FiNAL PROJECT

Group 8

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Description & list of sample types of analysis/queries for each data subset from the following perspectives:

## School administrator

### Absences

* + 1. What is the total number of student absence on particular day?
* **Query Description :** You have been asked to create a query that returns the total number of students absent on a particular day say 23rd January 2008
* **Type:** Select/Aggregate function(Count)/Where/
* **Tables Involved:** FactAbsence
* **Result**: Count of students absent on a given day
* **Query**:

select count(StudentID) TotalAbsent from factAbsence where cast(AbsenceDate as datetime) = '2008-01-23 00:00:00.000'

* + 1. What is the total number of student absence for particular reason?
       - **Query Description :** You have been asked to create a query that returns the total number of students absent due to reason like medical note
       - **Type:** Select/Aggregate function(Count)/Inner Joins/Where/Group by (Absence code)
       - **Tables Involved:** FactAbsence, dimAbsenceCode
       - **Result**: Count of students absent for medical reason
       - **Query**

select count(StudentID) TotalAbsent from factAbsence fctab inner join dimAbsenceCode dac

on fctab.AbsenceCodeID = dac.AbsenceCodeID

where dac.AbsenceCodeDesc = 'MEDICAL NOTE - EXCUSED'

* + 1. For how many days particular student was absent?
       - **Query Description :** You have been asked to create a query that returns the total number of days Student(Kevin Kelly) was absent
       - **Type:** Select/Aggregate function(Sum)/Inner Joins/Where/Group by(StudentID)
       - **Tables Involved:** FactAbsence, dimStudent
       - **Result**: Count of days Kelvin was absent.
       - **Query**:

select sum(fctab.AbsenceCount) TotalAbsentDays from factAbsence fctab inner join dimStudent ds

on fctab.SISStudentID = ds.SISStudentID

where concat(ds.StudentFirstName, ' ',ds.StudentLastName) = 'Kevin Kelly'

group by ds.SISStudentID

* + 1. What all are the reason for the absent of the particular student in a year?
       - **Query Description :** You have been asked to create a query that returns the distinct reason of absence of Kevin Kelly in 2008
       - **Type:** Select/Distinct/Where/Inner Join/Group by(Year(AbsenceDate)
       - **Tables Involved:** FactAbsence. dimStudent, dimAbsenceCode
       - **Result**: distinct reason of absence for Kelvin Kelly student
       - **Query**:

select distinct fctab.AbsenceCodeID , dac.AbsenceCode AbsenceCode from factAbsence fctab inner join dimStudent ds

on fctab.SISStudentID = ds.SISStudentID inner join dimAbsenceCode dac on fctab.AbsenceCodeID = dac.AbsenceCodeID

where concat(ds.StudentFirstName, ' ',ds.StudentLastName) = 'Kevin Kelly' and year(fctab.AbsenceDate) = 2008

* + 1. What is the number of students remain absent between particular dates?
       - **Query Description :** You have been asked to create a query that returns the number of students remain absent from 1st January 2008 to 3rd march 2008
       - **Type:** Select/Aggregate Function(Count)/Where
       - **Tables Involved:** FactAbsence
       - **Result**: Total number of student absent between 1st January 2008 to 3rd march 2008
       - **Query**:

select count(StudentID) TotalAbsent from factAbsence where cast(AbsenceDate as datetime) between '2008-01-01 00:00:00.000' and '2008-03-03 00:00:00.000'

* + 1. How many unexcused and excused type of leave student take?
       - **Query Description :** You have been asked to create a query that returns the number of excused leave together with number of unexcused leave taken by student kelvin Kelly
       - **Type:** Select/Aggregate Function(sum)/Where/inner join/Group by/union
       - **Tables Involved:** FactAbsence. dimStudent, dimAbsenceCode
       - **Result**: Number of days Kelvin remained absent due to excused and unexcused reason
       - **Query**:

select 'UnexcusedAbsence' AbsenceType ,sum(fctab.AbsenceCount) TotalAbsence from factAbsence fctab inner join dimStudent ds

on fctab.SISStudentID = ds.SISStudentID inner join dimAbsenceCode dac

on fctab.AbsenceCodeID = dac.AbsenceCodeID

where concat(ds.StudentFirstName, ' ',ds.StudentLastName) = 'Kevin Kelly' and dac.Unexcused = 'Y'

group by ds.SISStudentID

union

select 'ExcusedAbsence' AbsenceType,sum(fctab.AbsenceCount) otalAbsence from factAbsence fctab inner join dimStudent ds

on fctab.SISStudentID = ds.SISStudentID inner join dimAbsenceCode dac

on fctab.AbsenceCodeID = dac.AbsenceCodeID

where concat(ds.StudentFirstName, ' ',ds.StudentLastName) = 'Kevin Kelly' and dac.Unexcused = 'N'

group by ds.SISStudentID

* + 1. What is the ratio of male to female students absent in a facility?
       - **Query Description :** You have been asked to create a query that returns the ratio of male student absent vs female student absent
       - **Type:** Select/Subquery(Aggregate Function(male count))/Subquery(count of female)/Where/inner join/Group by(Gender)
       - **Tables Involved:** FactAbsence. dimStudent,dimFacility
       - **Result**: Ratio of male vs female absence in each facility
       - **Query**:

select df.FacilityName,sum(case when ds.Gender = 'M' then 1 else 0 end) /

sum(case when ds.Gender = 'F' then 1 else 0 end) Ratio from factAbsence fctab inner join dimStudent ds

on fctab.SISStudentID = ds.SISStudentID inner join dimFacility df

on fctab.FacilityID = df.FacilityID

group by df.FacilityName

### Discipline Behavior

1. What is the total number of student who got ADMINISTRATIVE DETENTION?
   * **Query Description :** You have been asked to create a query that returns the number of students who got Administrative Detention till now
   * **Type:** Select/Aggregate Function(Count)/Where/inner join
   * **Tables Involved:** FactDicipline. dimDiciplineActionCode
   * **Result**: Count of students who got Administrative Detention
   * **Query**:

select count(fd.SISStudentID) TotalStudents from factDiscipline fd inner join dimDisciplineActionCode dda

on fd.DisciplineActionCodeID = dda.DisciplineActionCodeID

where dda.DisciplineActionDesc = 'ADMINISTRATIVE DETENTION'

