

For our project, we assumed that the client does not input any incorrect values for the queries. We dealt with error handling by including “WHERE NOT EXISTS” clauses in our queries so that the values would not be added if the subquery was false.

For queries 5-8 which had results outputted, here are our screenshots to show that they are functioning correctly:

Query 5:

```

MAIN MENU
-----
1. Add Doctor
2. Add Patient
3. Add Appointment
4. Make an Appointment
5. List appointments of a given doctor
6. List all available appointments of a given department
7. List total number of different types of appointments per doctor in descending order
8. Find total number of patients per doctor with a given status
9. < EXIT
Please make your choice: 5
    Doctor ID: 26
    Date 1: 1/1/2020
    Date 2: 1/1/2022
doctor_id  appnt_id  status
26         9        AV
    
```

Query 6:

```

MAIN MENU
-----
1. Add Doctor
2. Add Patient
3. Add Appointment
4. Make an Appointment
5. List appointments of a given doctor
6. List all available appointments of a given department
7. List total number of different types of appointments per doctor in descending order
8. Find total number of patients per doctor with a given status
9. < EXIT
Please make your choice: 6
    Department name: Dermatology
    Appointment date: 8/16/2021
name  adate  appnt_id  time_slot
Kent Cole    2021-08-16    9    10:00-15:00
    
```

Query 7:

```

MAIN MENU
-----
1. Add Doctor
2. Add Patient
3. Add Appointment
4. Make an Appointment
5. List appointments of a given doctor
6. List all available appointments of a given department
7. List total number of different types of appointments per doctor in descending order
8. Find total number of patients per doctor with a given status
9. < EXIT
Please make your choice: 7
name  status  count
Rita Brock    PA    2
Kent Cole    PA    2
Phillip Wilson PA    2
Adrian Garrett PA    2
Yvette Lane    PA    2
Gertrude Warren WL    1
Antoinette Rodriguez PA    1
Heather Perez PA    1
Timothy Jones PA    1
Lynn Rose    PA    1
Myron Gibson PA    1
Rosemary Pena PA    1
Paul Harris    PA    1
Theodore Stewart PA    1
Rufus Lloyd    PA    1
Kim West    WL    1
Lona Burchett PA    1
Etta Rosen    AC    1
Rossana Staton AV    1
Rita Brock    AC    1
Gabriel Taylor PA    1
Alvin Saunders PA    1
Edwin Lynch    PA    1
Stephanie Thompson PA    1
Clara Rowe    PA    1
Amy Diaz    AV    1
Martin Bryant AC    1
Sophia Fields AV    1
Tiffany Mills PA    1
Kevin Robertson PA    1
Calvin Morrison PA    1
Judy Morris    PA    1
Benny Terry    PA    1
Jenny Jackson PA    1
Edgar Copeland AC    1
Josefina Neal    PA    1
Randy Schultz AC    1
Kelly Bailey    PA    1
Jonathan Lee    PA    1
Palmer Peralta PA    1
Myrl Aguiar    AV    1
Etta Rosen    AV    1
Becky Horton    PA    1
Milton Fletcher PA    1
Norma Smith    PA    1
Olga Guerrero    AC    1
Gloria Cox    PA    1
Douglas Gonzalez WL    1
Dexter Johnson AC    1
Rosemary Pena    WL    1
Fredrick Smith WL    1
Billie Carpenter PA    1
Gertrude Warren PA    1
Nilza Cavanaugh PA    1
Rosemary Pena    AC    1
Kristopher King PA    1
Bradley Holmes PA    1
Steven Richardson AV    1
Mildred James    PA    1
Larry Russell    PA    1
Emiko Braun    PA    1
Irvin Kennedy    PA    1
Kent Cole    AV    1
Collin Williams PA    1
Asuncion Looney PA    1
Rick Ruiz    PA    1
Patricia Brady    AC    1
Lillie Rogers    PA    1
Adriana Wooden    PA    1
Noah Hansen    PA    1
Randy Bell    PA    1
Elizabeth Hernandez PA    1
Paul Harris    AC    1
Jacqueline Simmons PA    1
Joella Estrella AC    1
Deayne Delgado PA    1
Tiffany Mills    WL    1
Kenny Hall    AV    1
Kenneth Rodriguez AV    1
Clara Rowe    WL    1
Ashley Ramirez    PA    1
Kathi Wimberly    AC    1
Kristy Keller    AC    1
Ruby Hill    PA    1
Diane Davidson    PA    1
Gloria Cox    AC    1
Dannette Whitley PA    1
    
```

