**CMSC203 Assignment 2 Implementation (Documentation)**

Class: CMSC203 CRN 40438

 Program: Assignment # 2

Instructor: Grigoriy Grinberg

 Summary of Description: Create a multi class program that relays patient and procedure information through two classes to a third driver class with a main method that gathers the information and displays it all.

 Due Date: 07/01/2024

 Integrity Pledge: I pledge that I have completed the programming assignment independently.

 I have not copied the code from a student or any source.

**Part1: UML:** Here is a UML for Assignment 2 program:

PatientDriverApp

- patient : Patient

- procedure1 : Procedure

- procedure2 : Procedure

- procedure3 : Procedure

+ PatientDriverApp()

+ initializePatient()

+ initalizeProcedures()

+ displayPatient(patient : Patient) : void

+displayProcedure(procedure : Procedure) : void

+calculateTotalCharges(procedure1 : Procedure, procedure2 : Procedure, procedure3 : Procedure) : double

+ Patient()

+ Patient(firstName : String, middleName : String, lastName : String)

+ Patient(firstName : String, middleName : String, lastName : String, address : String, city : String, state : String, zipCode : String, phoneNum : String, emerName : String, emerNum : String)

+ getfirstName() : String

+ getmiddleName() : String

+ getlastName() : String

+ getAddress() : String

+ getCity() : String

+ getState() : String

+ getzip() : String

+ getphoneNum() : String

+ getemerName() : String

+ getemerNum() : String

+ setfirstName(firstName : String) : void

+ setmiddleName(middleName : String) : void

+ setlastName(lastName : String) : void

+ setAddress(address : String) : void

+ setCity(city : String) : void

+ setState(state : String) : void

+ setzip(zipCode : String) : void

+ setphoneNum(phoneNum : String) : void

+ setemerName(emerName : String) : void

+ setemerNum(emerNum : String) : void

+ buildFullName() : String

+ buildAddress() : String

+ buildEmerContact() : String

+ toString() : String

+ Patient()

+ Patient(firstName : String, middleName : String, lastName : String)

+ Patient(firstName : String, middleName : String, lastName : String, address : String, city : String, state : String, zipCode : String, phoneNum : String, emerName : String, emerNum : String)

+ getfirstName() : String

+ getmiddleName() : String

+ getlastName() : String

+ getAddress() : String

+ getCity() : String

+ getState() : String

+ getzip() : String

+ getphoneNum() : String

+ getemerName() : String

+ getemerNum() : String

+ setfirstName(firstName : String) : void

+ setmiddleName(middleName : String) : void

+ setlastName(lastName : String) : void

+ setAddress(address : String) : void

+ setCity(city : String) : void

+ setState(state : String) : void

+ setzip(zipCode : String) : void

+ setphoneNum(phoneNum : String) : void

+ setemerName(emerName : String) : void

+ setemerNum(emerNum : String) : void

+ buildFullName() : String

+ buildAddress() : String

+ buildEmerContact() : String

+ toString() : String

Patient

- firstName : String

- middleName : String

- lastName : String

- address : String

- city : String

- state : String

- zipCode : String

- phoneNum : String

- emerName : String

- emerNum : String

Procedure

- procedureName : String

- procedureDate : String

- practitionerName : String

- procedureCost : double

+ Procedure()

+ Procedure(procedureName : String, procedureDate : String)

+ Procedure(procedureName : String, procedureDate : String, practitionerName : String, procedureCost : double)