1. What is the total number of student given 5 Day letter due to MULT CLASSROOM OFFENSES, PARENT NOTIFIED?

* **Query Description :** You have been asked to create a query that returns the number of students who were given 5 Day letter due to MULT CLASSROOM OFFENSES, PARENT NOTIFIED
* **Type:** Select/Aggregate Function(Count)/Where/inner join
* **Tables Involved:** FactDicipline. dimDiciplineActionCode, dimDiciplineEventCode
* **Result**: Count of students who got 5 Day letter due to MULT CLASSROOM OFFENSES, PARENT NOTIFIED
* **Query:**

select count(fd.SISStudentID) TotalStudents from factDiscipline fd inner join dimDisciplineActionCode dda

on fd.DisciplineActionCodeID = dda.DisciplineActionCodeID

inner join dimDisciplineEventCode dde on fd.DisciplineEventCodeID = dde.DisciplineEventCodeID

where dda.DisciplineActionDesc = '5 DAY LETTER' and dde.DisciplineEventDesc = 'MULT CLASSROOM OFFENSES, PARENT NOTIFIED'

1. What is the total number of student given counseling due to Aggressive Behavior?

* **Query Description :** You have been asked to create a query that returns the number of students who were given Counselling due to Aggressive Behavior
* **Type:** Select/Aggregate Function(Count)/Where/inner join
* **Tables Involved:** FactDicipline. dimDiciplineActionCode, dimDiciplineEventCode
* **Result**: Count of students who need counseling due to Aggressive Behavior
* **Query**:

select count(fd.SISStudentID) TotalStudents from factDiscipline fd inner join dimDisciplineActionCode dda

on fd.DisciplineActionCodeID = dda.DisciplineActionCodeID

inner join dimDisciplineEventCode dde on fd.DisciplineEventCodeID = dde.DisciplineEventCodeID

where dda.DisciplineActionDesc = 'COUNSELING' and dde.DisciplineEventDesc = 'AGGRESSIVE BEHAVIOR'

1. What is the count of student for each disciplinary action?

* **Query Description :** You have been asked to create a query that returns the count of students for each disciplinary action
* **Type:** Select/Aggregate Function(Count)/inner join/Group by(DiciplineActionCode)
* **Tables Involved:** FactDicipline, dimDiciplineActionCode
* **Result**: Count of students for each disciplinary action
* **Query**:

select count(fd.SISStudentID) TotalStudents, dda.DisciplineActionDesc DisciplineAction from factDiscipline fd inner join dimDisciplineActionCode dda

on fd.DisciplineActionCodeID = dda.DisciplineActionCodeID

group by dda.DisciplineActionDesc

1. Which is the most occurring disciplinary violation act?

* **Query Description:** You have been asked to create a query that returns the name of most occurring disciplinary action.
* **Type:** Select/Inner Join/having Aggregate Function(Count)/Group by(DiciplineActionCode)/Order by desc/Limit 1
* **Tables Involved:** FactDicipline, dimDisciplineActionCode
* **Result**: Name of most occurring disciplinary action
* **Query**:

select top 1 count(fd.SISStudentID) TotalStudents, dda.DisciplineActionDesc DisciplineAction from factDiscipline fd inner join dimDisciplineActionCode dda

on fd.DisciplineActionCodeID = dda.DisciplineActionCodeID

group by dda.DisciplineActionDesc

order by TotalStudents desc

1. Who is the most active staff to take disciplinary action?

* **Query Description:** You have been asked to create a query that returns the name of staff who took maximum disciplinary action
* **Type:** Select/Inner Join /having Aggregate Function(Count)/ Group by(ActionStaffId)/Order by desc/Limit 1
* **Tables Involved:** FactDicipline, dimStaff
* **Result**: Name of most active staff to take maximum disciplinary action
* **Query**:

select top 1 ds.StaffName Name, count(\*) Action from factDiscipline fd inner join dimStaff ds

on fd.ActionStaffID = ds.StaffID

group by ds.StaffName

1. What is the highest disciplinary action taking place in Mountain View Elementary facility?

* **Query Description:** You have been asked to create a query that returns most occurring disciplinary action in Mountain View facility
* **Type:** Select/Aggregate Function(Count)/Inner Join/Where/Group by(DisciplinaryActionCode)/Order by desc/Limit 1
* **Tables Involved:** FactDicipline, dimFacility, dimDisciplineActionCode
* **Result**: Name of most occurring disciplinary action in Mountain View Elementary facility.
* **Query**:

select top 1 dda.DisciplineActionDesc DisciplinaryAction, count(\*) TotalCount from factDiscipline fd inner join dimFacility df

on fd.EventFacilityID=df.FacilityID inner join dimDisciplineActionCode dda

on fd.DisciplineActionCodeID = dda.DisciplineActionCodeID

where df.FacilityName = 'Mountain View Elementary'

group by dda.DisciplineActionDesc

order by TotalCount desc

### Academic Performance

1. Find out top 10 student by facility/by grade

* **Query Description:** You have been asked to create a query that returns top 10 students of 4th grade in Mountain View Elementary facility
* **Type:** Select/Inner Join/Where/Order by desc/Limit 10
* **Tables Involved:** FactStudentCourseGrade, FactStudentCourse, dimStudent
* **Result**: Name of top 10 students by numeric grade in Mountain View Elementary facility
* **Query**:

select top 10 ds.StudentName StudentName, sum(fscg.NumericGrade) NumericGrade from factStudentCourseGrade fscg

inner join factStudentCourse fsc

on fscg.StudentCourseID = fsc.StudentCourseID inner join dimStudent ds

on fsc.StudentID = ds.StudentID inner join dimFacility df

on fsc.FacilityID = df.FacilityID

where fsc.GradeLevel = '04' and df.FacilityName = 'Mountain View Elementary'

