

## Team Ganymede Assignment 2

### Preamble

Actual LOC:

    Main Method: 2

    Start Method: 71

Estimated LOC:

    Main Method: 10

    Start Method: 200

Total Effort:

    Main Method:

        Raena: 1 minute

        Anh: 15 minutes

    Start Method:

        Raena: 10 hours

        Anh: 10 hours

### The Assignment

The Ambient product is a JavaFX application that shows a GUI of the color based on the data collected from the website about Pine Flat Dam. Additional libraries, specifically JSoup and Maven, had to be used in order to retrieve the data from the website. The color of the box will change depending on the values of the inflow, outflow, and difference.

## Code

```
//Importing Java Libraries
import java.awt.Font;
import java.io.IOException;
import org.jsoup.Jsoup;
import org.jsoup.nodes.Document;
import org.jsoup.select.Elements;
import java.util.Scanner;
import javafx.application.Application;
import javafx.scene.*;
import javafx.scene.control.*;
import javafx.scene.layout.*;
import javafx.stage.Stage;
import javafx.scene.paint.*;
import javafx.scene.shape.*;
import javafx.event.*;
import javafx.geometry.Pos;

//JavaFX class
public class main extends Application {

    //main method
    public static void main(String[] args) throws IOException {

        //launches the GUI
        launch(args);
    }

    //start method
    public void start(Stage primaryStage) throws Exception{

        //use JSoup to grab outflow and inflow values from
        website
        Document doc = Jsoup.connect("http://www.spk-
        wc.usace.army.mil/fcgi-bin/hourly.py?report=pnf").get();
        Elements body = doc.select("pre");
        String str = body.text();
        Scanner s = new Scanner(str);
        for (int i = 0; i < 607; i++){
            s.next();
        }
        String valA = s.next();
    }
}
```

```

String valB = s.next();
s.close();

//Values needed from website
int outflow = Integer.parseInt(valA);
int inflow = Integer.parseInt(valB);
int diff = outflow - inflow;

//Conversion to values 0-99
double tempSmall=-10, tempBig=3000, realSmall=0,
realBig=99;
double tempa = (((double)diff-tempSmall)/(tempBig-
tempSmall))*(realBig-realSmall)+realSmall;
int newDiff = (int)tempa;

//Value printed
System.out.println("Outflow: " + outflow);
System.out.println("Inflow: " + inflow);
System.out.println("Difference: " + newDiff);

//Sets the program title
primaryStage.setTitle("Pine Flat");

//set layout of program to VBox
VBox root = new VBox();
root.setSpacing(10);
root.setAlignment(Pos.CENTER);

//Create a Circle to represent outflow vs inflow
Circle circle = new Circle(70);
if (outflow > inflow){
    circle.setFill(Color.LIMEGREEN);
}
else{
    if(newDiff < 75){
        circle.setFill(Color.YELLOW);
    }
    else{
        circle.setFill(Color.RED);
    }
}

//List of Labels
Label label3 = new Label("Max Value: ");

```

```

        outflow);
        inflow);

        Label label4 = new Label("User Settings");
        Label info = new Label("Outflow is currently at: " +
                                inflow);
        Label info2 = new Label("Inflow is currently at: " +
                                outflow);

        //List of TextField
        TextField ans1 = new TextField();

        //Settings Area
        HBox max = new HBox();
        max.setSpacing(20);
        max.setAlignment(Pos.CENTER);

        //Create a Button
        Button btn = new Button();
        btn.setText("Settings");

        //Button Action
        btn.setOnAction(new EventHandler<ActionEvent>() {
            @Override
            public void handle(ActionEvent event) {

            }
        });

        //Adding elements to max layout
        max.getChildren().add(label3);
        max.getChildren().add(ans1);

        //Adding elements to root layout
        root.getChildren().add(info);
        root.getChildren().add(info2);
        root.getChildren().add(circle);
        root.getChildren().add(label4);
        root.getChildren().add(max);
        root.getChildren().add(btn);

        //creates a new scene object with parameters layout of
        Scene scene = new Scene(root, 300, 400);

        //primary stage sets the scene to the scene object

```

```
        primaryStage.setScene(scene);

        //shows the primary stage
        primaryStage.show();
    }
}
```