Data Management Project

University Database
Group 6

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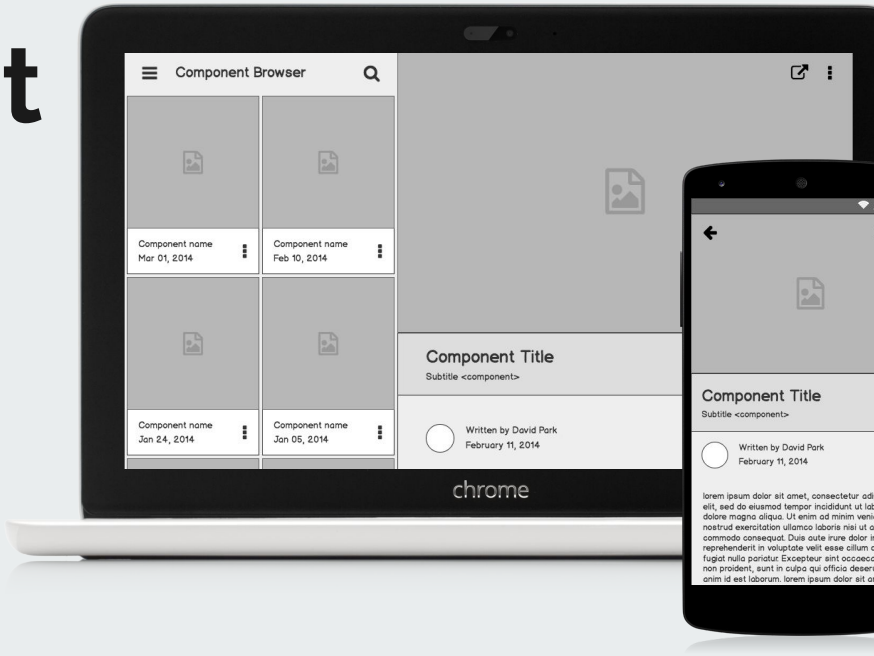
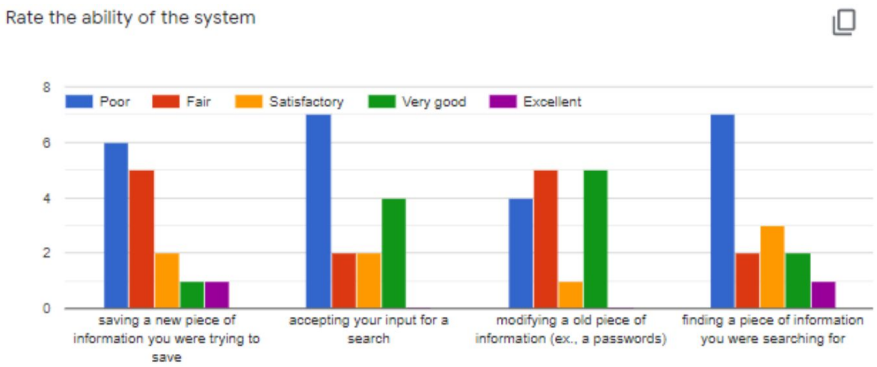


