

# Mobile Application Development

Higher Diploma in Science in Computer Science

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Produced  
by

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# Repositories - Part 2

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# Repositories Lab 10 Step Programme!

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1. Install Git, Sourcetree & Egit
2. Create Schema Project
3. Commit Baseline Schema project to git repository
4. Create 'Walking Skeleton' Version
5. Commit "Walking Skeleton" Version
6. Commit Simple Player & Club Tests
7. Commit Club/Player One to Many Relationship
8. Manipulating Repository using Sourcetree & Bitbucket
9. Commit Bidirectional Player/Club
10. Checkout Earlier Revision


# Repositories Lab 10 Step Programme!

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6. Commit Simple Player & Club Tests
7. Commit Club/Player One to Many Relationship
8. Manipulating Repository using Sourcetree & Bitbucket
9. Commit Bidirectional Player/Club
10. Checkout Earlier Revision

# Step 6: Introduce Tests

- Change Player and Club classes
- Change ClubTest and PlayerTest classes
- Commit to the repo with a commit message

 Commit Cl

Commit Changes to Git Repository

Commit message





Simple standalone tests for player and


Author: Eamonn de Leastar <edeleatar@gmail.com>

Committer: Eamonn de Leastar <edeleatar@gmail.com>

Files (4/4)

type filter text

Status	Path
<input checked="" type="checkbox"/> 	app/models/Club.java
<input checked="" type="checkbox"/> 	app/models/Player.java
<input checked="" type="checkbox"/> 	test/ClubTest.java
<input checked="" type="checkbox"/> 	test/PlayerTest.java

 Commit and Push Commit Cancel

```
import org.junit.*;

import java.util.*;
import play.test.*;
import models.*;

public class ClubTest extends UnitTest
{
    private Club c1, c2, c3;

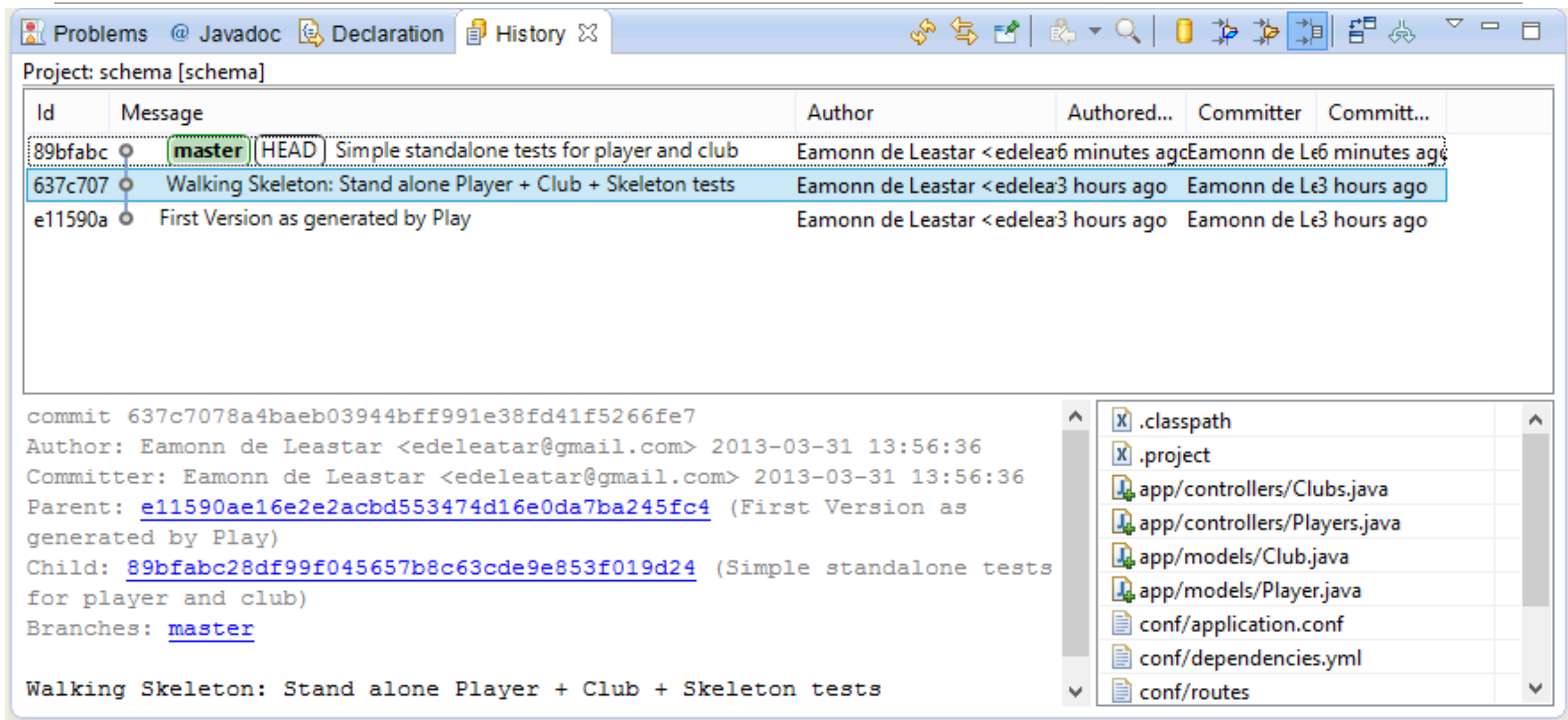
    @Before
    public void setup()
    {
        c1 = new Club("tramore");
        c2 = new Club("dunmore");
        c3 = new Club("fenor");
        c1.save();
        c2.save();
        c3.save();
    }

    @After
    public void teardown()
    {
        c1.delete();
        c2.delete();
        c3.delete();
    }

    @Test
    public void testCreate()
    {
        Club a = Club.findByName("tramore");
        assertNotNull(a);
        assertEquals("tramore", a.name);
        Club b = Club.findByName("dunmore");
        assertNotNull(b);
        assertEquals("dunmore", b.name);
        Club c = Club.findByName("fenor");
        assertNotNull(c);
        assertEquals("fenor", c.name);
    }

    @Test
    public void testNotThere()
    {
        Club a = Club.findByName("george");
        assertNull(a);
    }
}
```

