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Fatec – Curso: Análise e Desenvolvimento de Sistemas

Disciplina – Teste de Software

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Técnica de Caixa-Preta

Relatório de Teste

Projeto – SCEL – Sistema de Controle de Empréstimo e Devolução de Livros

Versão 1.0

Ambiente de Teste - <https://ts-scel.herokuapp.com/>

ID	Objetivo	Téc.teste CE/AVL	Resultado satisfatório/in sat.	Observações
REQ01-CT01	Validar o comportamento do sistema no cadastro de livro com sucesso	CE	Satisfatório	
REQ01-CT02	Validar Comportamento Editar Livro com Sucesso.	CE	Satisfatório	
REQ01-CT03	Excluir Livro com Sucesso	CE	Satisfatório	
REQ02-CT01	Validar o comportamento do sistema no cadastro de ISBN inválido	AVL	Satisfatório	O sistema impediu o cadastro do livro conforme esperado
REQ02-CT02	Validar o comportamento do sistema no cadastro de ISBN já cadastrado.	AVL	Satisfatório	O sistema impediu o cadastro do livro conforme esperado
REQ02-CT03	Validar o comportamento do sistema no cadastro de título inválido	AVL	Satisfatório	O sistema impediu o cadastro do livro conforme esperado
REQ02-CT04	Validar o	AVL	Satisfatório	O sistema impediu o cadastro do livro conforme esperado

	comportamento do sistema no cadastro de autor inválido				
REQ03-CT01	Validar o comportamento do sistema no cadastro válido de aluno	CE	Satisfatório	O sistema realizou o cadastro do aluno com sucesso	
REQ03-CT02	Validar o comportamento do sistema ao consultar o usuário	CE	Satisfatório	O sistema realizou o consultou o aluno com sucesso	
REQ03-CT03	Validar o comportamento do sistema ao alterar e excluir um usuário	CE	Satisfatório	O sistema realizou o alterou e excluiu o aluno com sucesso	
REQ04-CT01	Entrada Inválida – RA 3 dígitos	AVL	Satisfatório	Informou permitir somente 4 caracteres	
REQ04-CT02	Entrada Inválida – RA 5 dígitos	AVL	Satisfatório	Informou permitir somente 4 caracteres	
REQ04-CT03	Entrada Inválida – RA Repetido	AVL	Satisfatório	Informou dados Inválidos	
REQ04-CT04	Entrada Inválida – Nome Válido	AVL	Satisfatório	Permitiu Cadastrar com mesmos dados e RA diferente	
REQ04-CT05	Entrada Inválida – Email Em Branco	AVL	Satisfatório	E-mail deve ter entre 1 e 50 caracteres	
REQ04-CT06	Entrada Inválida – Email com mais de 50 caracteres	AVL	Satisfatório	E-mail deve ter entre 1 e 50 caracteres	
REQ04-CT07	Entrada Inválida – Cep com mais de 7 caracteres	AVL	Satisfatório	CEP deve ter 8 caracteres	
REQ04-CT08	Entrada Inválida – Cep com mais de 9	AVL	Satisfatório	CEP deve ter 8 caracteres	

	caracteres			
REQ05-CT01	O sistema deve obter o endereço do aluno com base em um CEP válido cadastrado na base dos correios.	AVL	satisfatório	Sistema retornou endereço corretamente
REQ05-CT02	O sistema deve obter o endereço do aluno com base em um CEP inválido cadastrado na base dos correios.	AVL	satisfatório	Cadastro de aluno rejeitado com cep inválido
REQ06-CT01	Validar o comportamento do sistema no registro de empréstimo de livros	CE	Satisfatório	O sistema realizou o cadastro empréstimo do livro e gerou uma data válida para devolução prevista
REQ07-CT01	Realizar Emprestimo de Livro	CE	Satisfatório	
REQ07-CT02	registrar a data da devolução do livro	AVL	Satisfatório	
REQ08-CT01	Teste de Logins Não Cadastrados	AVL	Satisfatório	
REQ09-CT01	O usuário com id “jose” somente tem acesso as funcionalidades mantem livro e registrar empréstimo (autorização).	AVL	satisfatório	Usuário jose conseguiu cadastrar livro

