

## **Summary**

In this project we will be confirming students have applied for financial aid (FAFSA). There needs to be confirmation that they've applied to the correct aid year (2020-2021 or 2021-2022). We will need to make sure that their FAFSA lines up with the aid year that they are currently in. Some students accidentally apply for the wrong aid year. We want to make sure that the name and student details match in the school database, and on the FAFSA. In this first part, we will be defining the business rules, stakeholders, stakeholders, and providing a conceptual and logical model.

## **Stakeholders**

The stakeholders within this project are the university, student who has applied for financial aid, financial aid department, Department of Education. All of these various people and entities have vested interest in the right FAFSA being applied for. Making sure that the right FAFSA has been applied for, will make sure that their financial aid is processed in a timely manner, and disbursed.

## **Business Rules**

- A student has enrolled with the university.
- A FAFSA application is necessary.
- The correct aid year is required for processing.
- The personal information on the FAFSA and in the university database need to match.
- 2020-2021 FAFSA runs from July 2020-June 2021
- 2021-2022 FAFSA runs from July 2021-June 2022

## **Glossary**

**FAFSA**- Free application for Federal Student Aid

**Aid Year**- The school year the FAFSA coincides with.

**Processing**- Checking the information submitted on the FAFSA is correct.

**Financial Aid**- Loans and/or grants to help student pay for tuition upfront.

**Student**- Person attending school and applying for financial aid.

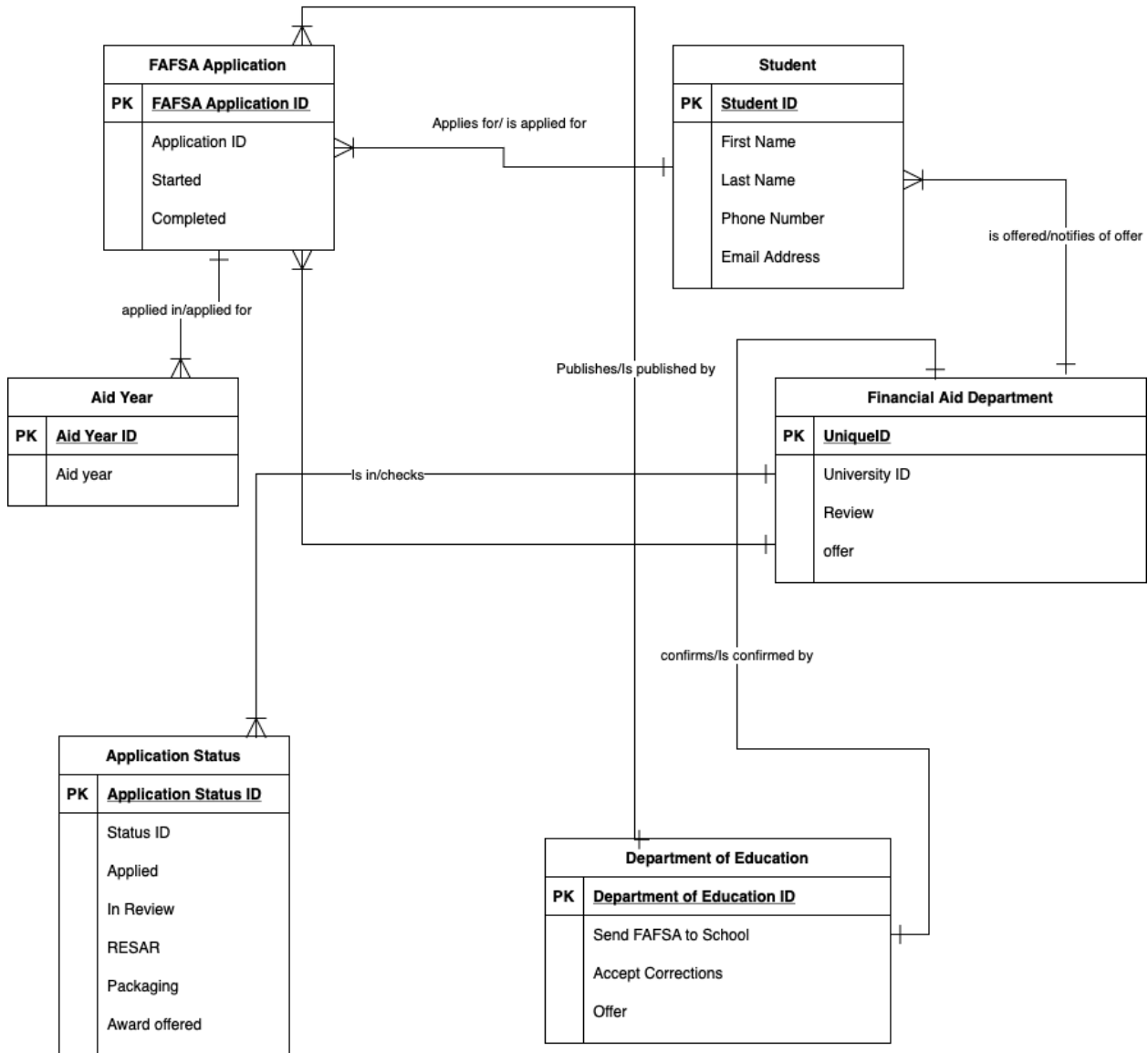
**Department of Education**- The department within the federal government which deals with FAFSA applications.