group by fsc.GradeLevel, StudentName

order by NumericGrade desc

1. Which is the Best standardize test score of a student of each grade?

* **Query Description:** You have been asked to create a query that returns best standardize test score of Peter Villadsen for each grade
* **Type:** Select/Inner Join/Where/Order by desc/limit 1
* **Tables Involved:** FactStandardizedTestScore. FactStandardizedTestDomainScore, dimStudent,dimstandardizedTestDomain
* **Result**: Retrive the name of standardized test for Peter Villadsen scoring maximum marks
* **Query**:

select max(fsts.ScaledScore) ScaledScore, ds.Grade Grade,dsub.SubjectName from factStandardizedTestScore fsts inner join

factStandardizedTestDomainScore fstds on fsts.StandardizedTestScoreID = fstds.StandardizedTestScoreID

inner join dimStudent ds on fsts.StudentID = ds.StudentID

inner join dimStandardizedTestDomain dstd on fsts.SubjectID = dstd.SubjectID

inner join dimSubject dsub on fsts.SubjectID = dsub.SubjectID

where ds.StudentName = 'Peter Villadsen'

group by ds.Grade,dsub.SubjectName

order by ScaledScore desc

1. Which high school student scored highest in math? display students details

* **Query Description:** You have been asked to create a query that returns the details of high school student scoring maximum marks in math
* **Type:** Select/Inner Join/Where/Order by desc/limit 1
* **Tables Involved:** FactHSGTScore, FactHSGTDomainScore, dimStudent, dimSubject
* **Result**: Retrieve the name of high school student having highest math score
* **Query**:

select top 1 ds.StudentName Name,max(fhs.ScaledScore) Score , ds.Grade from factHSGTScore fhs inner join

factHSGTDomainScore fhds on fhs.HSGTScoreID = fhds.HSGTScoreID

inner join dimStudent ds on fhs.StudentID = ds.StudentID

inner join dimSubject dsub on fhs.SubjectID = dsub.SubjectID

where dsub.SubjectName = 'Math'

group by ds.StudentName, ds.Grade

order by score desc

### Special Programs

1. What are the special programs available?

* **Query Description:** You have been asked to create a query that returns the special programs available in a facility Mountain View Elementary.
* **Type:** Select/InnerJoins (ProgramID)/Where
* **Tables Involved:** factSpecialProgram ,dimSpecialProgram
* **Result:** The result of this query would fetch all special programs available in Mountain View Elementary.
* **Query :**

select distinct sp.Program from factSpecialProgram f

join dimSpecialProgram sp

on f.ProgramID = sp.ProgramID

1. Number of students/Staff in EDUCABLE MENTALLY HANDICAPPED special program belongs to which facility?

* **Query Description:** You have been asked to create a query that returns the highest number of students/Staff belong to which facility
* **Type:** Select/Aggregate Function(count)/InnerJoins (StudentID, FacilityID) /Group By (Facility Name)
* **Tables Involved:** factSpecialProgram, dimFacility , dimStudent.
* **Result:** The result of this query would return the facility name and number of students enrolled in EDUCABLE MENTALLY HANDICAPPED program.
* **Query :**

select top 1 count(F.StudentID) as TotalStudentEnrollment, fa.FacilityName from factSpecialProgram F

join dimStudent S

on f.StudentID = s.StudentID

join dimFacility fa

on s.FacilityID = fa.FacilityID

join dimSpecialProgram sp

on f.ProgramID = sp.ProgramID

where sp.Program = 'EDUCABLE MENTALLY HANDICAPPED '

group by fa.FacilityName

1. What is the total count enrollment in special program by facility?

* **Query Description:** You have been asked to create a query that displays the total number of enrollments of students in special program with its facilityname.
* **Type:** Select/ Aggregate Function(count)/InnerJoins (StudentID, FacilityID) /Group By (Facility Name)
* **Tables Involved:** factSpecialProgram, dimFacility , dimStudent
* **Result:** The result of this query would fetch number of enrollments of students in special program with its facilityname.
* **Query :**

select count(f.StudentID) as TotalEnrollment, year(S.EnrollmentDate) as Year, fa.FacilityName from factSpecialProgram F

join dimStudent S

on f.StudentID = s.StudentID

join dimFacility fa

on s.FacilityID = fa.FacilityID

group by year(s.EnrollmentDate), fa.FacilityName

1. How many students withdrew from program and why?

* **Query Description:** You have been asked to create a query that displays the total number of students withdrew from special program along with withdrawal reasons
* **Type:** Select/ Aggregate Function(count)/InnerJoins (StudentID, WithdrawalID)/Group By (Special programid)
* **Tables Involved:** factSpecialProgram, dimStudent ,dimWithdrawalCode.
* **Result:** The result of this query would fetch number of students withdrew from each program and the withdrawalcode reason.
* **Query :**

select count (F.StudentID) as WithdrawalNumber, w.WithdrawalCodeDesc from factSpecialProgram F

join dimStudent S

on F.StudentID = S.StudentID

join dimWithdrawalCode w

on s.WithdrawalCodeID = w.WithdrawalCodeID

group by WithdrawalCodeDesc

1. Find total enrollment of students in particular program year wise.

* **Query Description:** You have been asked to create a query that returns total enrollment of students in special program in each year
* **Type:** Select/ Aggregate Function(Count, year)/ InnerJoins (StudentID)/Group by (year)
* **Tables Involved:** factSpecialProgram, dimStudent
* **Result:** The result of this query would fetch total number of students enrolled in special program yearwise.
* **Query :**

select count(f.StudentID) as Enrollment, year(S.EnrollmentDate) as Year from factSpecialProgram F

join dimStudent S

on f.StudentID = s.StudentID

group by year(s.EnrollmentDate)

1. Who all Staff allocated to GIFTED special program?

* **Query Description:** You have been asked to create a query that returns the staff details that are allocated to special programs.
* **Type:** Select/InnerJoins (StudentID, StaffID)/Where (StudentID)
* **Tables Involved:** factSpecialProgram, dimStudent ,dimStaff, dimSpecialProgram
* **Result:** The result of this query would fetch staff details that are allocated to GIFTED special programs.
* **Query :**

select distinct (concat(st.StaffFirstName,' ',st.StaffLastName)) as StaffName from factSpecialProgram f

join dimSpecialProgram sp

on f.ProgramID = sp.ProgramID

join dimStudent S

on f.StudentID = s.StudentID

join dimStaff st

on s.HomeroomStaffID = st.StaffID

where sp.Program = 'GIFTED'

