

# Correction TP4

## MVC

Seuls UserInterface et Controller ont changé. On a mis en place des getter dans UserInterface et on les a utilisés dans le contrôleur.

### UserInterface.java

```
package com.mco;

import javafx.scene.Group;
import javafx.scene.control.Button;
import javafx.scene.control.TextField;
import javafx.scene.layout.HBox;
import javafx.scene.text.Text;

public class UserInterface {
    private Group root;

    private TextField todoItemInput;
    private Button addButton;

    public UserInterface() {
        root = generateUI();
    }

    private Group generateUI() {
        Group uiRoot = new Group();

        HBox hBox = new HBox(10);
        uiRoot.getChildren().add(hBox);

        Text text = new Text("Input:");
        todoItemInput = new TextField();
        addButton = new Button("add");

        hBox.getChildren().addAll(text, todoItemInput, addButton);

        return uiRoot;
    }

    public Group getRoot() {
        return root;
    }

    public TextField getTodoItemInput() {
```

```
        return todoItemInput;
    }

    public Button getAddButton() {
        return addButton;
    }
}
```

## Controller.java

```
package com.mco;

import javafx.event.ActionEvent;
import javafx.scene.control.Button;

import java.util.ArrayList;

public class Controller {
    private ArrayList<String> model;
    private UserInterface vue;

    public Controller(ArrayList<String> model, UserInterface vue) {
        this.model = model;
        this.vue = vue;

        Button button = vue.getAddButton();

        button.setOnAction(this::handleButtonAdd);
    }

    private void handleButtonAdd(ActionEvent actionEvent) {
        String todoItemText = vue.getTodoItemInput().getText();
        if (!todoItemText.equals("")) {
            model.add(todoItemText);
        }

        System.out.println(model);
    }
}
```

## Amélioration de UI

Javafx 8 permet de faire de nombreux agencements de composants graphique, lisez par exemple ce [tutorial sur les layouts](#).

## Représentez le modèle

On a ajouté un champ contenant notre liste dans la vue et on l'a utilisé dans le contrôleur.

### UserInterface.java

```
package com.mco;

import javafx.scene.Group;
import javafx.scene.control.Button;
import javafx.scene.control.ScrollPane;
import javafx.scene.control.TextField;
import javafx.scene.layout.HBox;
import javafx.scene.layout.VBox;
import javafx.scene.text.Text;

public class UserInterface {
    private Group root;

    private TextField todoItemInput;
    private Button addButton;
    private VBox todoItemList;

    public UserInterface() {
        root = generateUI();
    }

    private Group generateUI() {
        Group uiRoot = new Group();

        HBox hBox = new HBox(10);

        Text text = new Text("Input:");
        todoItemInput = new TextField();
        addButton = new Button("add");

        hBox.getChildren().addAll(text, todoItemInput, addButton);

        VBox vBox = new VBox(20);

        todoItemList = new VBox(5);
        ScrollPane scrollPane = new ScrollPane();
        scrollPane.setContent(todoItemList);
        scrollPane.setPrefSize(200, 200);

        vBox.getChildren().add(hBox);
        vBox.getChildren().add(scrollPane);
    }
}
```

```
        uiRoot.getChildren().add(vBox);

        return uiRoot;
    }

    public Group getRoot() {
        return root;
    }

    public TextField getTodoItemInput() {
        return todoItemInput;
    }

    public Button getAddButton() {
        return addButton;
    }

    public VBox getTodoItemList() {
        return todoItemList;
    }
}
```

## Controller.java

```
package com.mco;

import javafx.event.ActionEvent;
import javafx.scene.control.Button;
import javafx.scene.text.Text;

import java.util.ArrayList;

public class Controller {
    private ArrayList<String> model;
    private UserInterface vue;

    public Controller(ArrayList<String> model, UserInterface vue) {
        this.model = model;
        this.vue = vue;

        Button button = vue.getAddButton();

        button.setOnAction(this::handleButtonAdd);
    }

    private void handleButtonAdd(ActionEvent actionEvent) {
        String todoItemText = vue.getTodoItemInput().getText();
        if (!todoItemText.equals("")) {
            model.add(todoItemText);
            vue.getTodoItemList().getChildren().add(new Text(todoItemText));
        }
    }
}
```

```
    }  
  }  
}
```