**University**- The school in which the student will be attending, and receiving the financial aid to help pay for.

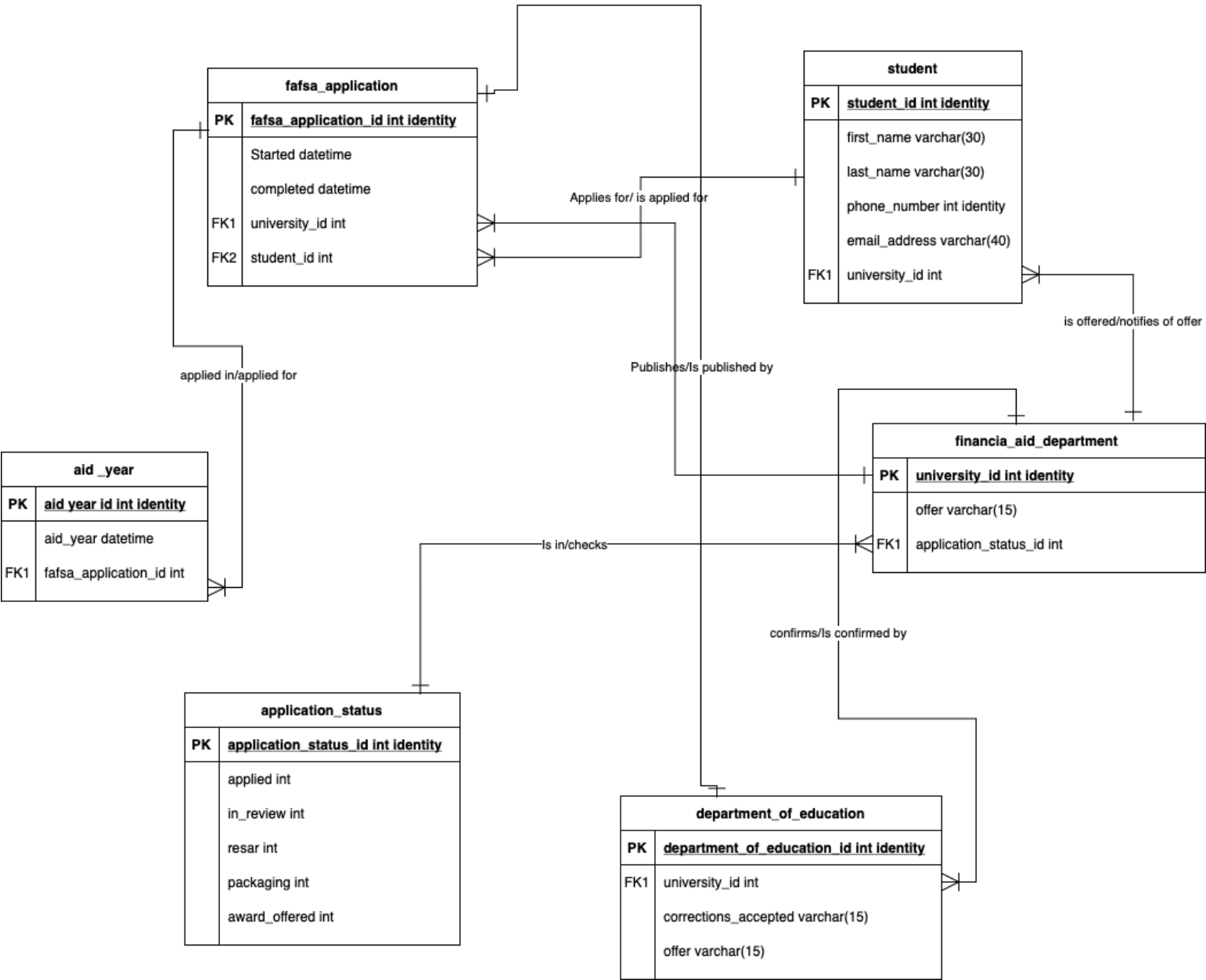
## **Data Questions**

- What is the average processing time for Financial Aid?
- What aid year has the student applied for?
- What aid year did the student apply for?