## Teacher

### Absences

1. What is total number of student absence on particular day?

* **Query Description :** You have been asked to create a query that returns the total number of students absent on a particular day say 23rd January 2008
* **Type:** Select/Aggregate function(Count)/Where
* **Tables Involved:** FactAbsence
* **Result**: Count of students absent on a given day
* **Query** :

select count(StudentID) as StudentAbsent from factAbsence

where cast(AbsenceDate as datetime) = '2008-01-23 00:00:00.000'

1. What is the total number of student absence for particular reason?

* **Query Description :** You have been asked to create a query that returns the total number of students absent due to reason like medical note
* **Type:** Select/Aggregate function(Count)/Inner Joins/Where/Group by (Absence code)
* **Tables Involved:** FactAbsence, dimAbsenceCode
* **Result**: Count of students absent for medical reason
* **Query** :

select count(StudentID) as StudentAbsent from factAbsence F

join dimAbsenceCode A

on F.AbsenceCodeID = A.AbsenceCodeID

where AbsenceCodeDesc like'%Medical Note%'

group by AbsenceCode

1. Find absent student and absent duration.

* **Query Description :** You have been asked to create a query that returns the total number of days Student(Kevin Kelly) was absent
* **Type:** Select/Aggregate function(Sum)/Inner Joins/Where/Group by(StudentID)
* **Tables Involved:** FactAbsence, dimStudent
* **Result**: Count of days Kelvin was absent.
* **Query** :

select sum(f.AbsenceCount) as AbsenceCount from factAbsence F

join dimStudent S

on F.StudentID = S.StudentID

where S.StudentName = 'Kevin Kelly'

1. What all are the reason for the absent of the particular student in a year?

* **Query Description :** You have been asked to create a query that returns the distinct reason of absence of Kelvin Kelly in 2008
* **Type:** Select/Distinct/Where/Inner Join/Group by(Year(AbsenceDate)
* **Tables Involved:** FactAbsence. dimStudent, dimAbsenceCode
* **Result**: distinct reason of absence for Kelvin Kelly student
* **Query** :

select Distinct AbsenceCodeDesc from factAbsence F

join dimAbsenceCode A

on F.AbsenceCodeID = A.AbsenceCodeID

join dimStudent S

on F.StudentID = S.StudentID

where S.StudentName = 'Kevin Kelly'

and year(AbsenceDate) = 2008

group by AbsenceCodeDesc;

1. Find out count of students who remain absent between particular dates

* **Query Description :** You have been asked to create a query that returns the number of students remain absent from 1st January 2008 to 3rd march 2008
* **Type:** Select/Aggregate Function(Count)/Where
* **Tables Involved:** FactAbsence
* **Result**: Total number of student absent between 1st January 2008 to 3rd march 2008
* **Query** :

select count(StudentID) as StudentAbsent from factAbsence

where cast(AbsenceDate as datetime) between '2008-01-01 00:00:00.000' and '2008-03-01 00:00:00.000'

1. How many unexcused and excused leave student take?

* **Query Description :** You have been asked to create a query that returns the number of excused leave together with number of unexcused leave taken by student kelvin Kelly
* **Type:** Select/Aggregate Function(sum)/Where/inner join/Group by/union
* **Tables Involved:** FactAbsence. dimStudent, dimAbsenceCode
* **Result**: Number of days Kelvin remained absent due to excused and unexcused reason
* **Query** :

select sum(f.AbsenceCount) as AbsenceCount, case when Unexcused= 'Y' then 'UnExcusedLeave' else 'ExcusedLeave' end as LeaveType from factAbsence F

join dimStudent S

on F.StudentID = S.StudentID

join dimAbsenceCode A

on F.AbsenceCodeID = A.AbsenceCodeID

where S.StudentName = 'Kevin Kelly'

group by Unexcused

### Discipline Behavior

1. Find student who faced maximum disciplinary action

* **Query Description:** You have been asked to create a query that returns the name of student involving in maximum disciplinary action.
* **Type:** Select/Inner Join/having Aggregate Function(Count) of studentid/Order by desc/Limit 1
* **Tables Involved:** FactDicipline, dimStudent
* **Result**: Name of student doing most disciplinary action
* **Query :**

select top 1 S.StudentName from factDiscipline F

join dimStudent S

on F.StudentID = S.StudentID

group by StudentName

order by count(F.StudentID) desc

1. What is the total number of student who got ADMINISTRATIVE DETENTION ?
   * **Query Description :** You have been asked to create a query that returns the number of students who got Administrative Detention till now
   * **Type:** Select/Aggregate Function(Count)/Where/inner join/Group by(DiciplineActionCode)
   * **Tables Involved:** FactDicipline. dimDiciplineActionCode
   * **Result**: Count of students who got Administrative Detention
   * **Query** :

select count(F.StudentID) as TotalStudents from factDiscipline F

join dimDisciplineActionCode D

on F.DisciplineActionCodeID = D.DisciplineActionCodeID

where DisciplineActionDesc = 'ADMINISTRATIVE DETENTION'

group by DisciplineActionCode

1. What is the total number of student given 5 Day letter due to MULT CLASSROOM OFFENSES, PARENT NOTIFIED?

* **Query Description :** You have been asked to create a query that returns the number of students who were given 5 Day letter due to MULTIPLE CR OFFENSE HANDLED BY TEACHER
* **Type:** Select/Aggregate Function(Count)/Where/inner join/Group by(DiciplineEventCode,DiciplineActionCode)
* **Tables Involved:** FactDicipline. dimDiciplineActionCode, dimDiciplineEventCode
* **Result**: Count of students who got 5 Day letter due to MULTIPLE CR OFFENSE HANDLED BY TEACHER
* **Query** :