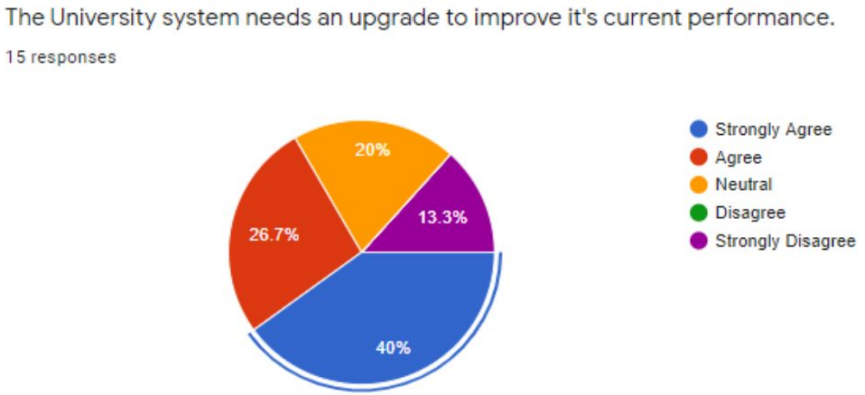
Outline

The Problem

Create an effective University Database

Survey Results





Main Methodology

requirement analysis

feasibility study

data collection

logical design

system analysis and design

Modularity

Data validation

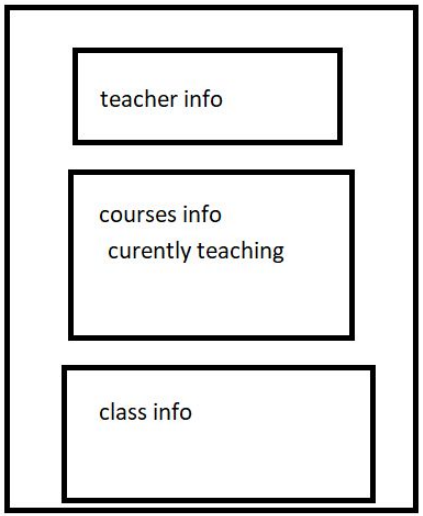
Memory management

server application development

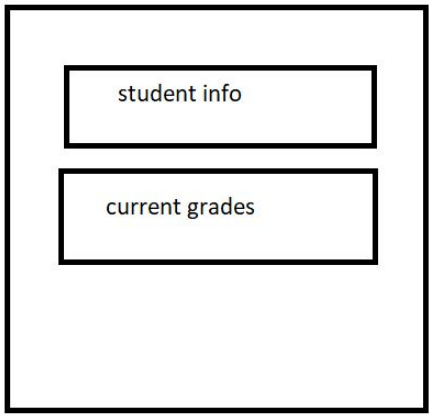
Solution Proposal

Page structure