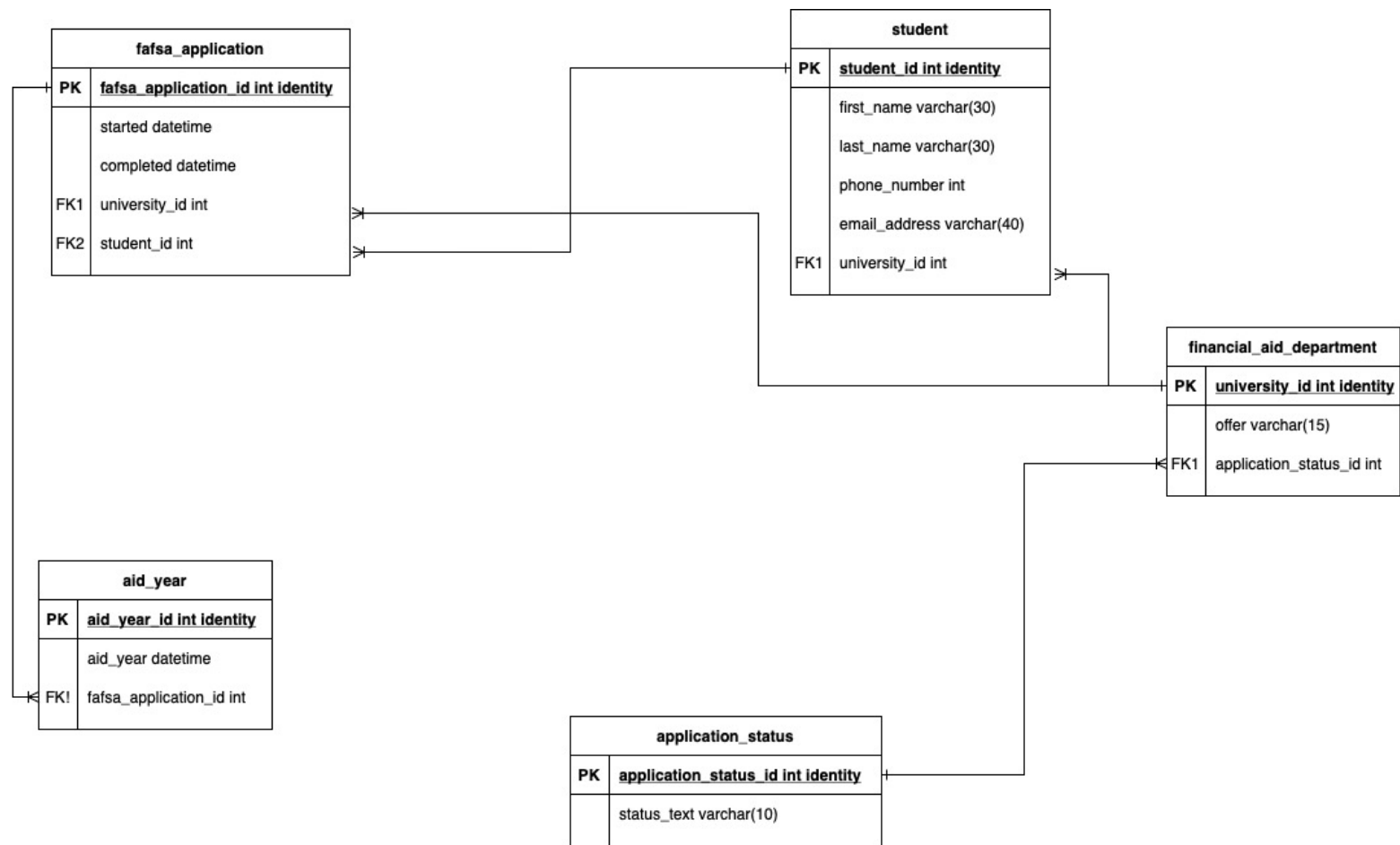
## Conceptual Model



Logical Model



Updated Logical Model



In the updated logical model I took out the Department of Education, and I simplified the application status table. There was metadata that shouldn't have been there in the precious version. I left the first version in this deliverable for reference.

## Create Tables

```
-- Creating Application Status table
create table fa_AppStatus (
    -- Columns for the Application Status table
    ApplicationStatusID int identity not null,
    StatusText varchar (10) not null,
-- Constraints on the Application Status table
constraint pk_fa_AppStatus primary key (ApplicationStatusID)
)
-- End creating the Application Status table

-- Creating Financial Aid Department table
create table fa_FinancialAidDept (
    -- Columns for the FinancialAaid Departmtnet table
```

```

    UniversityID int identity not null,
    Offer varchar(15) not null,
    ApplicationStatusID int not null,
-- Constraints on the Financial Aid Department table
constraint pk_fa_FinancialAidDept primary key (UniversityID),
constraint fk_fa_FinancialAidDept foreign key (ApplicationStatusID) references
fa_AppStatus(ApplicationStatusID)
)
-- End creating the Financial Aid Department table

```

```

-- Creating Student table
create table fa_Student (
    -- Columns for the Student table
    StudentID int identity not null,
    FirstName varchar(30) not null,
    LastName varchar (30) not null,
    PhoneNumber varchar (11) not null,
    EmailAddress varchar(40) not null,
    UniversityID int not null,
    -- Constraints on the Student table
    constraint pk_fa_Studnet primary key (StudentID),
    constraint fk_fa_Student foreign key (UniversityID) references
fa_FinancialAidDept(UniversityID)
)
-- End creating the Student table

```

```

--Creating FAFSA Application table

```

```

create table fa_FAFSAApplication (
    -- Columns for the FAFSA Application table
    FAFSAApplicationID int identity not null,
    Started datetime,

```

```

    Completed datetime,
    UniversityID int not null,
    StudentID int not null,
-- Constraints on the FAFSA Application table
constraint pk_fa_FAFSAApplication primary key (FAFSAAApplicationID),
constraint fk1_fa_FAFSAApplication foreign key (UniversityID) references
fa_FinancialAidDept(UniversityID),
constraint fk2_fa_FAFSAApplication foreign key (StudentID) references
fa_Student(StudentID)
)

--End creating FAFSA Application table

-- Creatin Aid Year table

create table fa_AidYear (
    -- Columns for Aid Year table
    AidYearID int identity not null,
    AidYear datetime,
    FAFSAAApplicationID int not null,
    --Constraints on the FAFSA Application table
    constraint pk_fa_AidYear primary key (AidYearID),
    constraint fk_fa_AidYear foreign key (FAFSAAApplicationID) references
fa_FAFSAApplication(FAFSAAApplicationID)
)

--End creating Aid Year table

```



## Insert Statements

-- Inserting into Application Status table

```
insert into fa_AppStatus (Status Text) values ('Approved');  
insert into fa_AppStatus (Status Text) values ('Approved');  
insert into fa_AppStatus (Status Text) values ('Approved');  
insert into fa_AppStatus (Status Text) values ('Review');  
insert into fa_AppStatus (Status Text) values ('Denied');
```

-- Inserting into Financial Aid Department table

```
insert into fa_FinancialAidDept (UniversityID, Offer, ApplicationStatusID) values  
('143174','yes', '11');  
    insert into fa_FinancialAidDept (UniversityID, Offer, ApplicationStatusID) values  
('135617','yes', '12');
```

```

insert into fa_FinancialAidDept (UniversityID, Offer, ApplicationStatusID) values
('255617','yes', '13');
insert into fa_FinancialAidDept (UniversityID, Offer, ApplicationStatusID) values
('435617','no', '14');
insert into fa_FinancialAidDept (UniversityID, Offer, ApplicationStatusID) values
('373174','no', '15');

