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| ***SPRAWOZDANIE NR 3*** | | | |
| Nazwa ćwiczenia | Ćwiczenie III | | Obraz zawierający tekst  Opis wygenerowany automatycznie |
| Przedmiot | Programowanie obiektowe – laboratorium | |
| Student  grupa | Marcin Ogórkiewicz, grupa 7 | |
| Data ćwiczeń | 30.10.2023 | 20.11.2023 | Data oddania sprawozdania |

HelloApplication.java

package com.example.ProgramowanieObiektowe3;  
  
import javafx.application.Application;  
import javafx.fxml.FXMLLoader;  
import javafx.scene.Scene;  
import javafx.stage.Stage;  
  
import java.io.IOException;  
  
public class HelloApplication extends Application {  
 @Override  
 public void start(Stage stage) throws IOException {  
 FXMLLoader fxmlLoader = new FXMLLoader(HelloApplication.class.getResource("hello-view.fxml"));  
 Scene scene = new Scene(fxmlLoader.load(), 700, 500);  
 stage.setScene(scene);  
 stage.show();  
 }  
  
 public static void main(String[] args) {  
 *launch*();  
 }  
}

HelloController.java

package com.example.ProgramowanieObiektowe3;  
  
  
  
import javafx.event.ActionEvent;  
import javafx.fxml.FXML;  
import javafx.fxml.Initializable;  
  
import javafx.scene.control.Button;  
import javafx.scene.text.Text;  
  
import java.net.URL;  
import java.util.ResourceBundle;  
import java.util.ArrayList;  
import java.util.Arrays;  
  
  
public class HelloController implements Initializable {  
  
 @FXML  
 private Button button00;  
  
 @FXML  
 private Button button01;  
  
 @FXML  
 private Button button02;  
  
 @FXML  
 private Button button10;  
  
 @FXML  
 private Button button11;  
  
 @FXML  
 private Button button12;  
  
 @FXML  
 private Button button20;  
  
 @FXML  
 private Button button21;  
  
 @FXML  
 private Button button22;  
  
 @FXML  
 private Button button\_reset;  
  
 @FXML  
 private Text winnerText;  
  
 private int playerTurn = 0;  
  
 ArrayList<Button> buttons;  
  
 @Override  
 public void initialize(URL url, ResourceBundle resourceBundle) {  
 buttons = new ArrayList<>(Arrays.*asList*(button00,button01,button02,button10,button11,button12,button20,button21,button22));  
 buttons.forEach(button ->{  
 setupButton(button);  
 button.setFocusTraversable(false);  
 });  
 }  
  
 @FXML  
 void restartGame(ActionEvent event) {  
 buttons.forEach(this::resetButton);  
 gameEnd(false);  
 winnerText.setText("Nowa gra rozpoczęta!");  
 }  
  
 public void resetButton(Button button){  
 button.setDisable(false);  
 button.setText("");  
 }  
  
 private void setupButton(Button button) {  
 button.setOnMouseClicked(mouseEvent -> {  
 setPlayerSymbol(button);  
 button.setDisable(true);  
 checkIfGameIsOver();  
 });  
 }  
 private void gameEnd(boolean bool){  
 for (Button button : buttons) {  
 button.setDisable(bool);  
 }  
 }  
 public void setPlayerSymbol(Button button){  
 if(playerTurn % 2 == 0){  
 button.setText("X");  
 playerTurn = 1;  
 } else{  
 button.setText("O");  
 playerTurn = 0;  
 }  
 }  
  
 public void checkIfGameIsOver(){  
 for (int a = 0; a < 8; a++) {  
 String line = switch (a) {  
 case 0 -> button00.getText() + button01.getText() + button02.getText();  
 case 1 -> button10.getText() + button11.getText() + button12.getText();  
 case 2 -> button20.getText() + button21.getText() + button22.getText();  
 case 3 -> button00.getText() + button10.getText() + button20.getText();  
 case 4 -> button01.getText() + button11.getText() + button21.getText();  
 case 5 -> button02.getText() + button12.getText() + button22.getText();  
 case 6 -> button00.getText() + button11.getText() + button22.getText();  
 case 7 -> button02.getText() + button11.getText() + button20.getText();  
 default -> null;  
 };  
  
 if (line.equals("XXX")) {  
 winnerText.setText("Wygrał X! Gratulacje:)");  
 gameEnd(true);  
 }  
 else if (line.equals("OOO")) {  
 winnerText.setText("Wygrał O! Gratulacje:)");  
 gameEnd(true);  
 }  
 }  
  