## Ajout du résumé

### UserInterface.java

```
package com.mco;  
  
import javafx.scene.Group;  
import javafx.scene.control.Button;  
import javafx.scene.control.ScrollPane;  
import javafx.scene.control.TextField;  
import javafx.scene.layout.HBox;  
import javafx.scene.layout.VBox;  
import javafx.scene.text.Text;  
  
public class UserInterface {  
    private Group root;  
  
    private TextField todoItemInput;  
    private Button addButton;  
    private VBox todoItemList;  
    private Text totalItem;  
    private int numberTotalItem;  
  
    public UserInterface() {  
        numberTotalItem = 0;  
        root = generateUI();  
    }  
  
    private Group generateUI() {  
        Group uiRoot = new Group();  
  
        HBox hBox = new HBox(10);  
  
        Text text = new Text("Input:");  
        todoItemInput = new TextField();  
        addButton = new Button("add");  
  
        hBox.getChildren().addAll(text, todoItemInput, addButton);  
  
        VBox vBox = new VBox(20);  
  
        todoItemList = new VBox(5);  
        ScrollPane scrollPane = new ScrollPane();
```

```
scrollPane.setContent(todoItemList);
scrollPane.setPrefSize(200, 200);

vBox.getChildren().add(hBox);
vBox.getChildren().add(scrollPane);

totalItem = new Text();
text = new Text("Total item:");
HBox hBoxNumberItem = new HBox(10);
hBoxNumberItem.getChildren().addAll(text, totalItem);

totalItem.setText(String.valueOf(numberTotalItem));
vBox.getChildren().add(hBoxNumberItem);

uiRoot.getChildren().add(vBox);

return uiRoot;
}

public Group getRoot() {
    return root;
}

public TextField getTodoItemInput() {
    return todoItemInput;
}

public Button getAddButton() {
    return addButton;
}

public VBox getTodoItemList() {
    return todoItemList;
}

public void setNumberTotalItem(int numberTotalItem) {
    this.numberTotalItem = numberTotalItem;
    totalItem.setText(String.valueOf(numberTotalItem));
}
}
```

## Controller.java

```
package com.mco;

import javafx.event.ActionEvent;
import javafx.scene.control.Button;
import javafx.scene.text.Text;

import java.util.ArrayList;
```

```
public class Controller {
    private ArrayList<String> model;
    private UserInterface vue;

    public Controller(ArrayList<String> model, UserInterface vue) {
        this.model = model;
        this.vue = vue;

        Button button = vue.getAddButton();

        button.setOnAction(this::handleButtonAdd);
    }

    private void handleButtonAdd(ActionEvent actionEvent) {
        String todoItemText = vue.getTodoItemInput().getText();
        if (!todoItemText.equals("")) {
            model.add(todoItemText);
            vue.getTodoItemList().getChildren().add(new Text(todoItemText));
            vue.setNumberTotalItem(model.size());
        }
    }
}
```

## Mise à jour du modèle

### Main.java

```
package com.mco;

import javafx.application.Application;
import javafx.scene.Group;
import javafx.scene.Scene;
import javafx.stage.Stage;

import java.util.ArrayList;

public class Main extends Application {

    public static void main(String[] args) {
        launch(args);
    }

    @Override
    public void start(Stage primaryStage) throws Exception {
        // on met en place la racine de la scène
    }
}
```

```
Group root = new Group();
Scene theScene = new Scene(root);
primaryStage.setScene(theScene);

//Vue
UserInterface userInterface = new UserInterface();
root.getChildren().add(userInterface.getRoot());

//Modèle
ArrayList<TodoItem> todoList = new ArrayList<>();

//Contrôleur
Controller controller = new Controller(todoList, userInterface);

//Affichage de l'UI
primaryStage.setTitle("Todo List");
primaryStage.show();
}
}
```