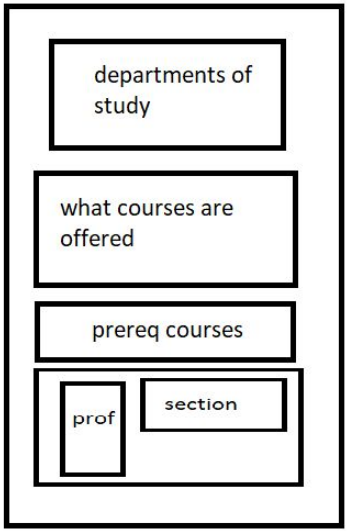
teacher page



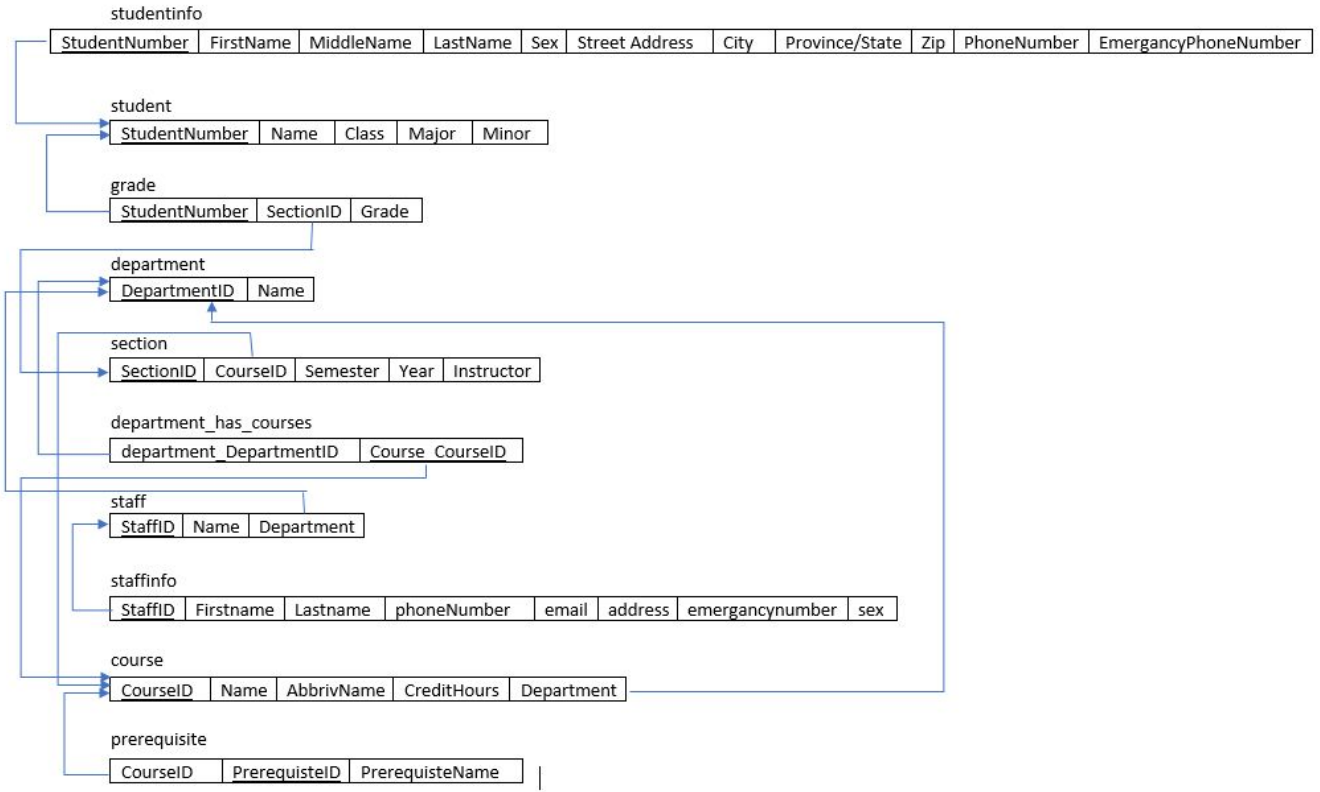
student page



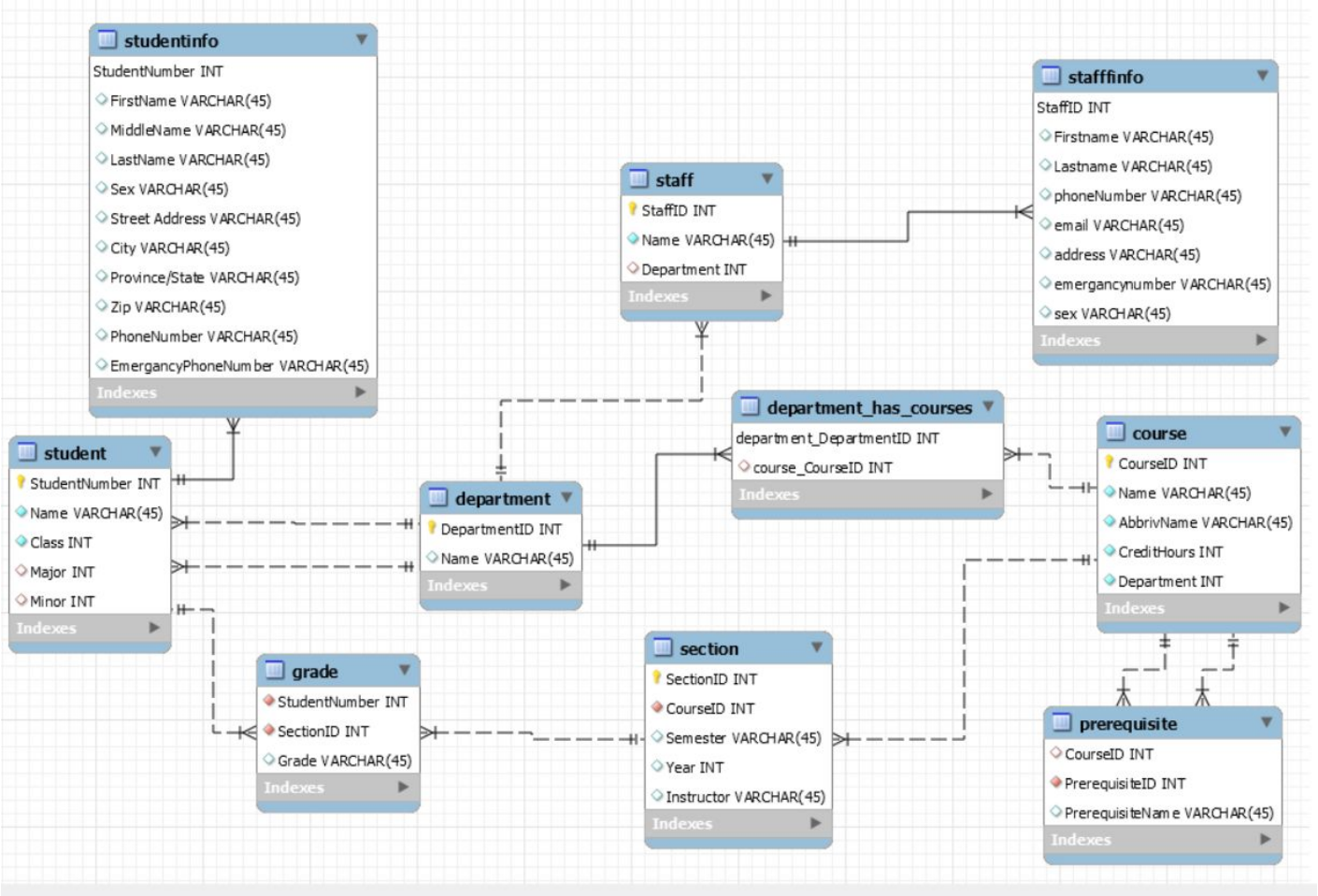
courses of study

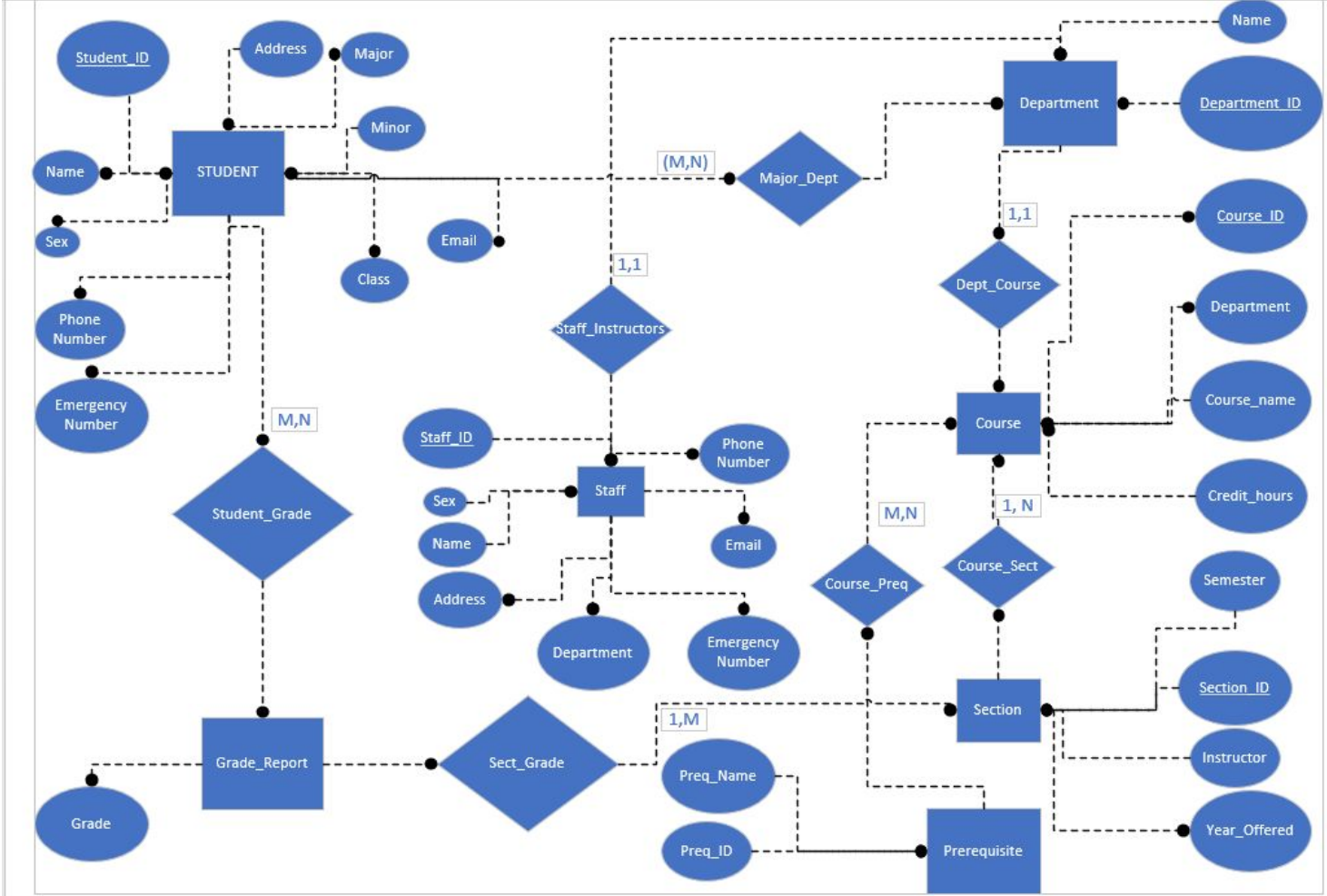


Wireframes



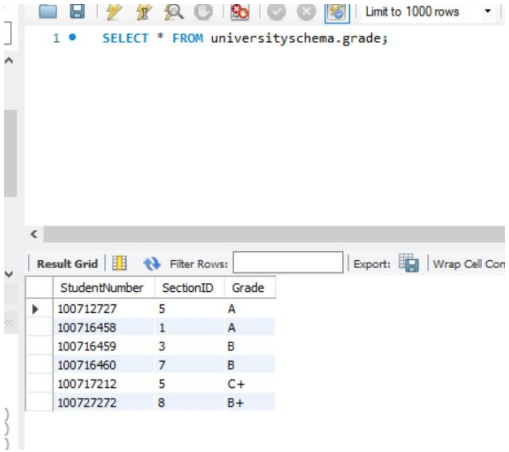
Relation Schema

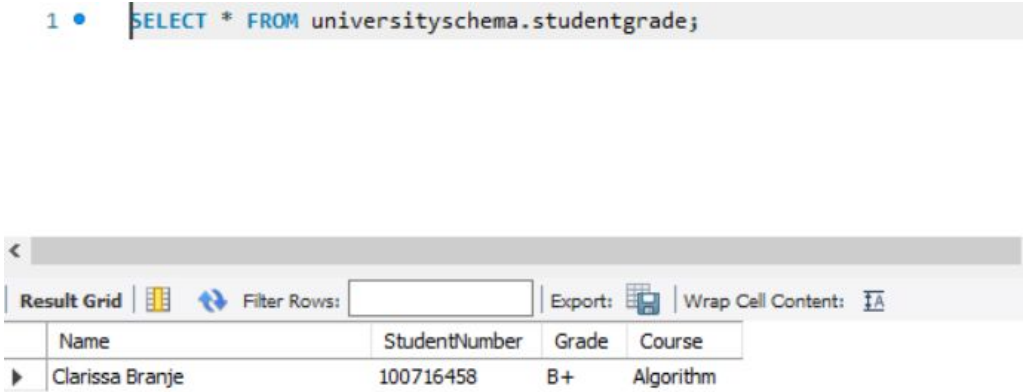

studentinfo
StudentNumber INT
FirstName VARCHAR(45)
MiddleName VARCHAR(45)
LastName VARCHAR(45)
Sex VARCHAR(45)
Street Address VARCHAR(45)