# Step 6: History



The screenshot shows an IDE window with tabs for Problems, Javadoc, Declaration, and History. The History tab is active, displaying a table of commit history for the project 'schema [schema]'. The table has columns for Id, Message, Author, Authored..., Committer, and Committ... The first commit (89bfabc) is highlighted in green and labeled 'master' and 'HEAD'. The second commit (637c707) is highlighted in blue. The third commit (e11590a) is also highlighted in blue. Below the table, the commit details for the selected commit (637c707) are shown, including the commit hash, author, committer, parent, child, and branches. To the right of the commit details is a file explorer showing the project structure, including .classpath, .project, app/controllers/Clubs.java, app/controllers/Players.java, app/models/Club.java, app/models/Player.java, conf/application.conf, conf/dependencies.yml, and conf/routes.

Id	Message	Author	Authored...	Committer	Committ...
89bfabc	Simple standalone tests for player and club	Eamonn de Leastar <edelea...>	6 minutes ago	Eamonn de Le...>	6 minutes ago
637c707	Walking Skeleton: Stand alone Player + Club + Skeleton tests	Eamonn de Leastar <edelea...>	3 hours ago	Eamonn de Le...>	3 hours ago
e11590a	First Version as generated by Play	Eamonn de Leastar <edelea...>	3 hours ago	Eamonn de Le...>	3 hours ago