## TodoItem.java

```
package com.mco;

import java.util.Date;

public class TodoItem {
    private String name;
    private Date creation;

    public TodoItem(String name) {
        this.name = name;
        creation = new Date();
    }

    public String getName() {
        return name;
    }

    public Date getCreation() {
        return creation;
    }
}
```

## UserInterface.java

```
package com.mco;

import javafx.scene.Group;
import javafx.scene.control.Button;
import javafx.scene.control.ScrollPane;
import javafx.scene.control.TextField;
import javafx.scene.layout.HBox;
import javafx.scene.layout.VBox;
import javafx.scene.text.Text;

public class UserInterface {
    private Group root;

    private TextField todoItemInput;
    private Button addButton;
    private VBox todoItemList;
    private Text totalItem;
    private int numberTotalItem;

    public UserInterface() {
        numberTotalItem = 0;
        root = generateUI();
    }

    private Group generateUI() {
        Group uiRoot = new Group();

        HBox hBox = new HBox(10);

        Text text = new Text("Input:");
        todoItemInput = new TextField();
        addButton = new Button("add");

        hBox.getChildren().addAll(text, todoItemInput, addButton);

        VBox vBox = new VBox(20);

        todoItemList = new VBox(5);
        ScrollPane scrollPane = new ScrollPane();
        scrollPane.setContent(todoItemList);
        scrollPane.setPrefSize(300, 200);

        vBox.getChildren().add(hBox);
        vBox.getChildren().add(scrollPane);

        totalItem = new Text();
        text = new Text("Total item:");
        HBox hBoxNumberItem = new HBox(10);
        hBoxNumberItem.getChildren().addAll(text, totalItem);
    }
}
```

```
        totalItem.setText(String.valueOf(numberTotalItem));
        vbox.getChildren().add(hBoxNumberItem);

        uiRoot.getChildren().add(vbox);

        return uiRoot;
    }

    public void addTodoItem(TodoItem item) {
        HBox hBox = new HBox(20);
        hBox.getChildren().addAll(new Text(item.getName()),
            new Text(item.getCreation().toString()));

        todoItemList.getChildren().add(hBox);
    }

    public Group getRoot() {
        return root;
    }

    public TextField getTodoItemInput() {
        return todoItemInput;
    }

    public Button getAddButton() {
        return addButton;
    }

    public VBox getTodoItemList() {
        return todoItemList;
    }

    public void setNumberTotalItem(int numberTotalItem) {
        this.numberTotalItem = numberTotalItem;
        totalItem.setText(String.valueOf(numberTotalItem));
    }
}
```

## Controller.java

```
package com.mco;

import javafx.event.ActionEvent;
import javafx.scene.control.Button;

import java.util.ArrayList;

public class Controller {
    private ArrayList<TodoItem> model;
    private UserInterface vue;
```

```
public Controller(ArrayList<TodoItem> model, UserInterface vue) {
    this.model = model;
    this.vue = vue;

    Button button = vue.getAddButton();

    button.setOnAction(this::handleButtonAdd);
}

private void handleButtonAdd(ActionEvent actionEvent) {
    String todoItemText = vue.getTodoItemInput().getText();
    if (!todoItemText.equals("")) {
        TodoItem item = new TodoItem(todoItemText);
        model.add(item);
        vue.addTodoItem(item);

        vue.setNumberTotalItem(model.size());
    }
}
}
```

## Mise à jour de la vue

Seul UserInterface a été impacté.