City VARCHAR(45)
Province/State VARCHAR(45)
Zip VARCHAR(45)
PhoneNumber VARCHAR(45)
EmergancyPhoneNumber VARCHAR(45)
Indexes
staff
StaffID INT
Name VARCHAR(45)
Department INT
Indexes
stafffinfo
StaffID INT
Firstname VARCHAR(45)
Lastname VARCHAR(45)
phoneNumber VARCHAR(45)
email VARCHAR(45)
address VARCHAR(45)
emergancynumber VARCHAR(45)
sex VARCHAR(45)
Indexes
department_has_courses
department_DepartmentID INT
course_CourseID INT
Indexes
course
CourseID INT
Name VARCHAR(45)
AbbrivName VARCHAR(45)
CreditHours INT
Department INT
Indexes
student
StudentNumber INT
Name VARCHAR(45)
Class INT
Major INT
Minor INT
Indexes
department
DepartmentID INT
Name VARCHAR(45)
Indexes
grade
StudentNumber INT
SectionID INT
Grade VARCHAR(45)
Indexes
section
SectionID INT
CourseID INT
Semester VARCHAR(45)
Year INT
Instructor VARCHAR(45)
Indexes
prerequisite
CourseID INT
PrerequisiteID INT
PrerequisiteName VARCHAR(45)
Indexes