select count(F.StudentID) as TotalStudents from factDiscipline F

join dimDisciplineActionCode D

on F.DisciplineActionCodeID = D.DisciplineActionCodeID

join dimDisciplineEventCode E

on F.DisciplineEventCodeID = E.DisciplineEventCodeID

where DisciplineActionDesc = '5 DAY LETTER'

and E.DisciplineEventDesc = 'MULT CLASSROOM OFFENSES, PARENT NOTIFIED'

group by DisciplineEventDesc, DisciplineActionCode

1. What is the total number of student given counseling due to Aggressive Behavior?

* **Query Description :** You have been asked to create a query that returns the number of students who were given Counselling due to Aggressive Behavior
* **Type:** Select/Aggregate Function(Count)/Where/inner join/Group by(DiciplineEventCode,DiciplineActionCode)
* **Tables Involved:** FactDicipline. dimDiciplineActionCode, dimDiciplineEventCode
* **Result**: Count of students who need counseling due to Aggressive Behavior
* **Query** :

select count(F.StudentID) as TotalStudents from factDiscipline F

join dimDisciplineActionCode D

on F.DisciplineActionCodeID = D.DisciplineActionCodeID

join dimDisciplineEventCode E

on F.DisciplineEventCodeID = E.DisciplineEventCodeID

where DisciplineActionDesc = 'Counseling'

and E.DisciplineEventDesc = 'Aggressive Behavior'

group by DisciplineEventDesc, DisciplineActionCode

1. What is the total number of student for each disciplinary action for particular facility?

* **Query Description :** You have been asked to create a query that returns the count of students for each disciplinary action for Mountain view Elementary
* **Type:** Select/Aggregate Function(Count)/inner join/Where/Group by(DiciplineActionCode)
* **Tables Involved:** FactDicipline, dimFacility
* **Result**: Count of students for each disciplinary action
* **Query** :

select count(StudentID) as TotalStudents, DisciplineActionDesc from factDiscipline F

join dimFacility Fa

on F.EventFacilityID = Fa.FacilityID

join dimDisciplineActionCode A

on F.DisciplineActionCodeID = A.DisciplineActionCodeID

where FacilityName = 'Mountain view Elementary'

group by DisciplineActionDesc

1. Which is the most occurring disciplinary violation act for particular facility?

* **Query Description:** You have been asked to create a query that returns the name of most occurring disciplinary action in Mountain View Elementary
* **Type:** Select/Inner Join/Where/having Aggregate Function(Count)/Group by(DiciplineActionCode)/Order by desc/Limit 1
* **Tables Involved:** FactDicipline, dimDisciplinaryActionCode, dimFacility
* **Result**: Name of most occurring disciplinary action
* **Query** :

select top 1 DisciplineActionDesc from factDiscipline F

join dimFacility Fa

on F.EventFacilityID = Fa.FacilityID

join dimDisciplineActionCode A

on F.DisciplineActionCodeID = A.DisciplineActionCodeID

where FacilityName = 'Mountain view Elementary'

group by DisciplineActionDesc

### Academic Performance

1. Who are the top 10 student by grade?

* **Query Description:** You have been asked to create a query that returns top 10 students of 9th grade in Contoso High School facility
* **Type:** Select/Inner Join/Where/Order by desc/Limit 10
* **Tables Involved:** FactStudentCourseGrade , FactStudentScore ,dimStudent
* **Result**: Name of top 10 students of 9th grade by numeric grade in Contoso High School facility
* **Query**

select top 10 std.StudentName, sum(factsc.NumericGrade) TotalGrade from factStudentCourseGrade factsc

inner join factStudentCourse factstd

on factsc.StudentCourseID = factstd.StudentCourseID

inner join dimStudent std

on factstd.StudentID = std.StudentID

inner join dimFacility fac

on factstd.FacilityID = fac.FacilityID

where factstd.GradeLevel = '09'

and fac.FacilityName = 'Contoso High School'

group by factstd.GradeLevel, std.StudentName

order by TotalGrade desc

1. Which all Students need grade improvement?

* **Query Description:** You have been asked to create a query that returns name of students in 9th grade in Contoso High School facility who got ‘D’ grade
* **Type:** Select/Inner Join/Where/Limit 10
* **Tables Involved:** FactStudentCourseGrade, FactStudentScore, dimStudent
* **Result**: Name of students of 9th grade by numeric grade in Contoso High School facility
* **Query**

select distinct std.StudentName from factStudentCourseGrade factsc

inner join factStudentCourse factstd

on factsc.StudentCourseID = factstd.StudentCourseID

inner join dimStudent std

on factstd.StudentID = std.StudentID

inner join dimFacility fac

on factstd.FacilityID = fac.FacilityID

where factstd.GradeLevel = '09' and factsc.AlphaGrade = 'D'

and fac.FacilityName = 'Contoso High School'

1. Find first 3 Rank of students by grade

* **Query Description:** You have been asked to create a query that returns name of students in 9th grade in Contoso High School facility
* **Type:** Select/Inner Join/Where/Limit 3
* **Tables Involved:** FactStudentCourseGrade, FactStudentScore, dimStudent
* **Result**: Name of students of 9th grade by numeric grade in Contoso High School facility
* **Query**

select a.StudentName, a.RankInClass from

(select std.StudentName ,sum(factgrade.NumericGrade) TotalMarks,dense\_rank() over( order by sum(factgrade.NumericGrade) desc) RankInClass

from factStudentCourseGrade factgrade

inner join factStudentCourse factstd

on factgrade.StudentCourseID = factstd.StudentCourseID

inner join

dimStudent std

on factstd.StudentID = std.StudentID

inner join

dimFacility fac

on factstd.FacilityID = fac.FacilityID

where factstd.gradelevel = '09' and fac.FacilityName = 'Contoso High School'

group by factstd.GradeLevel, std.StudentName

)a where RankInClass <4

1. Find percentage of particular student.

* **Query Description:** You have been asked to create a query that returns percentage of students in given grade
* **Type:** Function input student name, grade
* **Tables Involved:** FactStudentCourseGrade, FactStudentScore, dimStudent
* **Result**: function returns the % of given student and grade
* Query