### UserInterface.java

```
package com.mco;

import javafx.scene.Group;
import javafx.scene.control.Button;
import javafx.scene.control.TextField;
import javafx.scene.layout.VBox;

public class UserInterface {
    private Group root;

    private InputTodoItemUI inputTodoItemUI;
    private TodoListUI todoListUI;
    private SummaryUI summaryUI;

    public UserInterface() {
        root = generateUI();
    }

    private Group generateUI() {
```

```
Group uiRoot = new Group();
VBox vBox = new VBox(20);

inputTodoItemUI = new InputTodoItemUI();
todoListUI = new TodoListUI();
summaryUI = new SummaryUI();

vBox.getChildren().addAll(
    inputTodoItemUI.getRoot(),
    todoListUI.getRoot(),
    summaryUI.getRoot()
);

uiRoot.getChildren().add(vBox);

return uiRoot;
}

public void addTodoItem(TodoItem item) {
    todoListUI.addTodoItem(item);
}

public Group getRoot() {
    return root;
}

public TextField getTodoItemInput() {
    return inputTodoItemUI.getTodoItemInput();
}

public Button getAddButton() {
    return inputTodoItemUI.getAddButton();
}

public void setNumberTotalItem(int numberTotalItem) {
    summaryUI.setNumberTotalItem(numberTotalItem);
}
}
```

## InputTodoItemUI.java

```
package com.mco;

import javafx.scene.Group;
import javafx.scene.control.Button;
import javafx.scene.control.TextField;
import javafx.scene.layout.HBox;
import javafx.scene.text.Text;
```

```
public class InputTodoItemUI {

    private Group root;
    private TextField todoItemInput;
    private Button addButton;

    public InputTodoItemUI() {
        root = new Group();
        HBox hBox = new HBox(10);

        Text text = new Text("Input:");
        todoItemInput = new TextField();
        addButton = new Button("add");

        hBox.getChildren().addAll(text, todoItemInput, addButton);

        root.getChildren().add(hBox);
    }

    public Group getRoot() {
        return root;
    }

    public TextField getTodoItemInput() {
        return todoItemInput;
    }

    public Button getAddButton() {
        return addButton;
    }
}
```

## TodoListUI.java

```
package com.mco;

import javafx.scene.Group;
import javafx.scene.control.ScrollPane;
import javafx.scene.layout.VBox;

public class TodoListUI {
    private Group root;
    private VBox todoItemList;

    public TodoListUI() {
        root = new Group();
        todoItemList = new VBox(5);
        ScrollPane scrollPane = new ScrollPane();
        scrollPane.setContent(todoItemList);
    }
}
```

```
        scrollPane.setPrefSize(300, 200);

        root.getChildren().add(scrollPane);
    }

    public void addTodoItem(TodoItem item) {
        TodoItemUI todoItemUI = new TodoItemUI(item);
        todoItemList.getChildren().add(todoItemUI.getRoot());
    }

    public Group getRoot() {
        return root;
    }
}
```

### TodoItemUI.java

```
package com.mco;

import javafx.scene.Group;
import javafx.scene.layout.HBox;
import javafx.scene.text.Text;

public class TodoItemUI {
    private Group root;
    public TodoItemUI(TodoItem item) {
        root = new Group();

        HBox hBox = new HBox(20);
        hBox.getChildren().addAll(
            new Text(item.getName()),
            new Text(item.getCreation().toString())
        );
        root.getChildren().add(hBox);
    }

    public Group getRoot() {
        return root;
    }
}
```

### SummaryUI.java

```
package com.mco;
```

```
import javafx.scene.Group;
import javafx.scene.layout.HBox;
import javafx.scene.text.Text;

public class SummaryUI {
    private Group root;
    private Text totalItem;
    private int numberTotalItem;

    public SummaryUI() {
        root = new Group();

        numberTotalItem = 0;
        totalItem = new Text();
        Text text = new Text("Total item:");
        HBox hBoxNumberItem = new HBox(10);
        hBoxNumberItem.getChildren().addAll(text, totalItem);

        totalItem.setText(String.valueOf(numberTotalItem));

        root.getChildren().add(hBoxNumberItem);
    }

    public Group getRoot() {
        return root;
    }

    public void setNumberTotalItem(int numberTotalItem) {
        this.numberTotalItem = numberTotalItem;
        totalItem.setText(String.valueOf(numberTotalItem));
    }
}
```

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