Steven Richardson	AV	1
Mildred James	PA	1
Larry Russell	PA	1
Emiko Braun	PA	1
Irvin Kennedy	PA	1
Kent Cole	AV	1
Colin Williams	PA	1
Asuncion Looney	PA	1
Kirk Ruiz	PA	1
Patricia Brady	AC	1
Lillie Rogers	PA	1
Adriana Wooden	PA	1
Noah Hansen	PA	1
Randy Bell	PA	1
Elizabeth Hernandez	PA	1
Paul Harris	AC	1
Jacqueline Simmons	PA	1
Joella Estrella	AC	1
Dwayne Delgado	PA	1
Tiffany Mills	WL	1
Kenny Hall	AV	1
Kenneth Rodriguez	AV	1
Clara Rowe	WL	1
Ashley Ramirez	PA	1
Kathi Wimberly	AC	1
Kristy Keller	AC	1
Ruby Hill	PA	1
Diane Davidson	PA	1
Gloria Cox	AC	1
Dannette Whitley	PA	1
Brian Flores	PA	1
Christina Wilson	AV	1
Shaun O'Brien	PA	1
Benjamin Nelson	PA	1
Beatrice Myers	WL	1
Wayne Robinson	AV	1
Derek Andrews	WL	1
Damon Baldwin	PA	1

Query 8:

MAIN MENU		
1. Add Doctor		
2. Add Patient		
3. Add Appointment		
4. Make an Appointment		
5. List appointments of a given doctor		
6. List all available appointments of a given department		
7. List total number of different types of appointments per doctor in descending order		
8. Find total number of patients per doctor with a given status		
9. < EXIT		
Please make your choice: 8		
Status: AV		
name	count	
Olga Guerrero	25	
Kirk Ruiz	25	
Rufus Lloyd	25	
Rita Brock	75	
Ruby Hill	25	
Diane Davidson	25	
Kenny Hall	25	
Kenneth Rodriguez	25	
Paul Harris	50	
Emiko Braun	25	
Edwin Lynch	25	
Ray Diaz	25	
Theodore Stewart	25	
Irvin Kennedy	25	
Wette Lane	50	
Kelly Bailey	25	
Phillip Wilson	50	
Shaun O'Brien	25	
Douglas Gonzalez	25	
Sophia Fields	25	
Colin Williams	25	
Asuncion Looney	25	
Jonathan Lee	25	
Adriana Wooden	25	
Kristy Keller	25	
Edgar Copeland	25	
Kent Cole	75	
Joella Estrella	25	
Palmer Peralta	25	
Adrian Garrett	50	
Dwayne Delgado	25	
Stephanie Thompson	25	
Billie Carpenter	25	
Gertrude Warren	50	
Lona Burchett	25	
Wayne Robinson	25	

Nilsa Cavanaugh	25
Kathi Wimberly	25
Lillie Rogers	25
Clara Rowe	50
Kristopher King	25
Dannette Whitley	25
Milton Fletcher	25
Norma Smith	25
Kevin Roberson	25
Brian Flores	25
Gabriel Taylor	25
Bradley Holmes	25
Ashley Ramirez	25
Heather Perez	25
Calvin Morrison	25
Damon Baldwin	25
Noah Hansen	25
Kim West	25
Derek Andrews	25
Randy Bell	25
Randy Schultz	25
Becky Horton	25
Elizabeth Hernandez	25
Dexter Johnson	25
Antoinette Rodriguez	25
Tiffany Mills	50
Benny Terry	25
Rossana Staton	25
Judy Morris	25
Martin Bryant	25
Beatrice Myers	25
Jenny Jackson	25
Etta Rosen	50
Myrl Aguiar	25
Rosemary Pena	75
Fredrick Smith	25
Josefina Neal	25
Benjamin Nelson	25
Timothy Jones	25
Jacqueline Simmons	25
Mildred James	25
Patricia Brady	25
Gloria Cox	50
Christina Wilson	25
Steven Richardson	25
Lynn Rose	25
Larry Russell	25
Alvin Saunders	25
Myron Gibson	25

Bradley Holmes	25
Ashley Ramirez	25
Heather Perez	25
Calvin Morrison	25
Damon Baldwin	25
Noah Hansen	25
Kim West	25
Derek Andrews	25
Randy Bell	25
Randy Schultz	25
Becky Horton	25
Elizabeth Hernandez	25
Dexter Johnson	25
Antoinette Rodriguez	25
Tiffany Mills	50
Benny Terry	25
Rossana Staton	25
Judy Morris	25
Martin Bryant	25
Beatrice Myers	25
Jenny Jackson	25
Etta Rosen	50
Myrl Aguiar	25
Rosemary Pena	75
Fredrick Smith	25
Josefina Neal	25
Benjamin Nelson	25
Timothy Jones	25
Jacqueline Simmons	25
Mildred James	25
Patricia Brady	25
Gloria Cox	50
Christina Wilson	25
Steven Richardson	25
Lynn Rose	25
Larry Russell	25
Alvin Saunders	25
Myron Gibson	25

We created indexes for doctor ID, patient ID, appointment ID, and status from the Appointment table. We thought creating indexes for the ID's would be useful since all of the queries use the ID's to search through the tables and it would be faster to find the ID's if they were sorted. We

also created an index for the status because it was a highly used attribute and it would be faster to search for certain status types for the appointments.

For contributions, both Allan and I (Kristie) worked on the queries evenly. Allan tested the queries while I debugged the queries, and Allan wrote the indexes while I wrote the readme file.