CREATE FUNCTION fn\_StudentPercentageCalculator

(

-- Add the parameters for the function here

@studentname nvarchar(50),

@grade nvarchar(5)

)

RETURNS float

AS

BEGIN

-- Declare the return variable here

DECLARE @result float

-- Add the T-SQL statements to compute the return value here

set @result = (select (a.TotalMarksObtained/a.TotalMarks)\*100 Percentage from

(select std.StudentName ,sum(factgrade.NumericGrade) TotalMarksObtained, count(factgrade.NumericGrade)\*100 TotalMarks,dense\_rank() over( order by sum(factgrade.NumericGrade) desc) RankInClass from factStudentCourseGrade factgrade inner join factStudentCourse factstd on factgrade.StudentCourseID = factstd.StudentCourseID

inner join dimStudent std on factstd.StudentID = std.StudentID where factstd.gradelevel = @grade group by factstd.GradeLevel, std.StudentName)a where a.StudentName = @studentname);

-- Return the result of the function

RETURN @result;

END

GO

select dbo.fn\_StudentPercentageCalculator('Andrew Rath','09') as Percentage

1. Which all student require improvement in particular subject?

* **Query Description:** You have been asked to create a query that returns name of students with Score who needs improvement in given subject
* **Type:** Store procedure input subject
* **Tables Involved:** FactStudentCourseGrade, FactStudentScore, dimStudent, dimSubject
* **Result**: procedure returns the name of students who has D grade and needs improvement in particular subject.
* **Query**

create procedure spStudentNeedsImprovementInSubject

@subject nvarchar(200)

as

begin

select distinct std.StudentName, factgrade.AlphaGrade from

factStudentCourseGrade factgrade

inner join factStudentCourse factstd

on factgrade.StudentCourseID = factstd.StudentCourseID

inner join

dimStudent std

on factstd.StudentID = std.StudentID

inner join dimCourse course

on factstd.CourseID = course.CourseID

inner join dimSubject subj

on course.SubjectID = subj.SubjectID

where factgrade.AlphaGrade = 'D' and

subj.SubjectName = @subject

end

exec spStudentNeedsImprovementInSubject 'Math'

1. What is the performance level of StandardizedTestScore of a student on basis of subject?

* **Query Description:** You have been asked to create a query that returns the performance level of given student for all subjects
* **Type:** Store procedure input student name
* **Tables Involved:** FactStandardizedTestScore, FactStandardizedTestDomainScore, dimStudent, dimStandardizedTestDomain
* **Result**: procedure returns performance sheet of given student for all subjects taken till now.
* **Query**

create procedure spStudentPerformanceLevel

@studentname nvarchar(50)

as

begin

select distinct subj.SubjectName, factscore.PerformanceLevel ,std.StudentName from

factStandardizedTestScore factscore

inner join factStandardizedTestDomainScore factdomain

on factscore.StandardizedTestScoreID = factdomain.StandardizedTestScoreID

inner join

dimStudent std

on factscore.StudentID = std.StudentID

inner join dimSubject subj

on factscore.SubjectID = subj.SubjectID

where

std.StudentName = @studentname

end

exec spStudentPerformanceLevel 'Nupur Agarwal'

1. Which Students are good in vocabulary, algebra, geography, economic?

* **Query Description:** You have been asked to create a query that returns name of students good in vocabulary, algebra, geography, economics
* **Type:** Store procedure input Subject names
* **Tables Involved:** FactStandardizedTestScore, FactStandardizedTestDomainScore, dimStudent, dimStandardizedTestDomain
* **Result**: procedure returns name of students good in particular standardized test subject

create procedure spStudentGoodInStandardizedTestScore

@subject nvarchar(50)

as

begin

select top 3 testDomain.StandardizedTestDomain , factscore.ScaledScore ,std.StudentName from

factStandardizedTestScore factscore

inner join factStandardizedTestDomainScore factdomain

on factscore.StandardizedTestScoreID = factdomain.StandardizedTestScoreID

inner join dimStandardizedTestDomain testDomain

on factdomain.StandardizedTestDomainID = testDomain.StandardizedTestDomainID

inner join

dimStudent std

on factscore.StudentID = std.StudentID

where

testDomain.StandardizedTestDomain = @subject

order by factscore.ScaledScore desc

end

exec spStudentGoodInStandardizedTestScore 'Vocabulary'

1. Publish Scorecard of a student

* **Query Description:** You have been asked to create a query that returns the scorecard of student for each grade
* **Type:** Store procedure input student id (Pivot table in store procedure)
* **Tables Involved: :** FactStudentCourseGrade, FactStudentCourse, dimSubject
* **Result**: Procedure returns a table consisting of marks of given student for each grade
* **Query**

CREATE PROCEDURE spStudentScoreCard

-- Add the parameters for the stored procedure here

@studentname nvarchar(50)

AS

BEGIN

select SubjectName, [09],[10],[11]

from(

select distinct subj.SubjectName,max(factgrade.AlphaGrade) AlphaGrade ,factstd.GradeLevel from

factStudentCourseGrade factgrade

inner join factStudentCourse factstd

on factgrade.StudentCourseID = factstd.StudentCourseID

inner join

dimStudent std

on factstd.StudentID = std.StudentID

inner join dimCourse course

on factstd.CourseID = course.CourseID

inner join dimSubject subj

on course.SubjectID = subj.SubjectID

where

std.StudentName = @studentname

group by subj.SubjectName, factstd.GradeLevel

) as sourcetable

pivot(max(AlphaGrade) for GradeLevel in ([09],[10],[11]) ) pivottable

end

exec spStudentScoreCard 'Andrew Rath'