REQ09-CT02	O usuário com id “jose” somente tem acesso as funcionalidades mantem livro e registrar empréstimo (autorização).	AVL	satisfatório	Usuário jose conseguiu registrar empréstimo
REQ09-CT03	O usuário com id “jose” somente tem acesso as funcionalidades mantem livro e registrar empréstimo (autorização).	AVL	insatisfatorio	Usuário jose conseguiu cadastrar usuário
REQ10-CT01	Teste de Login usuário Maria – Acesso mantem aluno	AVL	Satisfatório	
REQ10-CT02	Teste de Login usuário Maria – Acesso mantem livro	AVL	Satisfatório	
REQ10-CT03	Teste de Login usuário Maria – Acesso mantem registrar emprestimo	AVL	Satisfatório	

```
// REQ01CT01CadastrarLivroComSucessoTest

import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ01CT01CadastrarLivroComSucessoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ01CT01CadastrarLivroComSucesso() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("4567");
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).sendKeys("Jose Alright");
        driver.findElement(By.id("titulo")).sendKeys("Teste do Jose");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector("html")).click();
    }
}
```

```
// REQ01CT02EditarLivroComSucessoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ01CT02EditarLivroComSucessoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ01CT02EditarLivroComSucesso() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.cssSelector("html")).click();
        driver.findElement(By.linkText("Lista de Livros")).click();
        driver.findElement(By.cssSelector("tr:nth-child(3) .btn-primary")).click();
        driver.findElement(By.id("titulo")).click();
        driver.findElement(By.id("titulo")).sendKeys("Teste do Jose");
        driver.findElement(By.cssSelector(".btn")).click();
    }
}
```

```
// REQ01CT03ExcluirLivroComSucessoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ01CT03ExcluirLivroComSucessoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ01CT03ExcluirLivroComSucesso() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.linkText("Lista de Livros")).click();
        driver.findElement(By.cssSelector("tr:nth-child(1) .delete")).click();
    }
}
```

```
// REQ02CT01CadastroIsbnInvalidoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ02CT01CadastroIsbnInvalidoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ02CT01CadastroIsbnInvalido() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1080, 975));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("123");
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).sendKeys("Fulano");
        driver.findElement(By.id("titulo")).sendKeys("Aula de testes");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// RE002CT02CadastroIsbnJaCadastradoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class RE002CT02CadastroIsbnJaCadastradoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ02CT02CadastroIsbnJaCadastrado() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1265, 975));
        driver.findElement(By.cssSelector(".form")).click();
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).click();
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.cssSelector(".col-md-4")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("1234");
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).sendKeys("Fulano");
        driver.findElement(By.cssSelector(".row:nth-child(4) > .col-md-8")).click();
        driver.findElement(By.id("titulo")).click();
        driver.findElement(By.id("titulo")).sendKeys("Aula de testes");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).click();
        {
            WebElement element = driver.findElement(By.id("autor"));
            Actions builder = new Actions(driver);
            builder.doubleClick(element).perform();
        }
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).sendKeys("ciclano");
        driver.findElement(By.id("titulo")).sendKeys("Aula de testes2");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// RE002CT03CadastroTituloInvalidoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class RE002CT03CadastroTituloInvalidoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ002CT03CadastroTituloInvalido() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1265, 975));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("1234");
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).sendKeys("Fulano");
        driver.findElement(By.cssSelector(".row:nth-child(4) > .col-md-8")).click();
        driver.findElement(By.id("titulo")).click();
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.cssSelector(".btn:nth-child(1)")).click();
        driver.findElement(By.id("titulo")).click();

        driver.findElement(By.id("titulo")).sendKeys("bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb");
        driver.findElement(By.cssSelector(".btn:nth-child(1)")).click();
    }
}
```



```
//REQ03CT01CadastroAlunoComSucessoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ03CT01CadastroAlunoComSucessoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ03CT01CadastroAlunoComSucesso() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1265, 975));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("9642");
        driver.findElement(By.id("nome")).sendKeys("Fulano");
        driver.findElement(By.id("email")).sendKeys("fulano@fatec.sp.gov.br");