+ getprocedureName() : String

+ getprocedureDate() : String

+ getpractitionerName() : String

+ getpractitionerCost() : double

+setprocedureName(procedureName : String) : void

+setprocedureDate(procedureDate : String) : void

+setpractitionerName(practitionerName : String) : void

+setprocedureCost(procedureCost : double) : void

+ toString() : String

**Part2: Comprehensive Test Plan**

A good test plan should be comprehensive. This means you should have a few test cases that test when the input is in and out of range, division by 0, incorrect Data type, etc. (Provide valid and invalid input)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cases | Input | Expected Output | Actual Output | Did Test Pass? |
| Case 1 | First Name: Jenny  Middle Name: Elaine Last Name: Sentori  Phone #: 123-456-7890  Street Address: 123 Main Street City: MyTown  State: CA  Zip Code: 01234  Emergency Contact: Bill Santori 777-555-1212 | Enter First Name: Jenny  Enter Middle Name: Elaine  Enter Last Name: Santori  Enter Phone Number: 123-456-7890  Enter Address: 123 Main Street  Enter City: MyTown  Enter State: CA  Enter Zip Code: 01234  Enter Emergency Contact Name: Bill Santori  Enter Emergency Contact Number: 777-555-1212  Patient Info:  Name: Jenny Elaine Santori  Address: 123 Main Street MyTown CA 01234  Emergency Contact: Bill Santori 777-555-1212    Procedure: Physical Exam  Procedure Date: 07/01/2024  Practitioner: Dr. Irvine  Charge: 3250.0  Procedure: X-Ray  Procedure Date: 07/01/2024  Practitioner: Dr. Jamison  Charge: 5500.43  Procedure: Blood Test  Procedure Date: 07/01/2024  Practitioner: Dr. Smith  Charge: 1400.75  Total Charges: $10,151.18  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Enter First Name: Jenny  Enter Middle Name: Elaine  Enter Last Name: Santori  Enter Phone Number: 123-456-7890  Enter Address: 123 Main Street  Enter City: MyTown  Enter State: CA  Enter Zip Code: 01234  Enter Emergency Contact Name: Bill Santori  Enter Emergency Contact Number: 777-555-1212  Patient Info:  Name: Jenny Elaine Santori  Address: 123 Main Street MyTown CA 01234  Emergency Contact: Bill Santori 777-555-1212    Procedure: Physical Exam  Procedure Date: 07/01/2024  Practitioner: Dr. Irvine  Charge: 3250.0  Procedure: X-Ray  Procedure Date: 07/01/2024  Practitioner: Dr. Jamison  Charge: 5500.43  Procedure: Blood Test  Procedure Date: 07/01/2024  Practitioner: Dr. Smith  Charge: 1400.75  Total Charges: $10,151.18  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Yes |
| Case 2 | First Name: Cookie  Middle Name: Blue Last Name: Monster  Phone #: 012-345-6789  Street Address: 123 Sesame Street  City: New York City  State: NY  Zip Code: 10001  Emergency Contact: Elmo Monster  Emergency Number: 777-555-1212 | Enter First Name: Cookie  Enter Middle Name: Blue  Enter Last Name: Monster  Enter Phone Number: 012-345-6789  Enter Address: 123 Sesame Street  Enter City: New York City  Enter State: NY  Enter Zip Code: 10001  Enter Emergency Contact Name: Elmo Monster  Enter Emergency Contact Number: 123-456-7890  Patient Info:  Name: Cookie Blue Monster  Address: 123 Sesame Street New York City NY 10001  Emergency Contact: Elmo Monster 123-456-7890    Procedure: Physical Exam  Procedure Date: 07/01/2024  Practitioner: Dr. Irvine  Charge: 3250.0  Procedure: X-Ray  Procedure Date: 07/01/2024  Practitioner: Dr. Jamison  Charge: 5500.43  Procedure: Blood Test  Procedure Date: 07/01/2024  Practitioner: Dr. Smith  Charge: 1400.75  Total Charges: $10,151.18  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Enter First Name: Cookie  Enter Middle Name: Blue  Enter Last Name: Monster  Enter Phone Number: 012-345-6789  Enter Address: 123 Sesame Street  Enter City: New York City  Enter State: NY  Enter Zip Code: 10001  Enter Emergency Contact Name: Elmo Monster  Enter Emergency Contact Number: 123-456-7890  Patient Info:  Name: Cookie Blue Monster  Address: 123 Sesame Street New York City NY 10001  Emergency Contact: Elmo Monster 123-456-7890    Procedure: Physical Exam  Procedure Date: 07/01/2024  Practitioner: Dr. Irvine  Charge: 3250.0  Procedure: X-Ray  Procedure Date: 07/01/2024  Practitioner: Dr. Jamison  Charge: 5500.43  Procedure: Blood Test  Procedure Date: 07/01/2024  Practitioner: Dr. Smith  Charge: 1400.75  Total Charges: $10,151.18  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Yes |