```

-- Inserting data into Student table

```

insert into fa_Student (Firstname, LastName, PhoneNumber, EmailAddress, UniversityID)
values ('Torrin', 'Robertsen', '9249255581', 'trobertsen0@webs.com', '3174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress,UniversityID )
values ( 'Rhonda', 'Koba', '6932774806', 'rkoba1@wufoo.com', '5617');
insert into fa_Student (Firstname, LastName, PhoneNumber, EmailAddress,
UniversityID)
values ( 'Danice', 'Rontree', '6789341154', 'drontree2@netvibes.com', '115617');
insert into fa_Student (Firstname, LastName, PhoneNumber, EmailAddress,
UniversityID)
values ( 'Alistair', 'Dispenser', '5768129799', 'adespenser3@google.com', '135617');

```

-- Inserting data into FAFSA application table

```

insert into fa_FAFSAApplication (Started, Completed, UniversityID, StudentID) values
('9/2/2020', '9/3/2020', 3174, 130);
insert into fa_FAFSAApplication (Started, Completed, UniversityID, StudentID)
values ('6/9/2020', '7/8/2020', 5617, 132);
insert into fa_FAFSAApplication (Started, Completed, UniversityID, StudentID)
values ('2/15/2020', '6/30/2020', 115617, 133);
insert into fa_FAFSAApplication (Started, Completed, UniversityID, StudentID)
values ('12/14/2020', '6/4/2021', 135617, 134);
insert into fa_FAFSAApplication (Started, Completed, UniversityID, StudentID)
values ('12/5/2020', '1/18/2021', 143174, 135);

```

-- Inserting data into Aid Year table

```

insert into fa_AidYear (AidYear, FAFSAApplicationID) values ('9/3/2020', 41);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values ('7/8/2020', 42);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values ('6/30/2020', 43);

```

```
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values ('6/4/2021', 44);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values ('1/18/2021', 45);
```

## SQL Select Statements

```
library(odbc)
```

```
# Create a connection to SQL Server using ODBC
```

```
# NOTE: Be sure to change the database to your actual database
```

```
myconn <- DBI::dbConnect(odbc::odbc(),
                        Driver      = "SQL Server Native Client 11.0",
                        Server      = "dblab.ischool.syr.edu",
                        Database     = "IST659_M408_jrbiggsb",
                        Trusted_Connection = "Yes"
)
```

```
# Ready the SQL to send to the Server
```

```
sqlSelectStatement <-
```

```
" select (datediff(day, Started, Completed)) as Processingtime
from fa_FAFSAAApplication"
```

```
sqlResult <-dbGetQuery(myconn, sqlSelectStatement)
```

```
hist(sqlResult$Processingtime,
```

```
    main="ProcessingTime",
```

```
    xlab="Days",
```

```
    ylab="yaxis",
```

```
    border="blue",
```

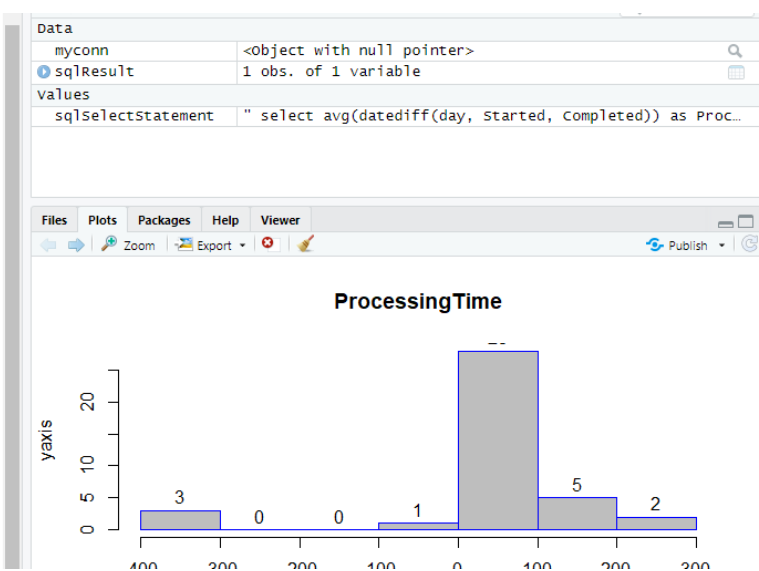
```
    col="grey",
```

```
    labels = TRUE)
```

```

3 # Create a connection to SQL Server using ODBC
4 # NOTE: Be sure to change the database to your actual database
5 myconn <- DBI::dbConnect(odbc::odbc(),
6                           driver      = "SQL Server Native Client 11.0",
7                           server      = "dblab.ischool.syr.edu",
8                           database    = "IST659_M408_jrbiggsb",
9                           trusted_connection = "Yes"
10 )
11
12 # Ready the SQL to send to the Server
13 sqlselectstatement <-
14   " select (datediff(day, Started, Completed)) as ProcessingTime
15   from fa_FAFSAApplication"
16
17 sqlResult <- dbGetQuery(myconn, sqlselectstatement)
18 hist(sqlResult$ProcessingTime,
19      main="ProcessingTime",
20      xlab="Days",
21      ylab="yaxis",
22      border="blue",
23      col="grey",
24      labels = TRUE)

```



```

34
35 =SELECT fa_Student.StudentID, fa_FAFSAApplication.UniversityID, fa_FAFSAApplication.Completed
36 FROM fa_Student
37 RIGHT JOIN fa_FAFSAApplication ON fa_Student.StudentID = fa_FAFSAApplication.StudentID
38 ORDER BY fa_Student.StudentID;

```

82 %

Results Messages

	StudentID	UniversityID	Completed
1	130	3174	2020-09-03 00:00:00.000
2	132	5617	2020-07-08 00:00:00.000
3	133	115617	2020-06-30 00:00:00.000
4	134	135617	2021-06-04 00:00:00.000
5	135	143174	2021-01-18 00:00:00.000

```

10
11 =select * from fa_AidYear
12 where AidYear between '1/1/2010' and '12/31/2021'
13
14

```

## Views

```
10
11 create view Aid_Year2020 as
12 select * from fa_AidYear
13 where AidYear between '5/2/2020' and '12/31/2020'
14
15 create view Aid_Year2021 as
16 select * from fa_AidYear
17 where AidYear between '1/1/2021' and '12/31/2021'
18
19
```

! %

### Messages

Commands completed successfully.