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.id("nome")).sendKeys("ciclano");
        driver.findElement(By.cssSelector(".row:nth-child(4) > .form-group")).click();
        driver.findElement(By.id("email")).sendKeys("ciclano@fatec.sp.gov.br");
        driver.findElement(By.cssSelector(".row:nth-child(2) > .col-md-8:nth-child(1)").click();
        driver.findElement(By.id("cep")).click();
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.id("cep")).sendKeys("03276110");
        driver.findElement(By.cssSelector("html")).click();
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ03CT02ConsultarUsuarioTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ03CT02ConsultarUsuarioTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    public String waitForWindow(int timeout) {
        try {
            Thread.sleep(timeout);
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
        Set<String> whNow = driver.getWindowHandles();
        Set<String> whThen = (Set<String>) vars.get("window_handles");
        if (whNow.size() > whThen.size()) {
            whNow.removeAll(whThen);
        }
        return whNow.iterator().next();
    }
    @Test
    public void rE003CT02ConsultarUsuario() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1265, 975));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Alunos")).click();
        vars.put("window_handles", driver.getWindowHandles());
        driver.findElement(By.cssSelector(".btn:nth-child(2)")).click();
        vars.put("win6934", waitForWindow(2000));
        driver.switchTo().window(vars.get("win6934").toString());
    }
}
```

```
// RE003CT03EdicaoAlteracaoExclusaoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class RE003CT03EdicaoAlteracaoExclusaoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    public String waitForWindow(int timeout) {
        try {
            Thread.sleep(timeout);
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
        Set<String> whNow = driver.getWindowHandles();
        Set<String> whThen = (Set<String>) vars.get("window_handles");
        if (whNow.size() > whThen.size()) {
            whNow.removeAll(whThen);
        }
        return whNow.iterator().next();
    }
    @Test
    public void rE003CT03EdicaoAlteracaoExclusao() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1265, 975));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Alunos")).click();
        vars.put("window_handles", driver.getWindowHandles());
        driver.findElement(By.cssSelector(".btn:nth-child(2)").click();
        vars.put("win4639", waitForWindow(2000));
        driver.switchTo().window(vars.get("win4639").toString());
        driver.findElement(By.cssSelector("tr:nth-child(4) .btn-primary")).click();
        driver.findElement(By.cssSelector(".container")).click();
        driver.findElement(By.id("nome")).sendKeys("ciclano atualizado");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector("tr:nth-child(4) .delete")).click();
    }
}
```

```
// REQ04CT01RAInvalido3digitosTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT01RAInvalido3digitosTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT01RAInvalido3digitos() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("123");
        driver.findElement(By.id("nome")).sendKeys("Aluno Teste");
        driver.findElement(By.id("email")).sendKeys("aluno@teste.com.br");
        driver.findElement(By.id("cep")).sendKeys("01511000");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ04CT02RAInvalido5DigitosTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT02RAInvalido5DigitosTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT02RAInvalido5Digitos() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("12345");
        driver.findElement(By.id("nome")).sendKeys("Aluno Teste");
        driver.findElement(By.id("email")).sendKeys("aluno@teste.com.br");
        driver.findElement(By.id("cep")).sendKeys("01511000");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ04CT03RARepetidoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT03RARepetidoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT03RARepetido() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("1234");
        driver.findElement(By.id("nome")).sendKeys("Aluno Teste");
        driver.findElement(By.id("email")).sendKeys("aluno@teste.com.br");
        driver.findElement(By.id("cep")).sendKeys("01511000");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ04CT04NomeVlidoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT04NomeVlidoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT04NomeVlido() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("5647");
        driver.findElement(By.id("nome")).sendKeys("Aluno Teste");
        driver.findElement(By.id("email")).sendKeys("aluno@teste.com.br");
        driver.findElement(By.id("cep")).sendKeys("01511000");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ04CT05Email0CaracteresTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT05Email0CaracteresTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT05Email0Caracteres() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("2564");
        driver.findElement(By.id("nome")).sendKeys("Teste Email");
        driver.findElement(By.id("cep")).sendKeys("01511000");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ04CT06Email51caracteres1Test