### Special Programs

1. What is the enrollment date in a special program for particular student?

* **Query Description:** You have been asked to create a query that returns the enrollment date in GIFTED Special program of particular student (Student ID=18)
* **Type:** Select/InnerJoins (StudentID)/Where (StudentID)
* **Tables Involved:** factSpecialProgram ,dimStudent
* **Result:** The result of this query would fetch enrollment date for a particular student in GIFTED special program.
* **Query :**

select f.studentid, s.enrollmentdate, sp.Program from factSpecialProgram F

join dimStudent S

on f.StudentID = s.StudentID

join dimSpecialProgram sp

on f.ProgramID = sp.ProgramID

where f.StudentID = 18

and sp.Program = 'GIFTED'

1. Which all assignment type in a special program are assigned to students?

* **Query Description:** You have been asked to create a query that returns the assignment assigned to students in GIFTED special program
* **Type:** Select/InnerJoins (StudentID, AssignmentID)/Where (StudentID)/Group By(Assignment)
* **Tables Involved:** factSpecialProgram, dimStudent ,dimAssignment, dimSpecialProgram
* **Result:** The result of this query would fetch assignment assigned to each student in GIFTED special program
* **Query :**

select f.StudentID, A.Assignment from factSpecialProgram F

join dimStudent S

on f.StudentID = s.StudentID

join dimSpecialProgram sp

on f.ProgramID = sp.ProgramID

join dimAssignment A

on s.AssignmentID = A.AssignmentID

where sp.Program = 'GIFTED'

group by A.Assignment,f.StudentID

## Parent

### Absences

1. What is the total number of leave for the student?

* **Query Description:** You have been asked to create a query that returns the total number of leaves of given student for given grade
* **Type:** Store procedure input student names, grade
* **Tables Involved:** FactAbsence, dimStudent
* **Result**: procedure returns number of leaves taken by student in particular grade
* **Query**

**Store Procedure**

CREATE PROCEDURE spFindStudentAbsence

@studentName nvarchar(50),

@grade nvarchar(5)

AS

BEGIN

select count(fact.AbsenceCount) TotalAbsentDays from factAbsence fact inner join dimStudent std

on fact.SISStudentID = std.SISStudentID

where std.StudentName = @studentName and std.Grade = @grade

END

GO

Execute Procedure

exec spFindStudentAbsence 'Kevin Kelly','09'

1. Was student EXCUSED ABSENCE from the school?

* **Query Description:** You have been asked to create a query that returns Yes/No depending on whether given student was expelled from the school
* **Type:** function returns Yes/No input student id
* **Tables Involved:** FactAbsence, dimAbsenceCode, dimStudent
* **Result**: function returns Yes/No whether student was expelled from school
* **Query**

CREATE FUNCTION funStudentExcusedAbsence

(

@studentname nvarchar(50)

)

RETURNS nvarchar(3)

AS

BEGIN

-- Declare the return variable here

DECLARE @result nvarchar(3)

Declare @countAbsense int

set @countAbsense = (select count(\*) from [dbo].[factAbsence] fact inner join

dimAbsenceCode abcode

on fact.AbsenceCodeID = abcode.AbsenceCodeID

inner join dimStudent std

on fact.SISStudentID = std.SISStudentID

where abcode.AbsenceCodeDesc = 'EXCUSED ABSENCE'

and studentname = @studentname);

if(@countAbsense > 0)

begin

set @result = 'Yes';

end

else

begin

set @result = 'No';

end

-- Return the result of the function

RETURN @result

END

GO

Executing function

select dbo.funStudentExcusedAbsence('Kevin Kelly') as ExcusedAbsence

### Discipline Behavior

* + - * 1. What all disciplinary action is face by the student?
* **Query Description:** You have been asked to create a query that returns disciplinary actions of student
* **Type:** Store procedure input student id
* **Tables Involved:** FactDiscipline, dimDisciplineActionCode, dimStudent
* **Result**: procedure returns the list of disciplinary action which student has undergone
* **Query**

CREATE PROCEDURE spStudentDisciplinaryActions

-- Add the parameters for the stored procedure here

@studentname nvarchar(50)

AS

BEGIN

SELECT distinct dicac.DisciplineActionDesc from factDiscipline fact inner join

dimDisciplineActionCode dicac on

fact.DisciplineActionCodeID = dicac.DisciplineActionCodeID

inner join

dimStudent std on

fact.SISStudentID = std.SISStudentID

where std.StudentName = @studentname;

END

GO

exec spStudentDisciplinaryActions 'Kim Abercrombie'

* + - * 1. Who is the staff responsible for taking disciplinary action?
* **Query Description:** You have been asked to create a query that returns the staff responsible for taking action against each disciplinary action for a student
* **Type:** Store procedure input student id
* **Tables Involved:** FactDiscipline, dimDisciplineActionCode, dimStaff,dimStudent
* **Result**: procedure returns the list of staff responsible for taking disciplinary action for a student.
* **Query**

CREATE PROCEDURE spStudentDisciplinaryActionsStaff

-- Add the parameters for the stored procedure here

@studentname nvarchar(50)

AS

BEGIN

SELECT distinct dicac.DisciplineActionDesc, staff.StaffName from factDiscipline fact inner join

dimDisciplineActionCode dicac on

fact.DisciplineActionCodeID = dicac.DisciplineActionCodeID

inner join

dimStudent std on

fact.SISStudentID = std.SISStudentID

inner join

dimStaff staff on

fact.ActionStaffID = staff.StaffID

where std.StudentName = @studentname;

END

GO

exec spStudentDisciplinaryActionsStaff 'Kim Abercrombie'

### Academic Performance

1. What is the rank of student?

* **Query Description:** You have been asked to create a query that returns the rank of student for particular grade
* **Type:** Select/Rank()/where
* **Tables Involved:** FactStudentCourseGrade, FactStudentCourse,dimStudent
* **Result**: query returns rank of student for particular grade
* **Query**

select a.StudentName, a.RankInClass from

(select std.StudentName ,sum(factgrade.NumericGrade) TotalMarks,dense\_rank() over( order by sum(factgrade.NumericGrade) desc) RankInClass

from factStudentCourseGrade factgrade

inner join factStudentCourse factstd

on factgrade.StudentCourseID = factstd.StudentCourseID

inner join

dimStudent std

on factstd.StudentID = std.StudentID

where factstd.gradelevel = '09'

group by factstd.GradeLevel, std.StudentName

)a where a.StudentName = 'Andrew Rath'