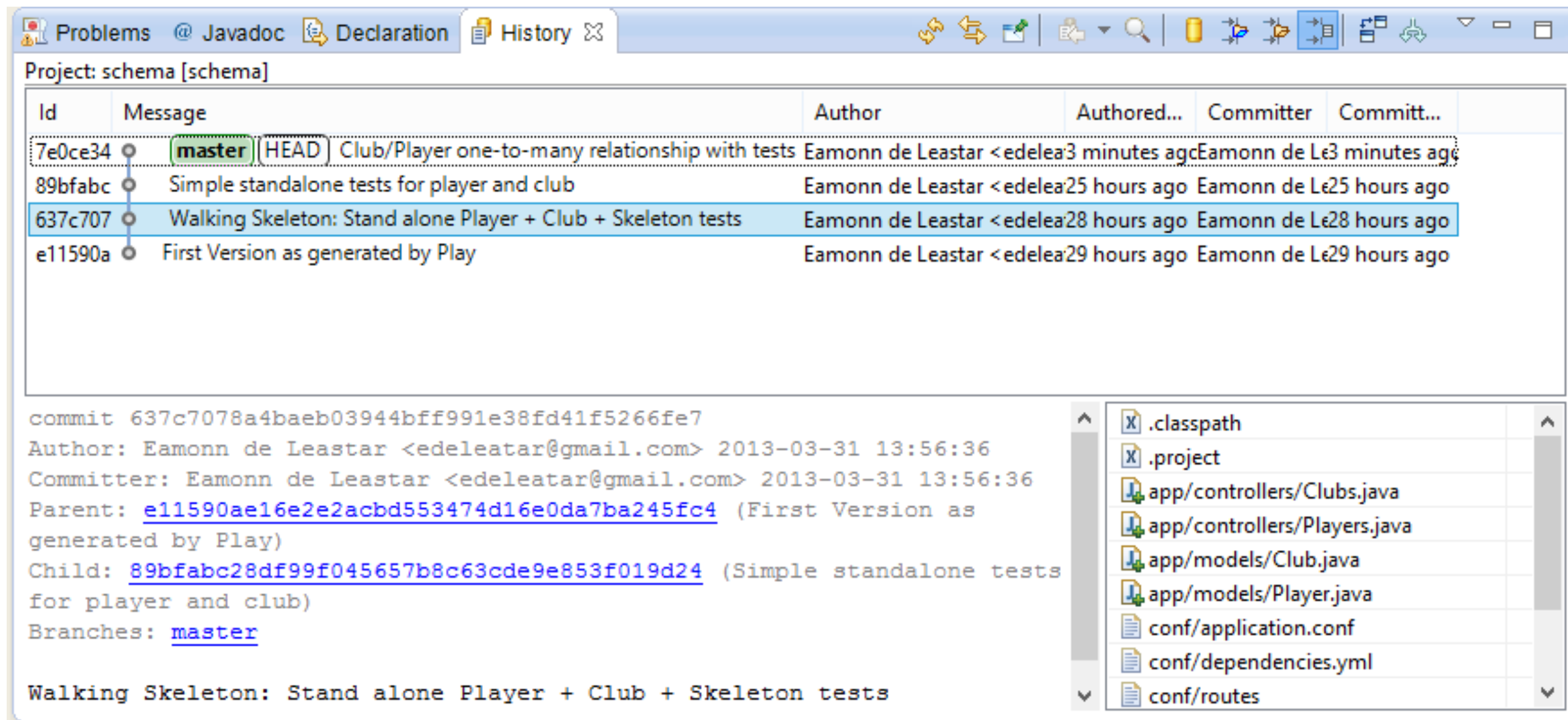
commit 637c7078a4baeb03944bfff991e38fd41f5266fe7  
Author: Eamonn de Leastar <edeleatar@gmail.com> 2013-03-31 13:56:36  
Committer: Eamonn de Leastar <edeleatar@gmail.com> 2013-03-31 13:56:36  
Parent: [e11590ae16e2e2acbd553474d16e0da7ba245fc4](#) (First Version as generated by Play)  
Child: [89bfabc28df99f045657b8c63cde9e853f019d24](#) (Simple standalone tests for player and club)  
Branches: [master](#)

Walking Skeleton: Stand alone Player + Club + Skeleton tests

- .classpath
- .project
- app/controllers/Clubs.java
- app/controllers/Players.java
- app/models/Club.java
- app/models/Player.java
- conf/application.conf
- conf/dependencies.yml
- conf/routes

# Step 7: Club/Player One-to-Many relationship

- Edit Player and Club classes to introduce relationship
- Introduce Test to see if it works
- Commit the changes



The screenshot shows an IDE window with a commit history table and a file explorer on the right.

**Project: schema [schema]**

Id	Message	Author	Authored...	Committer	Committ...
7e0ce34	<b>master</b> (HEAD) Club/Player one-to-many relationship with tests	Eamonn de Leastar <edelea	3 minutes ago	Eamonn de Le	3 minutes ago
89bfabc	Simple standalone tests for player and club	Eamonn de Leastar <edelea	25 hours ago	Eamonn de Le	25 hours ago
637c707	Walking Skeleton: Stand alone Player + Club + Skeleton tests	Eamonn de Leastar <edelea	28 hours ago	Eamonn de Le	28 hours ago
e11590a	First Version as generated by Play	Eamonn de Leastar <edelea	29 hours ago	Eamonn de Le	29 hours ago

**commit 637c7078a4baeb03944bfff991e38fd41f5266fe7**  
Author: Eamonn de Leastar <edeleatar@gmail.com> 2013-03-31 13:56:36  
Committer: Eamonn de Leastar <edeleatar@gmail.com> 2013-03-31 13:56:36  
Parent: [e11590ae16e2e2acbd553474d16e0da7ba245fc4](#) (First Version as generated by Play)  
Child: [89bfabc28df99f045657b8c63cde9e853f019d24](#) (Simple standalone tests for player and club)  
Branches: [master](#)