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT06Email51caracteres1Test {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT06Email51caracteres1() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("3145");
        driver.findElement(By.id("nome")).sendKeys("Aluno Teste");

        driver.findElement(By.id("email")).sendKeys("testeeeeeeeetesteeeeeee@testeeeeeeeetesteeeeeee.com.br");
    });
        driver.findElement(By.id("cep")).sendKeys("01511000");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ04CT07Cep7CaracteresTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT07Cep7CaracteresTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT07Cep7Caracteres() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("8471");
        driver.findElement(By.id("nome")).sendKeys("Aluno Teste");
        driver.findElement(By.id("email")).sendKeys("aluno@teste.com.br");
        driver.findElement(By.id("cep")).sendKeys("0151100");
        driver.findElement(By.cssSelector(".btn:nth-child(1))).click();
    }
}
```

```
// REQ04CT08Cep9CaracteresTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ04CT08Cep9CaracteresTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ04CT08Cep9Caracteres() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("8471");
        driver.findElement(By.id("nome")).sendKeys("Aluno Teste");
        driver.findElement(By.id("email")).sendKeys("aluno@teste.com.br");
        driver.findElement(By.id("cep")).sendKeys("0151100");
        driver.findElement(By.cssSelector(".btn:nth-child(1))).click();
    }
}
```

```
// REQ05CT01CepVlidoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ05CT01CepVlidoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ05CT01CepVlido() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1920, 780));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.name("password")).sendKeys(Keys.ENTER);
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("8888");
        driver.findElement(By.id("name")).click();
        driver.findElement(By.id("name")).sendKeys("josephino");
        driver.findElement(By.id("email")).sendKeys("j@j.com");
        driver.findElement(By.id("cep")).sendKeys("01310100");
        driver.findElement(By.cssSelector(".btn:nth-child(1))).click();
        driver.findElement(By.cssSelector("tr:nth-child(6))).click();
    }
}
```

```
// REQ05CT02CepInválidoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ05CT02CepInválidoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ05CT02CepInválido() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1920, 780));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.name("password")).sendKeys(Keys.ENTER);
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("9999");
        driver.findElement(By.id("name")).sendKeys("zezinho");
        driver.findElement(By.id("email")).sendKeys("z@z.com");
        driver.findElement(By.id("cep")).sendKeys("99999999");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.cssSelector(".row:nth-child(4)").click();
    }
}
```

```
// REQ06CT01RegistroDeEmprestimoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ06CT01RegistroDeEmprestimoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    public String waitForWindow(int timeout) {
        try {
            Thread.sleep(timeout);
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
        Set<String> whNow = driver.getWindowHandles();
        Set<String> whThen = (Set<String>) vars.get("window_handles");
        if (whNow.size() > whThen.size()) {
            whNow.removeAll(whThen);
        }
        return whNow.iterator().next();
    }
    @Test
    public void rEQ06CT01RegistroDeEmprestimo() {
        driver.get("https://ts-scel.herokuapp.com/");
        driver.manage().window().setSize(new Dimension(1265, 975));
        driver.findElement(By.linkText("Emprestimo")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("1334");
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("9765");
        driver.findElement(By.cssSelector(".card-body")).click();
        driver.findElement(By.cssSelector(".btn:nth-child(1)")).click();
        vars.put("window_handles", driver.getWindowHandles());
        driver.findElement(By.cssSelector(".btn:nth-child(2)")).click();
        vars.put("win1376", waitForWindow(2000));
        driver.switchTo().window(vars.get("win1376").toString());
        driver.findElement(By.cssSelector("tr:nth-child(4) .btn")).click();
    }
}
```

```
// REQ07CT01GravarDataDevoluoEmprestimo1Test
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ07CT01GravarDataDevoluoEmprestimo1Test {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ07CT01GravarDataDevoluoEmprestimo1() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.cssSelector("body")).click();
        {
            WebElement element = driver.findElement(By.cssSelector("body"));
            Actions builder = new Actions(driver);
            builder.doubleClick(element).perform();
        }
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Emprestimo")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("1239");
        driver.findElement(By.id("ra")).sendKeys("5647");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ07CT02GravarEmprestimoISBNAlunoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ07CT02GravarEmprestimoISBNAlunoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ07CT02GravarEmprestimoISBNAluno() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.cssSelector("body")).click();