| Case 3 | First Name: Thomas  Middle Name: the Tank  Last Name: Engine  Street  Phone #: +0123456789  Address: 1945 Tidmouth Sheds  City: Tidmouth  State: Island of Sodor  Zip Code: 10001  Emergency Contact: Sir Topham Hatt  Emergency Number: +0456789101  \*Changed Procedural Values for Procedure Name, Practitioner | Enter First Name: Thomas  Enter Middle Name: The Tank  Enter Last Name: Engine  Enter Phone Number: +0123456789  Enter Address: 1945 Tidmouth Sheds  Enter City: Tidmouth  Enter State: Island of Sodor  Enter Zip Code: 10001  Enter Emergency Contact Name: Sir Topham Hatt  Enter Emergency Contact Number: +0456789101  Patient Info:  Name: Thomas The Tank Engine  Address: 1945 Tidmouth Sheds Tidmouth Island of Sodor 10001  Emergency Contact: Sir Topham Hatt +0456789101    Procedure: Physical Exam  Procedure Date: 07/01/2024  Practitioner: Workman Johnny  Charge: 3250.0  Procedure: Overhaul  Procedure Date: 07/01/2024  Practitioner: Workman Todd  Charge: 5500.43  Procedure: Standard Repairs  Procedure Date: 07/01/2024  Practitioner: Workman Gordon  Charge: 1400.75  Total Charges: $10,151.18  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Enter First Name: Thomas  Enter Middle Name: The Tank  Enter Last Name: Engine  Enter Phone Number: +0123456789  Enter Address: 1945 Tidmouth Sheds  Enter City: Tidmouth  Enter State: Island of Sodor  Enter Zip Code: 10001  Enter Emergency Contact Name: Sir Topham Hatt  Enter Emergency Contact Number: +0456789101  Patient Info:  Name: Thomas The Tank Engine  Address: 1945 Tidmouth Sheds Tidmouth Island of Sodor 10001  Emergency Contact: Sir Topham Hatt +0456789101    Procedure: Physical Exam  Procedure Date: 07/01/2024  Practitioner: Workman Johnny  Charge: 3250.0  Procedure: Overhaul  Procedure Date: 07/01/2024  Practitioner: Workman Todd  Charge: 5500.43  Procedure: Standard Repairs  Procedure Date: 07/01/2024  Practitioner: Workman Gordon  Charge: 1400.75  Total Charges: $10,151.18  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Yes |
| Case 4 | First Name:  Inshaal  Middle Name:  Muhammad  Last Name:  Chaudhury  Street  Phone #: 3013661473  Address: 123 Elms Street  City: Rockville  State: MD  Zip Code:  20851  Emergency Contact Name: Rubina Riaz  Emergency Contact Number: 717-446-5137  \*changed procedure names, procedure date, practitioner name, charges | Enter First Name: Inshaal  Enter Middle Name: Muhammad  Enter Last Name: Chaudhury  Enter Phone Number: 301-366-1473  Enter Address: 123 Elms Street  Enter City: Rockville  Enter State: MD  Enter Zip Code: 20851  Enter Emergency Contact Name: Rubina Riaz  Enter Emergency Contact Number: 717-446-5137  Patient Info:  Name: Inshaal Muhammad Chaudhury  Address: 123 Elms Street Rockville MD 20851  Emergency Contact: Rubina Riaz 717-446-5137    Procedure: Optical Eye Exam  Procedure Date: 07/05/2024  Practitioner: Dr. Thomas  Charge: 200.0  Procedure: New Prescription  Procedure Date: 07/05/2024  Practitioner: Dr. Thomas  Charge: 250.0  Procedure: New Glasses  Procedure Date: 07/05/2024  Practitioner: MyEyeDoctor  Charge: 300.0  Total Charges: $750.00  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Enter First Name: Inshaal  Enter Middle Name: Muhammad  Enter Last Name: Chaudhury  Enter Phone Number: 301-366-1473  Enter Address: 123 Elms Street  Enter City: Rockville  Enter State: MD  Enter Zip Code: 20851  Enter Emergency Contact Name: Rubina Riaz  Enter Emergency Contact Number: 717-446-5137  Patient Info:  Name: Inshaal Muhammad Chaudhury  Address: 123 Elms Street Rockville MD 20851  Emergency Contact: Rubina Riaz 717-446-5137    Procedure: Optical Eye Exam  Procedure Date: 07/05/2024  Practitioner: Dr. Thomas  Charge: 200.0  Procedure: New Prescription  Procedure Date: 07/05/2024  Practitioner: Dr. Thomas  Charge: 250.0  Procedure: New Glasses  Procedure Date: 07/05/2024  Practitioner: MyEyeDoctor  Charge: 300.0  Total Charges: $750.00  Student Name: Inshaal Chaudhury  MC#: M21117800  Due Date: 07/01/2024 | Yes |

