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CS 622 Draft Assignment 1

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Please submit a draft of Assignment 1, using the Word template supplied, with *only* the following parts drafted:

1, 2, 3.1, and a beginning on 6.1 (around 3 classes and 3 sequence diagram steps)

# 1 SUMMARY DESCRIPTION

One- or two-paragraph overall description of your proposed term project—half-page (12-point Times New Roman) limit. By the end, term projects will incorporate most of the techniques discussed in the course. To do this, you may need to alter the direction of your project or introduce an additional project in future. You may alter this or even replace it as the semester progresses. You will probably find it useful to use your project acronym.

This project aims to develop a health tracking app for users to keep track of their personal health information. Users will create an account with login credentials and have the ability to input and track their own health information, such as BMI, blood pressure, and cholesterol. Additionally, users will have the option to add custom health problems and track them over time through notes. Information should be verified and stored in a secure database.

The app also allows for parents to input and track their children's immunization records under their account. This app will utilize various Java concepts such as object-oriented programming (OOP) for creating classes and inheritance relationships between them, exception handling for robustness and error handling, concurrency for multi-threading, JavaFX for creating a user-friendly graphical user interface (GUI), and Java Database Connectivity (JDBC) for storing and retrieving health information from a database. Additionally, the app will also make use of various Java APIs and libraries for handling health-related calculations and functions. With an emphasis on privacy, each user has complete control over who they share their health information with. Overall, this app provides a convenient and organized way for users to track their personal health information and their family's health records in a secure and private manner.

### >>>AI generation OR check: *I did not use AI generation here* \_\_(Please collapse this before submitting.)

(1) PARAGRAPH DESCRIBING YOUR VALUE ADDED TO THE AI-GENERATED MATERIAL

The AI response was great as a starting point for my project. It gave me a strong idea of what my project can achieve and what improvements can be made. As a human being, I can utilize this and mix my own ideas and creativity to come up with a more customizable and productive app. Using a well-versed prompt helped me to get as much accurate information as the AI could generate about the project. However, I added/edited some lines to explain how some of the java concepts from this code may be used for this app. I also added some unique features like adding custom health information, adding children immunization records. Additionally, I can also incorporate my unique experience and functionalities into the system to better suit the app towards my own preferences. I may not necessarily use graphs, charts for example. Overall, my own perspective and creativity will be biggest value added to this AI generated material.

(2) MY PROMPT SEQUENCE (ONLY)

[1]

I want to create a "personal health information" Java project using some java concepts. I would like the app to be able to record common health information that is trackable, and the information is only visible to each users. Write me a two paragraphs of half page overall summary that uses.

(3) CODE OR TEXT PRODUCED BY THE ABOVE PROMPT SEQUENCE

chatGPT\_\_ CODEX\_\_OTHER (please specify)\_\_\_

cchatGPT:  
The "Personal Health Information" Java project aims to provide a platform for users to record their common health information that is trackable and only visible to them. The application will allow users to track their health data such as blood pressure, weight, cholesterol levels, BMI, and notes related to their health. The user data will be stored in a database and accessed through the application. The application will allow users to view their data in different formats such as graphs, tables, and charts.

The application will require users to sign up and create an account with their personal details such as name, age, and contact information. The user will be required to provide their health data that will be stored securely in the database. The user will be able to add, update, or delete their health data at any time. The application will also provide an option for users to export their health data in a standard format that can be shared with their healthcare providers if needed. Overall, the Personal Health Information project aims to empower users to take control of their health by providing a platform to track and manage their health data in a convenient and securely.

## 2 I/O EXAMPLE FROM *PROJECTED* COMPLETED PROJECT *EVALUATION CRITERION (i) APPLIES*

Provide an example of projected *concrete* output for designated input. You will not be held to fulfilling exactly this—it is just explanatory at this point, to indicate where your project is going. We recognize that project direction and details will change as the term progress. This section refers to the project as a whole, not just to what you will produce this week, so we can gain an idea of what you have in mind overall.

Input: A user logs into their account and enters their latest blood pressure readings (120/80) and their current BMI (23).

Output: The app displays the user's blood pressure and BMI readings along with a history table showing their progress over time(possibly) before saving it to the database. The user may also see personalized recommendations for maintaining their blood pressure and BMI in a healthy range based on their age, gender, and other factors. The app automatically saves the inputted information to the user's account and updates their health record.

This is just one potential example of how the app may be used.

### >>>AI generation OR check: *I did not use AI generation here* \_\_(Please collapse this before submitting.)

(1) PARAGRAPH DESCRIBING YOUR VALUE ADDED TO THE AI-GENERATED MATERIAL

The AI thoughtfully evaluated my prompt and provided an example of input output. It described how the app will ask for user input to basically store individuals as part of a group and then it will ask for health information from the user and output the status. It is a great example of the i/o for my projected completed PHI project. However, I can certainly see how my own perspective will modify this example already. I can customize whatever I want to output based on the user input. I don’t necessarily have to display the information in a chart or graph. I can simply record the information and display what the recommended numbers are and provide a simple table of the historical data. This way, I am not totally off the rail from the AI generated material, rather I just added my own thought process into it.