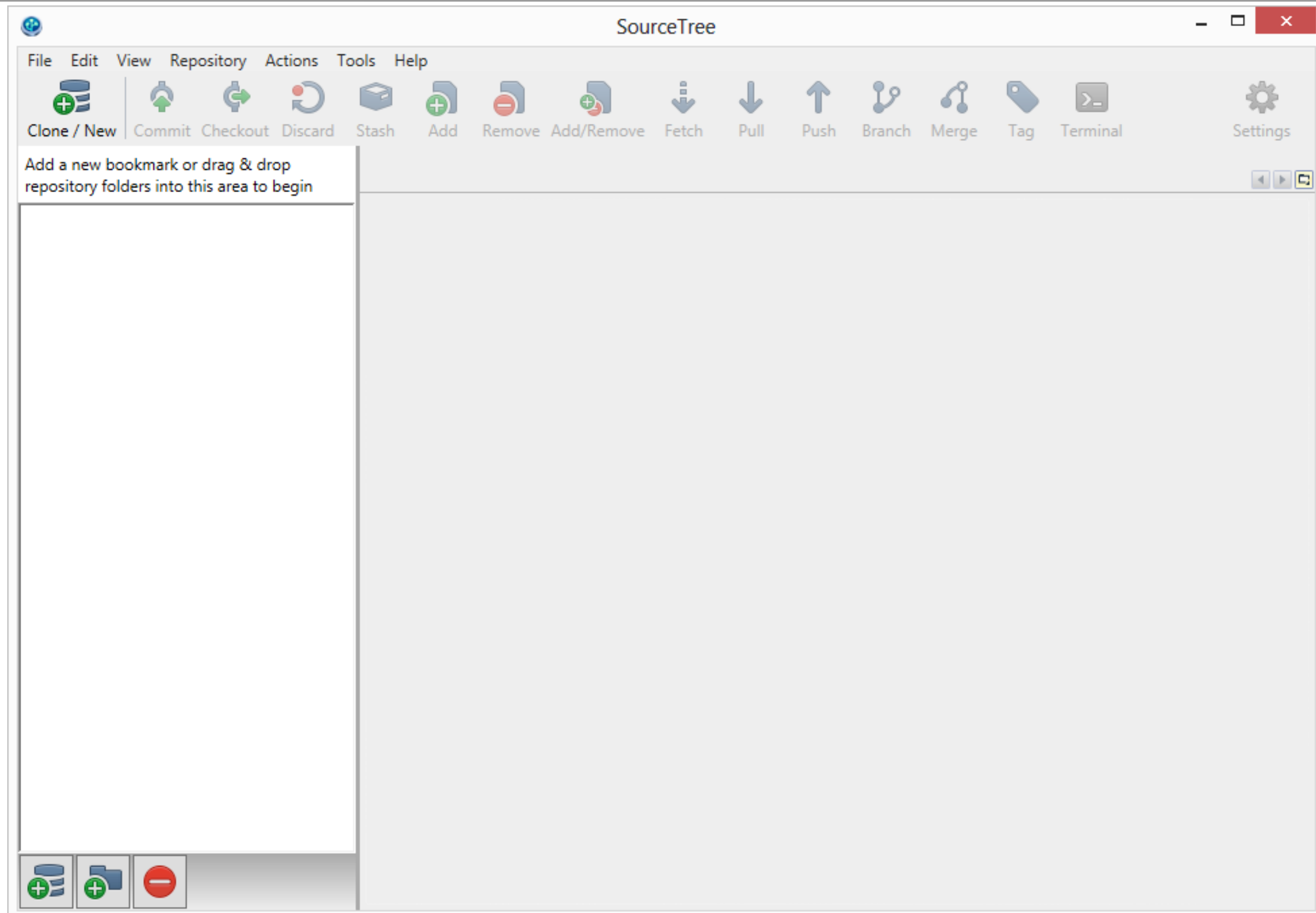
**Walking Skeleton: Stand alone Player + Club + Skeleton tests**

**File Explorer:**

- .classpath
- .project
- app/controllers/Clubs.java
- app/controllers/Players.java
- app/models/Club.java
- app/models/Player.java
- conf/application.conf
- conf/dependencies.yml
- conf/routes

# Step 8 : SourceTree

- Browse and manage the repo independent of Eclipse





SourceTree

File Edit View Repository Actions Tools Help

Clone / New Commit Checkout Discard Stash Add Remove Add/Remove Fetch Pull Push Branch Merge Tag Terminal Settings

schema C:\Users\edele... schema X

File Status

- Working Copy

Branches

- master

Tags

Remotes

Stashes

All Branches Show Remote Branches Date Order

Graph	Description	Date	Author	Commit
master	Club/Player one-to-many relationship with tests	1 Apr 2013 17:42	Eamonn de Leasta	7e0ce34
	Simple standalone tests for player and club	31 Mar 2013 16:23	Eamonn de Leasta	89bfabc
	Walking Skeleton: Stand alone Player + Club + Skeleton tests	31 Mar 2013 13:56	Eamonn de Leasta	637c707
	First Version as generated by Play	31 Mar 2013 13:06	Eamonn de Leasta	e11590a

Commit: 7e0ce34f7f9e666d67ffc98705a37cb386b0aa01 [7e0ce34]  
Parents: 89bfabc28d  
Author: Eamonn de Leasta <edeleatar@gmail.com>  
Date: 01 April 2013 17:42:07  
Labels: HEAD, master

