**import** java.util.Scanner; //create scanner

**import** java.util.\*;

**public** **class** GymMembers {

Member members[]; //calling from Member abstract class

{

**this**.members = members; //this statement to refer to current object

}

**public** GymMembers() {//create GymMembers constructor that contains the information of all members in an array

**super**(); // super keyword used to invoke the parent class constructor

Member chris = **new** Member();

chris.name = "Chris Smith"; //create constants for each category

chris.membernumber = 1;

chris.age = 20;

chris.weight= 185;

chris.height = 71;

chris.membership = **true**;

chris.level = "BluePro";

chris.bench = 385;

chris.squat = 405;

chris.deadlift = 465;

chris.date = **new** Date(); //date object for today's date

Member ben = **new** Member(); //insert new user Ben into the system

ben.name = "Ben Sharp";

ben.membernumber = 2;

ben.age = 34;

ben.weight= 228;

ben.height = 73;

ben.membership = **true**;

ben.level = "Blue";

ben.bench = 255;

ben.squat = 325;

ben.deadlift = 405;

ben.date = **new** Date();

Member alex = **new** Member(); //insert Alex info into the database

alex.name = "Alex Gardner";

alex.membernumber = 3;

alex.age = 18;

alex.weight= -1;

alex.height = -1;

alex.membership = **true**;

alex.level = "Trial";

alex.bench = -1;

alex.squat = -1;

alex.deadlift = -1;

alex.date = **new** Date();

members= **new** Member[] {ben, chris, alex}; }

**public** **void** BMIconvert() { //void statement that gets ovderridden

Scanner in = **new** Scanner(System.***in***);

String BMI = "y";

BMI = in.next();

System.***out***.println(BMI);

**int** yourBMI;

**while**(!BMI.equals("n")) {

System.***out***.println("Do you want to check your BMI? (y/n):");

**if** (BMI.toLowerCase() == "n") {//converts strng to lowercase defined by "n".

**break**;

}

**while** (!in.hasNextInt()) {

in.next();

}

yourBMI = in.nextInt(); //BMI information is calculated and placed into one of the four categories

System.***out***.println("Your BMI is" + yourBMI);

**if**(yourBMI < 18.5) { //conditional operation used to set BMI to determine body type

System.***out***.println("Underweight");

} **else** **if** (yourBMI < 25) {

System.***out***.println("Normal");

} **else** **if** (yourBMI < 30) {

System.***out***.println("Overweight");

} **else** {

System.***out***.println("obese");

}

System.***out***.println("Check another BMI? (y/n): "); //loop if you want to keep checking someone elses BMI

BMI = in.next();

}

}

**public** Member userSearch(String name) { //method overloading using the members method but in different paramaters

Member result = **null**;

// Search through the array of all members

**for** (**int** i = 0;i < members.length; i++) {

**if** (members[i]== **null**) {

**break**;

}

**if**(members[i].name.equals(name)) {

result = members[i];

**break**;

}

}

**return** result;

}

**public** **double** getbmi(String name){ //recursion used to continuously get BMI when specific username is selected

Member m = **null**;

m=userSearch(name);

**if** (m == **null**) {

**return** -1;

}

**return** m.getbmi(); //return statement for continuation

}

}

**import** java.util.Scanner; //import scanner

**public** **class** Main { //main class

**public** **static** **void** main(String[] args) {

Scanner input = **new** Scanner(System.***in***);

String first = "nick"; //admin access to database so no one unauthorized can see the members personal information

String last = "venito";

Scanner in = **new** Scanner(System.***in***);

**boolean** validInput = **false**; //boolean used if item is false

String search =" search";

**while** (!validInput) { //if input is valid then proceed with username and password for access to database

System.***out***.print("Enter username:");

String username = in.next();

System.***out***.print("Enter password:");

String pass = in.next();

// Check if user-name and password match or not.

**if** (username.equals(first) && pass.equals(last))

{

System.***out***.printf("Welcome to the Gym database! %n Type search or bmi: ");

validInput=**true**;

}

**else** { //if input is invalid then access is denied

System.***out***.println("Access Denied");

{

**try** { //try and catch statement for a random password

**int**[] myMemberPassword = {0};

System.***out***.println(myMemberPassword);

} **catch** (Exception e) { //exception used

System.***out***.println("Something went wrong."); //catch statement that inputs something went wrong because it is the incorrect password

} **finally** {

System.***out***.println("Enter username: ");

}

}

}

}

**if** (!validInput) {

System.*exit*(0);

}

GymMembers g = **new** GymMembers(); //call from GymMembers class for variable g

g.userSearch("Chris Smith");

String inputtext = " ";

**while**(!inputtext.equals("quit")) {

inputtext=in.nextLine();

**switch** (inputtext) { //switch statement used for username and password

**case** "search":

System.***out***.println("Type in known username ");

inputtext = in.nextLine();

Member m = g.userSearch(inputtext);

**if** (m == **null**) {

System.***out***.println("User not found try again"); //user not found statement if wrong username entered

}

**else** {

m.printinfo();

}

System.***out***.println();

**break**;

**case** "bmi":

System.***out***.println("Enter a Username");

inputtext=in.nextLine();

**double** bmi = g.getbmi(inputtext);

**if** (bmi < 0){

System.***out***.println("Not valid bmi");

}

**else**{

System.***out***.println("The Entered Members Bmi is: " + bmi); //calculates BMI from methods used in other class

System.***out***.println();

**break**;

}

}

}

}

}

**import** java.util.\*; //import java. util

**public** **class** Member { //member class that features the members information that will be called for other class

**public** String name = "no name"; //contains all the information needed for the information of our members

**public** **int** membernumber = 0 ;

**public** **int** age = 0;

**public** **double** height = 0;

**public** **double** weight = 0;

**public** **boolean** membership = **false**; //boolean for true or false

**public** String level = "undefined";

**public** **int** squat = 0;

**public** **int** bench = 0;

**public** **int** deadlift = 0;

**public** Date date = **new** Date();

**public** **void** printinfo(){ //create a method is not going to take any value or return any and access the properties of this class

System.***out***.println("Member Name "+ name);

System.***out***.println("Member Number "+ membernumber);

System.***out***.println("Member Age: "+ age);

System.***out***.println("Has MemberShip? "+ membership);

System.***out***.println("height: " + height);

System.***out***.println("weight: " + weight);

System.***out***.println("Bench Max: " + bench);

System.***out***.println("Squat Max: " + squat);

System.***out***.println("Deadlift Max: " + deadlift);

System.***out***.println("Member information accurate as of: "+ date);

System.***out***.println();

System.***out***.println("Level? "+ level);

System.***out***.println();

}

**public** **double** getbmi() { //double method used for all calculations

**double** bmi=0;

**final** **double** KILOGRAMS\_PER\_POUNDS = 0.45359237; //insert formulas for calculations

**final** **double** METERS\_PER\_INCH = 0.0254;

**double** weightInKilograms = weight \* KILOGRAMS\_PER\_POUNDS;

**double** heightINmeters = height \* METERS\_PER\_INCH;

bmi = weightInKilograms/ (heightINmeters \* heightINmeters);

**return** bmi; //return statement

}

}