(2) MY PROMPT SEQUENCE (ONLY)

[1]

Can you give me one i/o example expected from the projected completed project?

(3) CODE OR TEXT PRODUCED BY THE ABOVE PROMPT SEQUENCE

chatGPT\_\_ CODEX\_\_OTHER (please specify)\_\_\_

chatGPT:

Here’s an example of input/output:  
Input:

* User logs in to their account
* User selects the "Blood Pressure" category from the app's menu
* User enters their latest blood pressure reading (120/80)
* User saves the entry

Output:

* The app displays the user's blood pressure entry in a graph and chart format, with the latest reading prominently displayed
* The app also shows the user's historical blood pressure data over time, highlighting any trends or changes
* The app may also provide feedback or recommendations based on the user's blood pressure data, such as encouraging them to see a doctor if their readings are consistently high

## 3 REQUIREMENTS IMPLEMENTED IN THIS RELEASE

Supply [functional requirements](https://docs.google.com/document/d/1eU7eINLDxmrf793D4OF2yGT4ry_SW3GQGoVDYzecGHc/edit?usp=sharing) statement that you accomplished for this assignment, i.e., functionality that the application provides for the user. Please state requirement in declarative form, as illustrated in the examples, because here we want to know the functionality intended (*what*, not *how*). For example, the following is *not* a proper functional requirement: *TicTac will have a class for O’s and a class for X’s.* It is common to mistake design elements like this for requirements. To get started, state what the application will accept as input, like requirement 3.1 below.

Keep in mind that the implementation of your requirements will incorporate *an abstract class*, *inheritance*, *upcasting or downcasting*, and *polymorphism*; that will probably influence the requirements you choose to implement in this assignment.

### >>>AI generation OR check: *I did not use AI generation here* \_\_(Please collapse this before submitting.)

(1) PARAGRAPH DESCRIBING YOUR VALUE ADDED TO THE AI-GENERATED MATERIAL

The chatGPT response based on my prompt was quite satisfactory as a starting point. It helped me to bound my thought process to focus on the key requirements of the app. However, I needed to step up and modify the responses such that the requirements follow the functional requirement guideline provided in the section. I simplified the response to clarify what the actual requirements are. I also switched the requirements in the order that it makes sense to human such as, be able to login first then be able to input health info etc.With that modification, I believe I added a significant value to the AI response to create a solid, clear, and functional requirement for my PHI project.

(2) MY PROMPT SEQUENCE (ONLY)

[1] For my “Person health information” app can you generate one functional requirement (what the app shall be able to do, not how to) that will incorporate an abstract class, inheritance, upcasting or downcasting, and polymorphism.

[2] Could you give me another requirement which is functional but simple? i.e. the app should allow user register/login two the system in two lines?

(3) CODE OR TEXT PRODUCED BY THE ABOVE PROMPT SEQUENCE

chatGPT\_\_ CODEX\_\_OTHER (please specify)\_\_\_

chatGPT:  
[1]

One functional requirement statement that is accomplished in this assignment is that the application allows users to input and track their personal health information, including BMI, blood pressure, and cholesterol levels. This requirement involves the implementation of an abstract class (e.g. HealthInfo) that serves as a base class for specific health information classes (e.g. BMIInfo, BloodPressureInfo, and CholesterolInfo) that inherit from it. The use of inheritance enables the upcasting and downcasting of objects to the HealthInfo class, which allows for polymorphic behavior when accessing and manipulating health information data.

[2]

Sure! How about this: "The app should provide a user registration feature that allows users to create an account with a unique username and password. The app should also allow registered users to log in to the system using their username and password."

Continue with at most two more requirements.

## 3.1 Adding User

The application shall allow users to register/login with their personal information, username, email, and password.

## 6 TECHNIQUES IMPLEMENTED

Your implementation should include *inheritance*, *polymorphism*, and *either an abstract class or interface* at least once, and in a manner that is useful to your application. Explain where and how you applied these, using the headings below.

### 6.1 Class model and Sequence Diagram

Identify where you included *inheritance*, *polymorphism*, and *abstract classes* or *interfaces* in your class model. Make classes and members *static* or not as per their intended usage. To do this use tools (e.g., Visio, Lucidchart, or draw.io), PowerPoint, or a combined model as in [this example](https://docs.google.com/spreadsheets/d/1wnua9en_nwBITm-pNiQTn7QzP1ylu9LK2QJeELa2GrA/edit?usp=sharing) (which you are free to cut and paste from). Insert indications in red to show where the three features below apply.

Table

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