Completion time: 2021-06-23T01:26:59.7308604-04:00

```
10
11 create view Aid_Year2020 as
12 select * from fa_AidYear
13 where AidYear between '5/1/2020' and '12/31/2020'
14
15 create view Aid_Year2021 as
16 select * from fa_AidYear
17 where AidYear between '1/1/2021' and '12/31/2021'
18
19
```

82 %

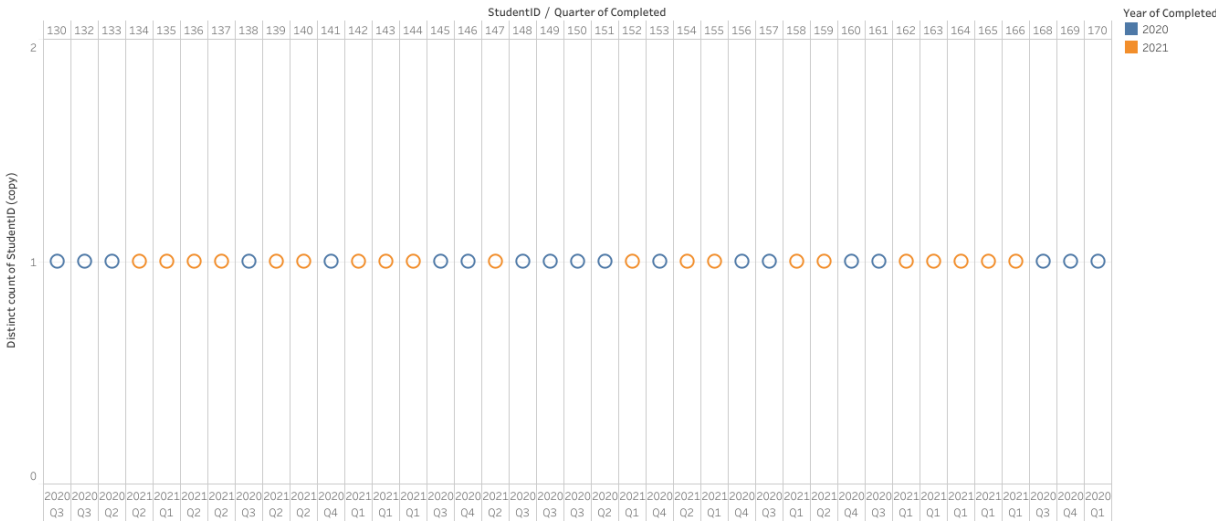
### Messages

Commands completed successfully.

Completion time: 2021-06-23T01:25:40.8007864-04:00

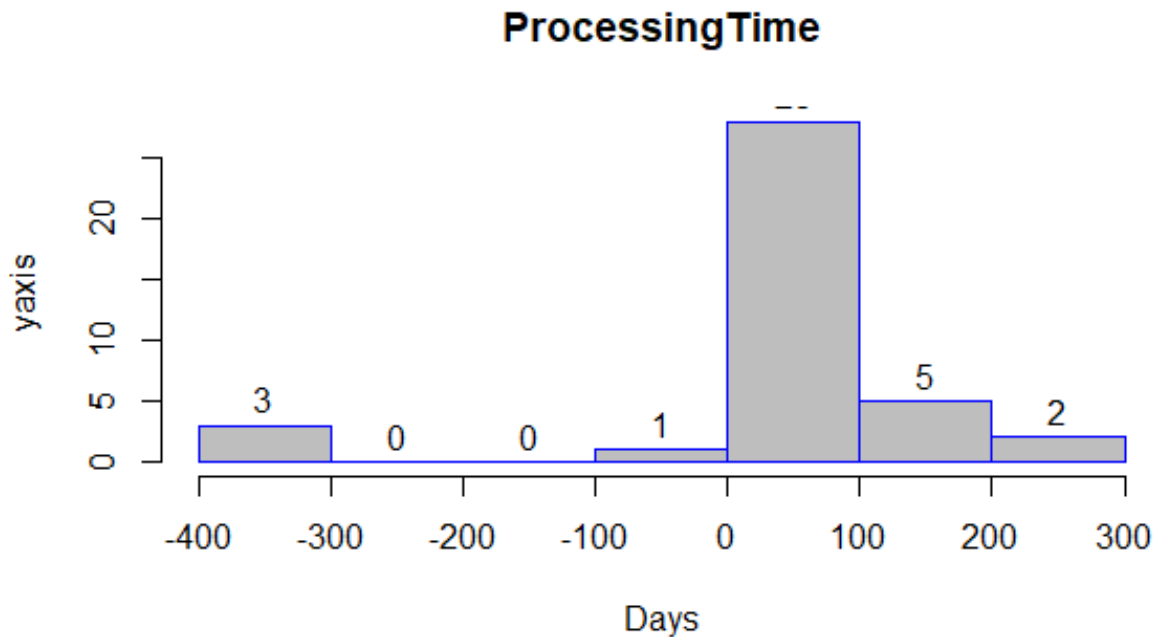
UI/UX

Aid Year Student Applied for



[https://public.tableau.com/views/AidYearStudentAppliedfor/Sheet1?:language=en-US&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/AidYearStudentAppliedfor/Sheet1?:language=en-US&:display_count=n&:origin=viz_share_link)

```
SELECT fa_Student.StudentID, fa_FAFSAAApplication.UniversityID,  
fa_FAFSAAApplication.Completed  
FROM fa_Student  
RIGHT JOIN fa_FAFSAAApplication ON fa_Student.StudentID =  
fa_FAFSAAApplication.StudentID  
ORDER BY fa_Student.StudentID;
```



```
library(odbc)
```