Student_ID
Address
Major
Minor
Name
STUDENT
Sex
Email
Class
Phone Number
Emergency Number
M,N
Student_Grade
Grade_Report
Grade
Sect_Grade
(M,N)
Major_Dept
1,1
Staff_Instructors
Staff_ID
Sex
Name
Address
Staff
Phone Number
Email
Department
Emergency Number
Name
Department
Department_ID
1,1
Dept_Course
Course_ID
Department
Course_name
Course
Credit_hours
M,N
1, N
Course_Preq
Course_Sect
Semester
Section
Section_ID
Instructor
Year_Offered
1,M
Preq_Name
Preq_ID
Prerequisite

ER diagram

```
Create VIEW `studentgrade` as
 SELECT DISTINCT student.Name, student.StudentNumber, grade.Grade, course.Name as Course
FROM student Join department ON student.Major = department.DepartmentID
Join department_has_courses On department.DepartmentID = department_has_courses.department_DepartmentID
Join course On department_has_courses.course_DepartmentID = course.CourseID
Join section On course.CourseID = section.CourseID
Join grade On section.SectionID = grade.SectionID
Where student.StudentNumber = '100716458';
```

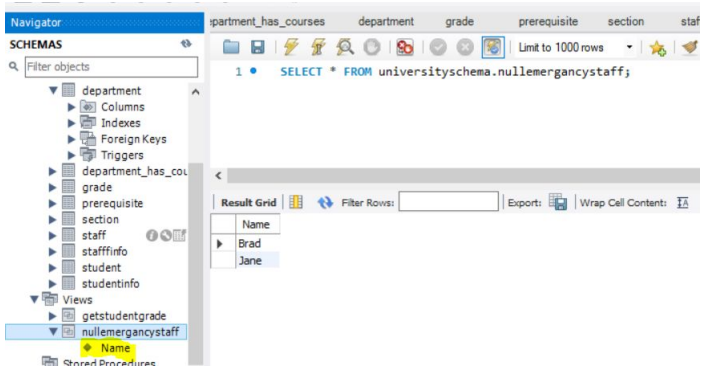




Sample Query

```
Create VIEW `nullemergancystaff` as
SELECT Name
FROM staff
WHERE StaffID = ANY (SELECT StaffID FROM stafffinfo WHERE emergancynumber = '');
```

```
1 •  SELECT * FROM universityschema.stafffinfo;
```



Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

StaffID	Firstname	Lastname	phoneNumber	email	address	emergancynum	sex
1	Kevin	King	7058989898	kk@gmail.c...	221B Baker St.	7059898989	Male
2	Andy	Anderson	7051212121	aa@gmail....	704 Hauser St.	7051111111	Male
3	Jamie	James	7051313131	JJ@gmail.c...	Apartment 5A	705131333	Male
4	Pete	Peter	7051414141	PetPet@g...	124 Conch St.	7054141414	Male
5	Sinn	Simone	7051515151	SinSim@gm...	322 Maple St.	7055151515	Male
6	Washi	John	7051616161	JW@gmail....	485 Maple Drive	7056161616	Male
7	Kayden	Brad	7051717171	KB@gmail....	698 Candlewood Lane		Male
8	Erica	Karen	7051818181	EK@gmail....	607 S. Maple St.	7058181818	Female
9	Mille	Judy	7051919191	MJ@gmail....	79 Wistful Vista	7059191919	Female
10	Sasha	Jane	7052121212	JS@gmail.c...	4222 Clinton Way		Female
11	Mary-Ann	Jill	7053131313	JAM@gmail...	4 Privet Drive	7052342345	Female
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Sample View

```
1 •  SELECT * FROM universityschema.staff;
```

```
1 •  SELECT staff.StaffID FROM staff
2          Union
3          SELECT student.StudentNumber From student
```

Result Grid | Filter Rows: | Edit:

StaffID	Name	Department
1	King	8
2	Anderson	8
3	James	7
4	Peter	8
5	Simone	1
6	John	5
7	Brad	4
8	Karen	5
9	Judy	2
10	Jane	3
NULL	NULL	NULL

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

StaffID
3
4
5
6
7
8
9
10
100712727
100716458
100716459
100716460
100717212
100727272

```
1 •  SELECT * FROM universityschema.student;
```

Result Grid | Filter Rows: | Edit: | Export

StudentNumber	Name	Class	Major	Minor
100716458	Clarissa Branje	3	1	2
100716459	Ned Nilson	2	2	7
100712727	Grace Ly	3	3	4
100716460	Greg Gregory	2	4	NULL
100717212	John Johnsten	1	3	NULL
100727272	Lisa Lucy	4	5	8
NULL	NULL	NULL	NULL	NULL