 }  
}

hello-view.fxml

<?xml version="1.0" encoding="UTF-8"?>  
  
<?import javafx.scene.control.\*?>  
<?import javafx.scene.layout.\*?>  
<?import javafx.scene.text.\*?>  
  
<BorderPane maxHeight="-Infinity" maxWidth="-Infinity" minHeight="-Infinity" minWidth="-Infinity" prefHeight="400.0" prefWidth="600.0" xmlns="http://javafx.com/javafx/17.0.2-ea" xmlns:fx="http://javafx.com/fxml/1" fx:controller="com.example.ProgramowanieObiektowe3.HelloController">  
 <center>  
 <GridPane prefHeight="400.0" prefWidth="600.0" BorderPane.alignment="CENTER">  
 <columnConstraints>  
 <ColumnConstraints hgrow="SOMETIMES" minWidth="10.0" prefWidth="100.0" />  
 <ColumnConstraints hgrow="SOMETIMES" minWidth="10.0" prefWidth="100.0" />  
 <ColumnConstraints hgrow="SOMETIMES" minWidth="10.0" prefWidth="100.0" />  
 </columnConstraints>  
 <rowConstraints>  
 <RowConstraints minHeight="10.0" prefHeight="30.0" vgrow="SOMETIMES" />  
 <RowConstraints minHeight="10.0" prefHeight="30.0" vgrow="SOMETIMES" />  
 <RowConstraints minHeight="10.0" prefHeight="30.0" vgrow="SOMETIMES" />  
 </rowConstraints>  
 <children>  
 <Button fx:id="button00" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" />  
 <Button fx:id="button01" layoutX="10.0" layoutY="10.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.columnIndex="1" />  
 <Button fx:id="button02" layoutX="210.0" layoutY="10.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.columnIndex="2" />  
 <Button fx:id="button10" layoutX="10.0" layoutY="10.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.rowIndex="1" />  
 <Button fx:id="button11" layoutX="10.0" layoutY="138.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.columnIndex="1" GridPane.rowIndex="1" />  
 <Button fx:id="button12" layoutX="210.0" layoutY="138.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.columnIndex="2" GridPane.rowIndex="1" />  
 <Button fx:id="button20" layoutX="10.0" layoutY="10.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.rowIndex="2" />  
 <Button fx:id="button21" layoutX="10.0" layoutY="266.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.columnIndex="1" GridPane.rowIndex="2" />  
 <Button fx:id="button22" layoutX="10.0" layoutY="10.0" mnemonicParsing="false" prefHeight="300.0" prefWidth="300.0" GridPane.columnIndex="2" GridPane.rowIndex="2" />  
 </children>  
 </GridPane>  
 </center>  
 <bottom>  
 <Button fx:id="button\_reset" mnemonicParsing="false" onAction="#restartGame" text="Zagraj ponownie!" BorderPane.alignment="CENTER" />  
 </bottom>  
 <top>  
 <Text fx:id="winnerText" strokeType="OUTSIDE" strokeWidth="0.0" BorderPane.alignment="CENTER" />  
 </top>  
</BorderPane>

Działanie aplikacji

Obraz zawierający zrzut ekranu, Prostokąt, tekst, kwadrat

Opis wygenerowany automatycznie

Wnioski

Wykonanie ćwiczenia sprawiło mi dużo trudności. Zrozumienie działania javafx było dla mnie wyzwaniem. W swoim rozwiązaniu skorzystałem z pomocy wielu poradników internetowych.