[illegible]

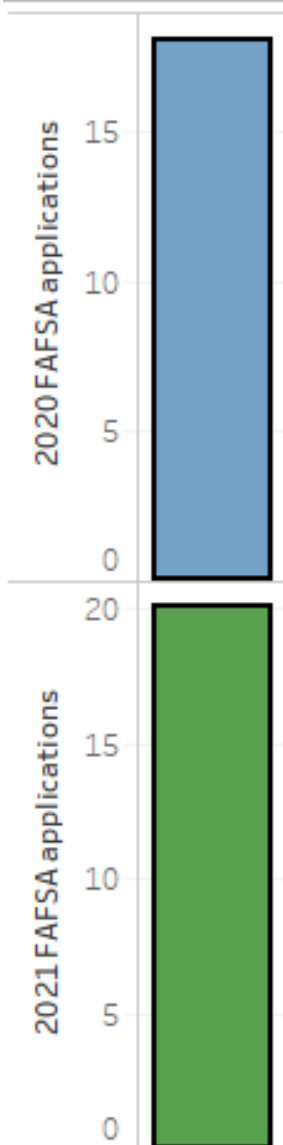
```
        Trusted_Connection = "Yes"
    )

# Ready the SQL to send to the Server
sqlSelectStatement <-
    " select (datediff(day, Started, Completed)) as Processingtime
    from fa_FAFSAAApplication"

sqlResult <-dbGetQuery(myconn, sqlSelectStatement)
hist(sqlResult$Processingtime,
     main="ProcessingTime",
     xlab="Days",
     ylab="yaxis",
     border="blue",
     col="grey",
     labels = TRUE)
```



## Number of FAFSA applications per Aid Year



[https://public.tableau.com/views/NumberofFAFSAApplicationperAidYear/Sheet1?:language=en-US&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/NumberofFAFSAApplicationperAidYear/Sheet1?:language=en-US&:display_count=n&:origin=viz_share_link)

```
select * from fa_AidYear
where AidYear between '1/1/2021' and '12/31/2021'
```

```
select * from fa_AidYear
where AidYear between '5/1/2020' and '12/31/2020'
```

#### SQL code

```
-- Creating Application Status table
create table fa_AppStatus (
    -- Columns for the Application Status table
    ApplicationStatusID int identity not null,
    StatusText varchar (10) not null,
    -- Constraints on the Application Status table
    constraint pk_fa_AppStatus primary key (ApplicationStatusID)
)
-- End creating the Application Status table

-- Creating Financial Aid Department table
create table fa_FinancialAidDept (
    -- Columns for the FinancialAid Department table
    UniversityID int identity not null,
    Offer varchar(15) not null,
    ApplicationStatusID int not null,
    -- Constraints on the Financial Aid Department table
    constraint pk_fa_FinancialAidDept primary key (UniversityID),
```

```
constraint fk_fa_FinancialAidDept foreign key (ApplicationStatusID)
references fa_AppStatus(ApplicationStatusID)
)
```

```
-- End creating the Financial Aid Department table
```

```
-- Creating Student table
```

```
create table fa_Student (
    -- Columns for the Student table
    StudentID int identity not null,
    FirstName varchar(30) not null,
    LastName varchar (30) not null,
    PhoneNumber varchar (11) not null,
    EmailAddress varchar(40) not null,
    UniversityID int not null,
    -- Constraints on the Student table
    constraint pk_fa_Student primary key (StudentID),
    constraint fk_fa_Student foreign key (UniversityID) references
fa_FinancialAidDept(UniversityID)
)
```

```
-- End creating the Student table
```

```
--Creating FAFSA Application table
```

```
create table fa_FAFSAApplication (
    -- Columns for the FAFSA Application table
    FAFSAApplicationID int identity not null,
    Started datetime,
    Completed datetime,
    UniversityID int not null,
    StudentID int not null,
```

```
-- Constraints on the FAFSA Application table
constraint pk_fa_FAFSAApplication primary key (FAFSAAApplicationID),
constraint fk1_fa_FAFSAApplication foreign key (UniversityID)
references fa_FinancialAidDept(UniversityID),
constraint fk2_fa_FAFSAApplication foreign key (StudentID) references
fa_Student(StudentID)
)
```

```
--End creating FAFSA Application table
```

```
-- Creatin Aid Year table
```

```
create table fa_AidYear (
    -- Columns for Aid Year table
    AidYearID int identity not null,
    AidYear datetime,
    FAFSAApplicationID int not null,
    --Constraints on the FAFSA Application table
    constraint pk_fa_AidYear primary key (AidYearID),
    constraint fk_fa_AidYear foreign key (FAFSAAApplicationID)
references fa_FAFSAApplication(FAFSAAApplicationID)
)
```

```
--End creating Aid Year table
```

```
-- Inserting into the Application Status table
```

```
insert into fa_AppStatus (Status Text) values ('Approved');
insert into fa_AppStatus (Status Text) values ('Approved');
insert into fa_AppStatus (Status Text) values ('Approved');
insert into fa_AppStatus (Status Text) values ('Review');
insert into fa_AppStatus (Status Text) values ('Denied');
```