Club/Player one-to-many relationship with tests

app/models/Club.java

Modified file, 16 lines added, 1 lines removed Reverse File

Hunk 1: Lines 1-11 (previously 1-5)

```
1 1 package models;
2 2
3 + import java.util.ArrayList;
4 + import java.util.List;
5 +
6 + import javax.persistence.CascadeType;
7 + import javax.persistence.OneToOne;
8 +
9 9 import javax.persistence.Entity;
10 10 import play.db.jpa.Model;
11 11
```

Reverse Hunk Reverse Selected Lines

Hunk 2: Lines 14-26 (previously 8-16)

```
8 14 {
9 15     public String name;
10 16
17 + @OneToOne(cascade=CascadeType.ALL)
18 + public List<Player> players;
19 +
11 20     public Club(String name)
```

File Status Log / History Search

Clean | master Atlassian

- Can see visually any changes between each 'commit'

# Step 8: Create an Empty Repository on Bitbucket

## Create a new repository

You can also [import a repository](#)

Name\*

schema

Description

Access level ☒ This is a private repository

Repository type ☒ Git

☐ Mercurial

Project management ☐ Issue tracking

☐ Wiki

Language Select an Option

Create repository

Cancel

### New to Bitbucket?

Learn the basics of using Git and Mercurial by exploring the Bitbucket 101.



### Working in a team?

Create a team account to consolidate your repos and organize your team's work





schema

edelo20

★ Following

✉ Share

↓ Clone ▾

↔ Fork

↔ Compare

↑ Pull request

Overview

Source

Commits

Pull requests

Downloads



Get started

Make changes and push

Invite your friends

Get to work

## Add some code

We can help you start a brand new project, or import an existing one.

Tell us about your project:

[I'm starting from scratch](#)

[I have code I want to import](#)



Hey Mac users!

Do you prefer a native GUI over the command line? [Download SourceTree free.](#)