1. What is the percentage of particular student?

* **Query Description:** You have been asked to create a query that returns percentage of student of particular grade
* **Type:** Select/Calculated function(input studentid , grade)/where
* **Tables Involved:** FactStudentCourseGrade, FactStudentCourse
* **Result**: query returns percentage of student for particular grade
* **Query**

select a.StudentName, (a.TotalMarksObtained/a.TotalMarks)\*100 Percentage , a.RankInClass from

(select std.StudentName ,sum(factgrade.NumericGrade) TotalMarksObtained, count(factgrade.NumericGrade)\*100 TotalMarks,dense\_rank() over( order by sum(factgrade.NumericGrade) desc) RankInClass

from factStudentCourseGrade factgrade

inner join factStudentCourse factstd

on factgrade.StudentCourseID = factstd.StudentCourseID

inner join

dimStudent std

on factstd.StudentID = std.StudentID

where factstd.gradelevel = '09'

group by factstd.GradeLevel, std.StudentName

)a where a.StudentName = 'Andrew Rath'

1. Which all subject does student required improvement?

* **Query Description:** You have been asked to create a query that returns list of subjects for particular student in which student needs improvement
* **Type:** Store procedure input student name , grade
* **Tables Involved:** FactStudentCourseGrade, FactStudentCourse, dimCourse
* **Result**: Procedure returns subjects in which student got ‘D’ grade and needs improvement.
* **Query**

create procedure spStudentSubjectNeedsImprovement

@studentname nvarchar(50),

@grade nvarchar(5)

as

begin

select distinct subj.SubjectName from

factStudentCourseGrade factgrade

inner join factStudentCourse factstd

on factgrade.StudentCourseID = factstd.StudentCourseID

inner join

dimStudent std

on factstd.StudentID = std.StudentID

inner join dimCourse course

on factstd.CourseID = course.CourseID

inner join dimSubject subj

on course.SubjectID = subj.SubjectID

where factstd.gradelevel = @grade and factgrade.AlphaGrade = 'D' and

std.StudentName = @studentname

end

exec spStudentSubjectNeedsImprovement 'Kevin Kelly', '09'

1. What is the performance level of student on basis of subject?

* **Query Description:** You have been asked to create a query that returns the performance of student out of 3 for each subject
* **Type:** Store procedure input student name
* **Tables Involved:** FactStandardizedTestScore, FactStandardizedTestDomainScore, dimSubject
* **Result**: Procedure returns list subjects and performance level of student.
* **Query**

create procedure spStudentSubjectPerformanceLevel

@studentname nvarchar(50),

@grade nvarchar(5)

as

begin

select distinct subj.SubjectName, factscore.PerformanceLevel ,std.StudentName from

factStandardizedTestScore factscore

inner join factStandardizedTestDomainScore factdomain

on factscore.StandardizedTestScoreID = factdomain.StandardizedTestScoreID

inner join

dimStudent std

on factscore.StudentID = std.StudentID

inner join dimSubject subj

on factscore.SubjectID = subj.SubjectID

where std.grade = @grade and

std.StudentName = @studentname

end

exec spStudentSubjectPerformanceLevel 'Nupur Agarwal', '09'

1. What is the scorecard of a student?

* **Query Description:** You have been asked to create a query that returns the scorecard of student for each grade
* **Type:** Store procedure input student id (Pivot table in store procedure)
* **Tables Involved: :** FactStudentCourseGrade, FactStudentCourse, dimSubject
* **Result**: Procedure returns a table consisting of marks of given student for each grade
* **Query**

CREATE PROCEDURE spStudentScoreCard

-- Add the parameters for the stored procedure here

@studentname nvarchar(50)

AS

BEGIN

select SubjectName, [09],[10],[11]

from(

select distinct subj.SubjectName,max(factgrade.AlphaGrade) AlphaGrade ,factstd.GradeLevel from

factStudentCourseGrade factgrade

inner join factStudentCourse factstd

on factgrade.StudentCourseID = factstd.StudentCourseID

inner join

dimStudent std

on factstd.StudentID = std.StudentID

inner join dimCourse course

on factstd.CourseID = course.CourseID

inner join dimSubject subj

on course.SubjectID = subj.SubjectID

where

std.StudentName = @studentname

group by subj.SubjectName, factstd.GradeLevel

) as sourcetable

pivot(max(AlphaGrade) for GradeLevel in ([09],[10],[11]) ) pivottable

end

exec spStudentScoreCard 'Andrew Rath'

### Special Programs

1. What are the special programs available in a facility?

* **Query Description:** You have been asked to create a query that returns the special programs available in a facility (FacilityID=2).
* **Type:** Select/InnerJoins (ProgramID)/Where
* **Tables Involved:** factSpecialProgram ,dimSpecialProgram, dimStudent, dimFacility
* **Result:** The result of this query would fetch all special programs available in a facility.
* **Query :**

select distinct sp.Program, s.FacilityID from factSpecialProgram f

join dimSpecialProgram sp

on f.ProgramID = sp.ProgramID

join dimStudent S

on f.StudentID = s.StudentID

where s.facilityID=2

1. Who is the Staff associated with particular facility teaching in GIFTED special program the student?

* **Query Description:** You have been asked to create a query that returns the staff assigned to GIFTED program
* **Type:** Select/InnerJoins (StudentID,StaffID,FacilityID)/Where (StudentID)
* **Tables Involved:** factSpecialProgram, dimStudent dimStaff ,dimFacility, dimSpecialProgram
* **Result:** The result of this query would fetch staffname along with facility name assigned to GIFTED special program
* **Query:**

select distinct (concat(st.StaffFirstName,' ',st.StaffLastName)) as StaffName, fa.FacilityName from factSpecialProgram f

join dimSpecialProgram sp

on f.ProgramID = sp.ProgramID

join dimStudent S

on f.StudentID = s.StudentID

join dimFacility fa

on s.FacilityID = fa.FacilityID

join dimStaff st

on s.HomeroomStaffID = st.StaffID

where sp.Program = 'GIFTED'