-- Inserting into Financial Aid Department table

set identity\_insert fa\_FinancialAidDept on

```
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('143174','yes', '11');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('135617','yes', '12');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('255617','yes', '13');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('435617','no', '14');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('373174','no', '15');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('643174','yes', '16');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('345617','yes', '17');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('163174','no', '18');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('975617','no', '19');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('283174','yes', '20');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('405617','yes', '21');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('265617','no', '22');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('653174','no', '23');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('633174','yes', '24');
```

```
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('753174','yes', '25');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('455617','no', '26');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('685617','no', '27');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('465617','yes', '28');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('713174','yes', '29');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('523174','no', '30');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('513174','no', '31');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('643174','yes', '32');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('343174','yes', '33');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('395617','no', '34');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('313174','no', '35');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('325617','no', '36');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('863174','no', '37');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('327174','yes', '38');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('353174','yes', '39');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('553174','yes', '40');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('223174','yes', '41');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('333174','yes', '42');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('115617','yes', '43');
```

```

insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('665617','yes', '44');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('993174','yes', '45');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('883174','yes', '46');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('773174','yes', '47');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('445617','yes', '48');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('565617','no', '49');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('313174','no', '50');
insert into fa_FinancialAidDept (UniversityID, Offer,
ApplicationStatusID) values ('903174','no', '51');

```

```

set identity_insert fa_FinancialAidDept off

```

```

-- End inserting data Financial Aid Department table

```

```

-- Inserting data into Student table

```

```

set identity_insert fa_Student on

```

```

insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ('Torrin', 'Robertson', '9249255581',
'trobertsen0@webs.com', '3174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID )
values ( 'Rhonda', 'Koba', '6932774806',
'rkoba1@wufoo.com', '5617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Danice', 'Rontree', '6789341154',
'drontree2@netvibes.com', '115617');

```

```

insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Alistair', 'Dispenser', '5768129799',
'adespenser3@google.com', '135617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Aldo', 'Tendahl', '8154597623',
'atendahl4@ocn.ne.jp', '143174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Bartholomeus', 'Gokes', '7311011875',
'bgokes5@netlog.com', '163174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Elly', 'MacCaughey', '4845492791',
'emaccaughey6@nbcnews.com', '223174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Keriann', 'Matejka', '4581903449',
'kmatejka7@yelp.com', '255617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Anastasie', 'Farraway', '5479516660',
'afarraway8@zdnnet.com', '265617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Corabelle', 'Jephcote', '2851605925',
'cjephcote9@wired.com', '283174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Rudd', 'Butchers', '8524797906',
'rbutchersa@addtoany.com', '313174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Yettie', 'Ornelas', '2366497126',
'yornelasb@huffingtonpost.com', '325617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)

```



```

        values ( 'Miguel', 'Capell', '7412485292',
'mcapellc@oracle.com', '327174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Kimball', 'Pumphrey', '8516156398',
'kpumphreyd@sciencedaily.com', '333174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Katrina', 'Ellins', '5599348932',
'kellinse@devhub.com', '343174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Cosetta', 'Attride', '5719674602',
'cattrydef@noaa.gov', '345617');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Kasey', 'Amiranda', '2936813124',
'kamirandag@eventbrite.com', '353174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Margot', 'Owthwaite', '4586990498',
'mowthwaiteh@apple.com', '373174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Roland', 'Pontefract', '9374474381',
'rpontefracti@economist.com', '395617');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Demott', 'Siely', '6682552161',
'dsielyj@prnewswire.com', '405617');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Bernardina', 'Pareman', '4287200225',
'bparemank@narod.ru', '435617');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Otes', 'Bernardo', '8977278557',
'obernardol@umich.edu', '445617');

```

```

insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Kassie', 'Becke', '1757505844',
'kbeckem@bing.com', '455617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Ninnette', 'Teeney', '6279457818',
'nteeneyn@fema.gov', '465617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Sascha', 'Pillington', '3144492793',
'spillingtono@patch.com', '513174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Myrtie', 'Ellacombe', '3394099836',
'mellacombeb@weather.com', '523174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Gail', 'Hearnshaw', '1425557793',
'ghearnshawq@chron.com', '553174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Jase', 'Farden', '3565091530',
'jfardenr@myspace.com', '565617');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Normy', 'Carlet', '7248101257', 'ncarlets@aol.com',
'633174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Rodd', 'Earthfield', '1051561968',
'rearthfieldt@nba.com', '643174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
values ( 'Lothario', 'Bussey', '2028207232',
'lbusseyu@google.fr', '653174');
insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)

```

```

        values ( 'Osbourne', 'Candy', '5271221733',
'ocandyv@google.co.uk', '665617');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Angus', 'Eilert', '6605344055',
'aeilertw@reddit.com', '685617');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Valeria', 'Rhead', '6613958734',
'vrheadx@examiner.com', '713174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Crichton', 'Lorraway', '3928388471',
'clorraway@amazon.de', '753174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Efrem', 'Agius', '7429894591',
'eagiusz@berkeley.edu', '773174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Cordi', 'Corro', '7005570774',
'ccorro10@mozilla.com', '863174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Reilly', 'Besse', '2122728634',
'rbesse11@vkontakte.ru', '883174');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Lynette', 'Najera', '5231309042',
'lnajera12@cnbc.com', '975617');
        insert into fa_Student (Firstname, LastName, PhoneNumber,
EmailAddress, UniversityID)
        values ( 'Minni', 'Khomin', '3626163821',
'mkhomin13@uol.com.br', '993174');

