Result 2:

Employee ID	Employee Name	Number of Vaccinations Administered
E202010020	Charon Wallace	5

Business Transactions

Transaction Number 3:

What are the details of all the students who have taken COVID-19 vaccine?

```
SELECT r1.empId AS 'Employee ID', CONCAT(e.empFirstName, ' ', e.empLastName) AS 'Employee Name',  
COUNT(r1.empId) AS 'Number of Vaccinations Administered' FROM [Wellness.Record] r1, [Wellness.Employee] e  
WHERE e.empId = r1.empId GROUP BY r1.empId, e.empFirstName, e.empLastName HAVING COUNT(r1.empId) = (  
SELECT TOP 1 COUNT(r1.empId) FROM [Wellness.Record] r1 GROUP BY r1.empId ORDER BY COUNT(r1.empId) DESC)
```

Result 3:

Student ID	Student Name	Gender	E-mail ID	Course	Insurance Type	Location	Date of Birth
S117444377	Deep Singh	M	pds11@umd.edu	In Person	School	Off Campus	1997-10-30
S118602394	Shivani Mehta	F	shiv9796@umd.edu	Online	Other	Off Campus	1996-07-09
S119256534	Rishikesh Jadhav	M	rjadhav1@umd.edu	In Person	School	On Campus	1999-12-22
S119256633	Ria Moghe	F	riamoghe@ummd.edu	In Person	School	On Campus	1999-02-09
S119365724	Nishank Shah	M	nishank7@umd.edu	In Person	School	Off Campus	1998-12-15
S119385289	Rashi Sharma	F	rashis18@umd.edu	In Person	School	On Campus	1998-07-18

Business Transactions

Transaction Number 4:

What are the number of different vaccines taken by students in decreasing order?

```
SELECT v.vacType AS 'Vaccination Type', COUNT(v.vacId) AS 'Count of Vaccines Administered'  
FROM [Wellness.Vaccination] v  
GROUP BY v.vacType  
ORDER BY COUNT(v.vacId) DESC;
```

Result 4:

Vaccination Type	Count of Vaccines Administered
Covid-19 Vaccine	11
HPV Vaccine	4
Flu Shot	3

Business Transactions

Transaction Number 5:

What is the total amount billed on each of the tests and vaccinations?

```
SELECT RESULTS.*
FROM(
    SELECT DISTINCT v.vacType AS "Service Name", SUM(v.vacCost) AS "Total Cost of Services"
    FROM [Wellness.Vaccination] v
    GROUP BY v.vacType

    UNION

    SELECT DISTINCT t.tstType AS "Service Name", SUM(t.tstCost) AS "Total Cost of Services"
    FROM [Wellness.Testing] t
    GROUP BY t.tstType
) RESULTS
ORDER BY RESULTS.[Total Cost of Services] DESC
```

Result 5 :

Service Name	Total Cost of Services
Covid-19 Vaccine	185
Covid Test	80
Strep Test	60
HPV Vaccine	40
Blood Test	30
Flu Shot	30

Business Transactions

Transaction Number 6:

What are the details of students that are cleared to enter the University [Fully vaccinated or covid negative in last 30 days]?

```
SELECT DISTINCT s.stuld AS "Student ID", CONCAT(s.stuFirstName, ' ', s.stuLastName) AS "Student Name",  
                s.stuGender AS "Gender", s.stuLocation AS "Location", s.stuEmail AS "E-mail ID", s.stuDOB AS "Date Of  
Birth"  
FROM [Wellness.Record] r, [Wellness.Perform] p, [Wellness.Student] s,  
[Wellness.Vaccination] v, [Wellness.Testing] t  
WHERE ((r.vacId = v.vacId) AND (r.stuld = s.stuld) AND (v.vacType = 'Covid-19 Vaccine'))  
OR ((p.tstId = t.tstId) AND (p.stuld = s.stuld) AND (t.tstType = 'Covid Test')  
AND (DATEDIFF(DAY, t.tstDate, GETDATE()) < 30))
```

Result 6:

Student ID	Student Name	Gender	Location	E-mail ID	Date Of Birth
S117444377	Deep Singh	M	Off Campus	pds11@umd.edu	1997-10-30
S118602394	Shivani Mehta	F	Off Campus	shiv9796@umd.edu	1996-07-09
S119256534	Rishikesh Jadhav	M	On Campus	rjadhav1@umd.edu	1999-12-22
S119256633	Ria Moghe	F	On Campus	riamoghe@ummd.edu	1999-02-09
S119365724	Nishank Shah	M	Off Campus	nishank7@umd.edu	1998-12-15
S119385289	Rashi Sharma	F	On Campus	rashis18@umd.edu	1998-07-18



THANK YOU