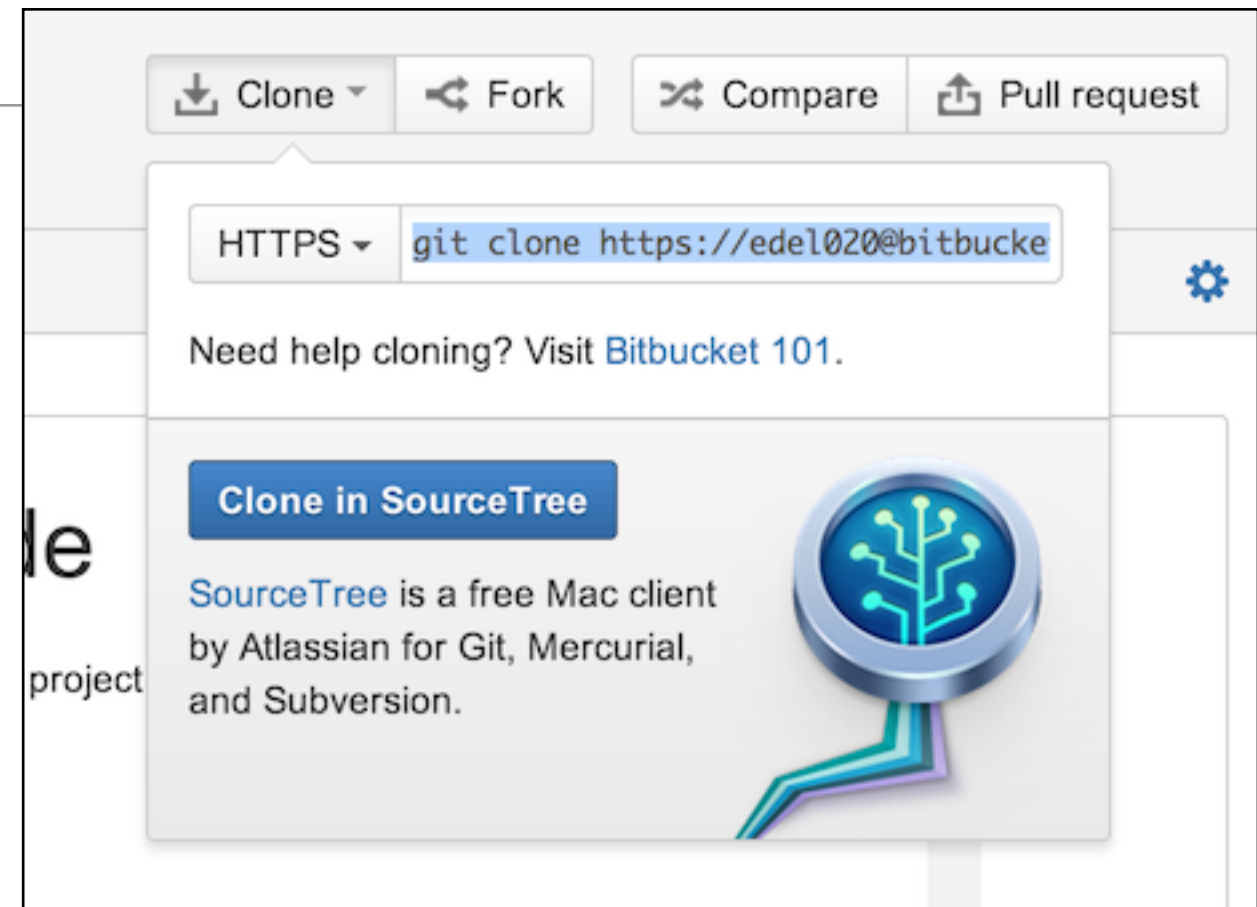


Atlassian

SourceTree

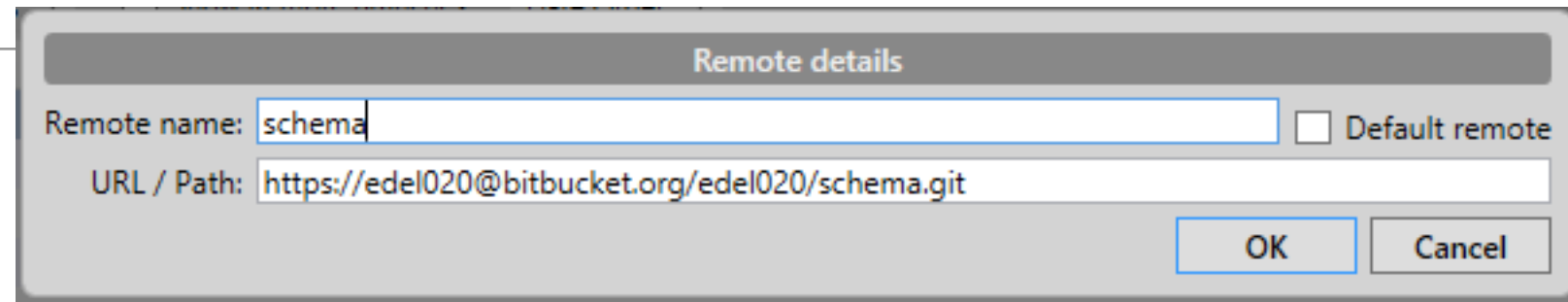
# Locate Repository URL

- Each repository has a name + a unique URL
- Accessible over HTTPS

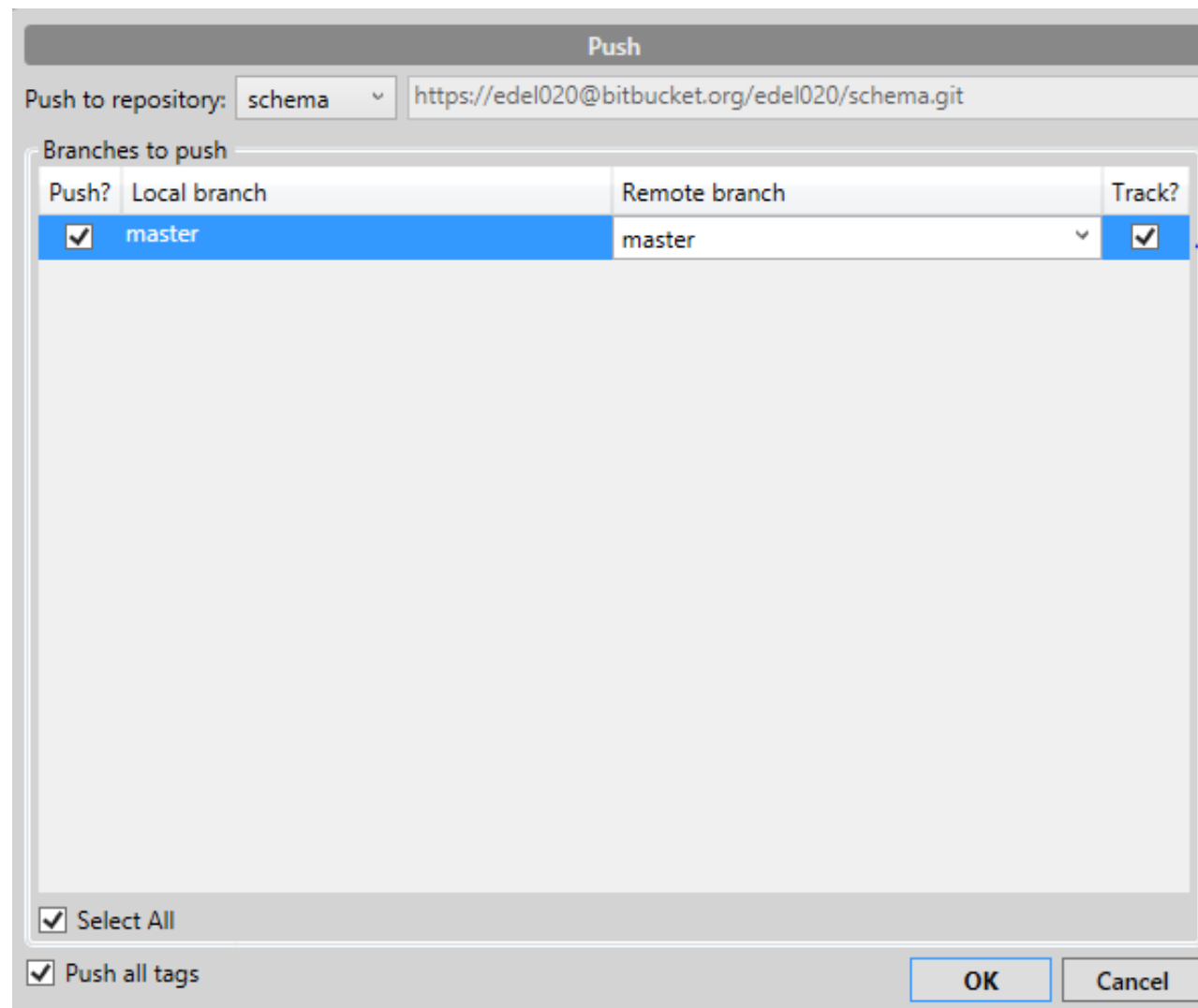


```
https://edel020@bitbucket.org/edel020/schema.git
```