**Part3: Screenshots related to the Test Plan:**

**Case 1**

**A screenshot of a computer

Description automatically generated**

**Case 2**

**A screenshot of a computer

Description automatically generated**

**Case 3**

**A screenshot of a computer

Description automatically generated**

**Case 4**

**A screenshot of a computer

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**Part 4: Other Screenshots**

GitHub:

A screenshot of a computer

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Command Prompt:

A screenshot of a computer

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**Lessons Learned** <Provide answers to the questions listed above>**:**

Write about your Learning Experience, highlighting your lessons learned and learning experience from working on this project.

What have you learned?

**Through this project, I have learned how to create my own classes, create objects based on those classes, create instance variables/fields, and use those fields in methods such as assessor and mutator methods. Additionally, I learned how to create a UML diagram based on the guidelines of the project, the way in which they work, and how to implement its concepts into my code.**

What did you struggle with?

**I struggled a little bit with the syntax of classes and objects, as they were initially confusing and hard to wrap my head around to fully understand and implement them. This was especially an issue under the PatientDriverApp class, as that was definitely difficult to implement as some of the methods required weren’t mentioned in the instructions at all, and I had to figure them out after finding tutorials on YouTube and referring back to the textbook.**

What would you do differently on your next project?

**Next time, I would start even earlier so that I can ask for help from my peers and professors/ATPA coach.**

What parts of this assignment were you successful with, and what parts (if any) were you not successful with?

**I was especially successful in regard to the Patient and Procedure classes, as they were fairly straightforward, and the instructions were very clear as to what to do. I did struggle with the PatientDriverApp class as the instructions and several methods required to initialize the Patient and Procedure classes weren’t explicitly explained and I had to refer to tutorials and the textbook to answer my questions.**

Provide any additional resources/links/videos you used to while working on this assignment/project.

**Textbook**

[**https://www.youtube.com/watch?v=IUqKuGNasdM&pp=ygUYamF2YSBjbGFzc2VzIGFuZCBvYmplY3Rz**](https://www.youtube.com/watch?v=IUqKuGNasdM&pp=ygUYamF2YSBjbGFzc2VzIGFuZCBvYmplY3Rz)

**Check List:** <Provide answers to the column Y/N or N/A >**:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** |  | **Y/N** | **Comments** |
|  | **Assignment files:** | **Y** |  |
|  | * FirstInitialLastName\_ Assignment#\_Moss.zip | **Y** |  |
|  | * FirstInitialLastName\_Assignment#.docx/.pdf | **Y** |  |
|  | * Source java files | **Y** |  |
|  | **Program compiles** | **Y** |  |
|  | **Program runs with desired outputs related to a Test Plan** | **Y** |  |
|  | **Documentation file:** | **Y** |  |
|  | * Comprehensive Test Plan | **Y** |  |
|  | * Screenshots related to the Test Plan | **Y** |  |
|  | * Screenshots of your GitHub account with submitted Assignment# (if required) | **Y** |  |
|  | * UML Diagram (if required) | **Y** |  |
|  | * Algorithms/Pseudocode (if required) | **\*not required** |  |
|  | * Flowchart (if required) | **\*not required** |  |
|  | * Lessons Learned | **Y** |  |
|  | * Checklist is completed and included in the Documentation | Y |  |