```

```

--End inserting data into Student table

```

```

-- Inserting data into FAFSA application table

```

```

insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/2/2020', '9/3/2020', 3174, 130);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('6/9/2020', '7/8/2020', 5617, 132);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('2/15/2020', '6/30/2020', 115617, 133);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('12/14/2020', '6/4/2021', 135617, 134);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('12/5/2020', '1/18/2021', 143174, 135);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('12/20/2020', '5/2/2021', 163174, 136);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('4/14/2021', '4/25/2021', 223174, 137);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('8/16/2020', '8/23/2020', 255617, 138);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/11/2020', '5/2/2021', 265617, 139);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('1/13/2021', '5/19/2021', 283174, 140);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('11/7/2021', '11/18/2020', 313174, 141);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('11/6/2020', '1/19/2021', 325617, 142);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('7/15/2020', '3/8/2021', 327174, 143);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('11/9/2020', '1/22/2021', 333174, 144);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('7/5/2020', '9/7/2020', 343174, 145);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('10/28/2020', '11/1/2020', 345617,
146);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('3/21/2021', '6/10/2021', 353174, 147);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('8/20/2020', '8/12/2020', 373174, 148);

```

```

insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/5/2020', '9/17/2020', 395617, 149);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('8/14/2020', '9/7/2020', 405617, 150);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('7/9/2021', '6/16/2020', 435617, 151);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('1/20/2021', '1/24/2021', 445617, 152);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('11/28/2020', '12/2/2020', 455617,
153);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('11/29/2020', '5/21/2021', 465617,
154);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('2/3/2021', '2/14/2021', 513174, 155);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/2/2020', '11/14/2020', 523174, 156);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/14/2020', '9/23/2020', 553174, 157);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('2/18/2021', '2/20/2021', 565617, 158);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('4/22/2021', '4/27/2021', 633174, 159);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('10/1/2020', '10/30/2020', 643174,
160);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/1/2020', '9/4/2020', 653174, 161);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('2/19/2021', '3/16/2021', 665617, 162);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('2/8/2021', '2/10/2021', 685617, 163);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('3/4/2021', '3/12/2021', 713174, 164);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('3/12/2021', '3/24/2021', 753174, 165);

```

```
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('3/14/2021', '3/19/2021', 773174, 166);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/28/2020', '10/31/2020', 86174, 167);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('9/3/2020', '9/16/2020', 883174, 168);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('12/2/2020', '12/4/2020', 975617, 169);
insert into fa_FAFSAApplication (Started, Completed,
UniversityID, StudentID) values ('3/25/2021', '3/29/2020', 993174, 170);
```

```
-- End inserting data into FAFSA Application table
```

```
-- Inserting data into Aid Year table
```

```
set identity_insert fa_AidYear off
```

```
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('9/3/2020', 41);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('7/8/2020', 42);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('6/30/2020', 43);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('6/4/2021', 44);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('1/18/2021', 45);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('5/2/2021', 46);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('4/25/2021', 47);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('8/23/2020', 48);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('5/2/2021', 49);
insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('5/19/2021', 50);
```



```
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('11/18/2020', 51);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('1/19/2021', 52);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('3/8/2021', 53);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('1/22/2021', 54);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('9/7/2020', 55);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('11/1/2020', 56);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('6/10/2021', 57);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('8/12/2020', 58);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('9/17/2020', 59);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('9/7/2020', 60);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('6/16/2020', 61);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('1/24/2021', 62);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('12/2/2020', 63);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('5/21/2021', 64);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('2/14/2021', 65);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('11/14/2020', 66);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('9/23/2020', 67);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('2/20/2021', 68);
insert into fa_AidYear (AidYear, FAFSAAApplicationID) values
('4/27/2021', 69);
```

```

        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('10/30/2020', 70);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('9/4/2020', 71);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('3/16/2021', 72);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('2/10/2021', 73);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('3/12/2021', 74);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('3/24/2021', 75);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('3/19/2021', 76);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('10/31/2020', 77);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('9/16/2020', 78);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('12/4/2020', 79);
        insert into fa_AidYear (AidYear, FAFSAApplicationID) values
('3/29/2020', 80);

```

-- End Inserting Data into Aid Year table

```

        SELECT fa_Student.StudentID,
fa_FAFSAApplication.UniversityID, fa_FAFSAApplication.Completed
FROM fa_Student
RIGHT JOIN fa_FAFSAApplication ON fa_Student.StudentID =
fa_FAFSAApplication.StudentID
ORDER BY fa_Student.StudentID;

```

create view Aid\_Year20 as



```
select * from fa_AidYear
where AidYear between '5/2/2020' and '12/31/2020'
```

```
create view Aid_Year2021 as
select * from fa_AidYear
where AidYear between '1/1/2021' and '12/31/2021'
```

#### **R code**

```
library(odbc)

# Create a connection to SQL Server using ODBC
# NOTE: Be sure to change the database to your actual database
myconn <- DBI::dbConnect(odbc::odbc(),
                        Driver      = "SQL Server Native Client 11.0",
                        Server      = "dblab.ischool.syr.edu",
                        Database     = "IST659_M408_jrbiggsb",
                        Trusted_Connection = "Yes"
)

# Ready the SQL to send to the Server
sqlSelectStatement <-
  " select (datediff(day, Started, Completed)) as Processingtime
  from fa_FAFSAApplication"

sqlResult <- dbGetQuery(myconn, sqlSelectStatement)
hist(sqlResult$Processingtime,
     main="ProcessingTime",
     xlab="Days",
```

```
ylab="yaxis",  
border="blue",  
col="grey",  
labels = TRUE)  
DBI::dbDisconnect(myconn)
```

## **Reflection**

I feel like I would have a clearer picture going in next time. I would make sure not to think about how ambitious I want to be. I feel that I expected that it would be easier since I know the financial aid space. This was not the case; I feel that maybe I should have chosen something that is more straightforward. Although, I think the over-ambition helped me to know how that can turn out in the future. Making sure the database is not any more complicated than it needs to be is the best practice. I think being in a space where I feel comfortable adding would be better than having to cut and try to figure out how to make my life easier. I do appreciate what I learned in the course, and I feel like I will be able to use it in my job in the near future.