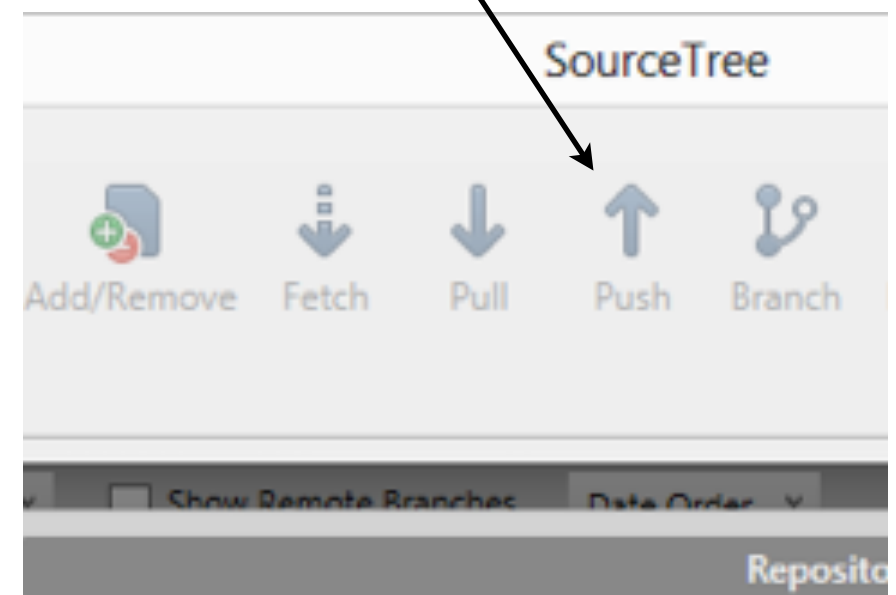
# SourceTree + Bitbucket



- Instruct SourceTree to associate the 'local' repository with the 'remote' repository we have just created on bitbucket




- Then “Push” the local repository to the ‘Remote’




# Step 8: Bitbucket “Remote” “Master”

- This is a complete copy of your local project
- Does NOT contain ‘ignored’ files



**schema**  
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Clone Fork Compare Pull request

Overview **Source** Commits Pull requests Downloads 




master schema /

app

conf

public

test

	<a href="#">.classpath</a>	6.0 KB	6 days ago	Walking Skeleton: Stand alone Player + Club + Skeleton tests
	<a href="#">.gitignore</a>	303 B	6 days ago	First Version as generated by Play
	<a href="#">.project</a>	830 B	6 days ago	Walking Skeleton: Stand alone Player + Club + Skeleton tests

# Step 9: Bidirectional Player/Club

---

- Make changes as usual
- Eclipse will 'decorate' files that have been modified
- 'Commit' the files in eclipse
- Also - "Push" from within eclipse


```
@OneToMany(mappedBy="club", cascade=CascadeType.ALL)  
public List<Player> players;
```

```
public void addPlayer(Player player)  
{  
    player.club = this;  
    players.add(player);  
}
```

```
@ManyToOne  
public Club club;
```