Sample View

Web platform

php
html
json/Rest API
Php myAdmin
mySQL

```php
<?php

$dbServername = "localhost";
$dbUsername ="root";
$dbPassword ="root";
$dbName ="universityschema";

$conn = mysqli_connect($dbServername, $dbUsername, $dbPassword, $dbName);

if(!$conn){
    die("Connection failed: ".mysqli_connect_error());
}

echo "connected sucessfully";
?>
```

Code snippet- connection

```
        }

        $query="INSERT into staff('StaffID','Name','Department') values ($id,$name,$department)";
        $result=mysqli_query($conn,$query);
        if($result){
            echo "<h3>Registration sucessful<h3>";
        }
        else{
            echo "<h3>Errors with Registration<h3>";
        }
    }

    if(isset($_LOGIN['login'])){
        $loginID=$_LOGIN['id'];
```

```
        $query1="SELECT student.StudentNumber From student ";
        $query2="SELECT staff.StaffID FROM staff";

        $result1=mysql_query($query1);
        $result2=mysql_query($query2);

        while($row=mysql_fetch_assoc($result1)){
            if($row==$loginID){
                header( 'Location: C:\wamp64\www\datafinal\student.php' ) ;
            }
        }

        while($row=mysql_fetch_assoc($result2)){
                if($row==$loginID){
                    header( 'Location: C:\wamp64\www\datafinal\staff.php' ) ;
                }
            }
    }
```

Code snippet-Insert into/fetch from

```
$query3="Select grade.StudentNumber, grade.Grade, course.Name
            FROM
            section Join course on section.CourseID = course.CourseID
            Join
            staff On section.Instructor = staff.Name
            Join grade on grade.SectionID = section.SectionID
            Where staff.StaffID ='5';
            ;
            ";

$result1=mysqli_query($conn,$query1);
$result2=mysqli_query($conn,$query2);
$result3=mysqli_query($conn,$query3);
```

Code snippet- staff.php-Queries

```
</table>

<?php
            while($row=mysqli_fetch_assoc($result3)){
            }
                ?>
            <tr>
                <td><?php echo $row['StudentNumber']; ?></td>
                <td><?php echo $row['Grade']; ?></td>
                <td><?php echo $row['Name'];    ?></td>
            </tr>

</body>
</html>
```

Code snippet- staff.php-Fetch data

```php
<?php
    include_once 'C:\wamp64\www\datafinal\dbh.inc.php';

    $query="SELECT * FROM student WHERE StudentNumber='100716458';";
    $query2="SELECT * FROM universityschema.studentgrade;";

    $result=mysqli_query($conn,$query);
    $result2=mysqli_query($conn,$query2);
?>
```

Code snippet-student.php-queries

```php
<?php
    include_once 'C:\wamp64\www\datafinal\dbh.inc.php';

    $query1=    "SELECT *
                FROM department;
                ";

    $query2=    "SELECT *
                FROM course;
                ";

    $query3="SELECT Name, PrerequisiteName, CreditHours
                FROM course JOIN prerequisite on course.CourseID = prerequisite.CourseID;
                ";

    $query4 = "SELECT Name, Semester, Instructor, Year
                    FROM section JOIN course on section.CourseID = course.CourseID;";


    $result1=mysqli_query($conn,$query1);
    $result2=mysqli_query($conn,$query2);
    $result3=mysqli_query($conn,$query3);
    $result4=mysqli_query($conn,$query4);
?>
```

Code snippet- course.php-queries

```
$post->StudentNumber = $data->StudentNumber;
 $post->Grade = $data->Grade;
 $post->Name = $data->Name;

 if($post->create()) {
   echo json_encode(
     array('message' => 'Post Created')
   );
 } else {
   echo json_encode(
     array('message' => 'Post Not Created')
   );
 }
</html>
```

Code snippet-json

Demo

Next Steps

What next?

- ➔ Connect mysql to the server first before creating the webpage
- ➔ Incorporate a course registration for students on the course page
- ➔ Make stored procedures to quicken the runtime
- ➔ Create more detailed tables: grades
- ➔ Create an admin user to manage more input and output info
- ➔ Give grade change permissions to the Professur
- ➔ Expand server through a network to carry over many computers and extend availability

Questions?