# Step 9: Bitbucket Repo








**schema**  
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[Clone](#) [Fork](#) [Compare](#) [Pull request](#)

[Overview](#) [Source](#) **Commits** [Pull requests](#) [Downloads](#) 

[Commit history](#) [Feature branches](#)

[All branches](#)

Author	Commit	Message	Date
 Eamonn de Le...	<a href="#">acf2f89</a>	Bidirectional Club/Player Association	3 minutes ago
 Eamonn de Le...	<a href="#">7e0ce34</a>	Club/Player one-to-many relationship with tests	5 days ago
 Eamonn de Le...	<a href="#">89bfabc</a>	Simple standalone tests for player and club	6 days ago
 Eamonn de Le...	<a href="#">637c707</a>	Walking Skeleton: Stand alone Player + Club + Skeleton tests	6 days ago
 Eamonn de Le...	<a href="#">e11590a</a>	First Version as generated by Play	6 days ago

Showing 1–5 of 5



# Step 10: Checkout Earlier Versions

'HEAD' tag indicates the current version we are operating on

Repository: schema

Id	Message	Author	Authored Date	Committer
acf2f89	Bidirectional Club/Player Association	Eamonn de Leastar <edeli>	4 days ago	Eamonn de L
7e0ce34	Club/Player one-to-many relationship with tests	Eamonn de Leastar <edeli>	9 days ago	Eamonn de L
89bfabc	Simple standalone tests for player and club	Eamonn de Leastar <edeli>	10 days ago	Eamonn de L
637c707	Walking Skeleton: Stand alone Player + Club + Skeleton tests	Eamonn de Leastar <edeli>	10 days ago	Eamonn de L
e11590a	First Version as generated by Play	Eamonn de Leastar <edeli>	10 days ago	Eamonn de L

Select and 'Checkout'  
earlier version

Problems @ Javadoc Declaration Console History

Repository: schema

Id	Message	Author	Authored Date	Committer
acf2f89	[master] origin/HEAD			
7e0ce34	Club/Player one-to	Eamonn de Leastar <edele	4 days ago	Eamonn de L
89bfabc	Simple standalone	Eamonn de Leastar <edele	9 days ago	Eamonn de L
637c707	Walking Skeleton:	Eamonn de Leastar <edele	10 days ago	Eamonn de L
e11590a	First Version as ger	Eamonn de Leastar <edele	10 days ago	Eamonn de L

Open in Commit Viewer

Checkout

Push Commit...

Create Branch...

Delete Branch

Rename Branch...

Create Tag...

Create Patch...

Cherry Pick

Revert Commit

‘HEAD’ now set to this  
earlier version

Repository: schema

Id	Message	Author	Authored Date	Committer
acf2f89	<code>master</code> <code>origin/HEAD</code> <code>origin/master</code> <code>FETCH_HEAD</code> Bidirectional Club/Player Association	Eamonn de Leastar <edeli>	4 days ago	Eamonn de L
7e0ce34	<code>HEAD</code> Club/Player one-to-many relationship with tests	Eamonn de Leastar <edeli>	9 days ago	Eamonn de L
89bfabc	Simple standalone tests for player and club	Eamonn de Leastar <edeli>	10 days ago	Eamonn de L
637c707	Walking Skeleton: Stand alone Player + Club + Skeleton tests	Eamonn de Leastar <edeli>	10 days ago	Eamonn de L
e11590a	First Version as generated by Play	Eamonn de Leastar <edeli>	10 days ago	Eamonn de L

# Exercises

## **Check out experiments**

---

Check out and execute each version of the schema app, one at a time. Verify that each version is as expected

## **Check out to another folder**

---

Using sourcetree, see if you can check out earlier versions of the app, to different folders. See if you can have several versions of the project, side-by-side, on your pc.

## **Create another repo**

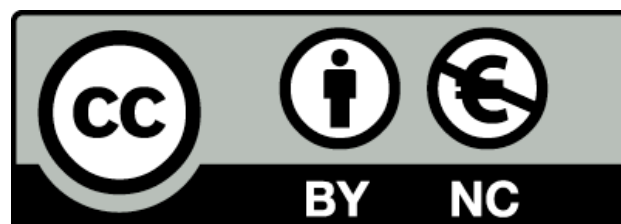
---

See if you can create a repository for a standard java application - perhaps your current programming assignment (as opposed to a Play app). Explore the repository both in eclipse and sourcetree.

## **Share your repo**

---

Get the bitbucket name of one of your classmates. Find out how to share one of your repos with them.



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