        {
            WebElement element = driver.findElement(By.cssSelector("body"));
            Actions builder = new Actions(driver);
            builder.doubleClick(element).perform();
        }
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Emprestimo")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("1239");
        driver.findElement(By.id("ra")).sendKeys("5647");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ08CT01TesteUsuarioNaoCadastradoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ08CT01TesteUsuarioNaoCadastradoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ08CT01TesteUsuarioNaoCadastrado() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.name("username")).sendKeys("TESTE");
        driver.findElement(By.name("password")).sendKeys("aleatoria");
        driver.findElement(By.cssSelector("button")).click();
    }
}
```

```
// REQ09CT01AcessoAlunoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ09CT01AcessoAlunoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ09CT01AcessoAluno() {
        driver.get("https://ts-scel.herokuapp.com/login?error");
        driver.manage().window().setSize(new Dimension(1920, 780));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("4455");
        driver.findElement(By.id("name")).click();
        driver.findElement(By.id("name")).click();
        driver.findElement(By.id("name")).sendKeys("Alisson");
        driver.findElement(By.id("email")).sendKeys("a@a.com");
        driver.findElement(By.id("cep")).sendKeys(" 01310100");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.id("cep")).click();
        driver.findElement(By.id("cep")).click();
        driver.findElement(By.id("cep")).sendKeys("01310100");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ09CT01AcessoAlunoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ09CT01AcessoAlunoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ09CT01AcessoAluno() {
        driver.get("https://ts-scel.herokuapp.com/login?error");
        driver.manage().window().setSize(new Dimension(1920, 780));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("4455");
        driver.findElement(By.id("name")).click();
        driver.findElement(By.id("name")).click();
        driver.findElement(By.id("name")).sendKeys("Alisson");
        driver.findElement(By.id("email")).sendKeys("a@a.com");
        driver.findElement(By.id("cep")).sendKeys(" 01310100");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.id("cep")).click();
        driver.findElement(By.id("cep")).click();
        driver.findElement(By.id("cep")).sendKeys("01310100");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
    }
}
```

```
// REQ09CT02AcessoLivrosTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ09CT02AcessoLivrosTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ09CT02AcessoLivros() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1920, 780));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).sendKeys("jose");
        driver.findElement(By.name("password")).sendKeys("123");
        driver.findElement(By.name("password")).sendKeys(Keys.ENTER);
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("9781405507677");
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).sendKeys("Stephenie Meyer");
        driver.findElement(By.id("titulo")).click();
        driver.findElement(By.id("titulo")).sendKeys("Crepúsculo");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click());
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.cssSelector(".row:nth-child(2)").click();
        driver.findElement(By.id("isbn")).sendKeys("9781");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector("html").click();
        driver.findElement(By.cssSelector("tr:nth-child(3)").click();
    }
}
```

```
// REQ10CT01MariaManterAlunoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ10CT01MariaManterAlunoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    public String waitForWindow(int timeout) {
        try {
            Thread.sleep(timeout);
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
        Set<String> whNow = driver.getWindowHandles();
        Set<String> whThen = (Set<String>) vars.get("window_handles");
        if (whNow.size() > whThen.size()) {
            whNow.removeAll(whThen);
        }
        return whNow.iterator().next();
    }
    @Test
    public void rE010CT01MariaManterAluno() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.cssSelector("form")).click();
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Alunos")).click();
        driver.findElement(By.id("ra")).click();
        driver.findElement(By.id("ra")).sendKeys("1425");
        driver.findElement(By.id("nome")).sendKeys("Teste Maria");
        driver.findElement(By.id("email")).sendKeys("maria@maria.com.br");
        driver.findElement(By.id("cep")).sendKeys("01511000");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector("tr:nth-child(5) .delete")).click();
        driver.findElement(By.cssSelector("tr:nth-child(5) .btn-primary")).click();
        driver.findElement(By.id("name")).click();
        driver.findElement(By.id("name")).sendKeys("Teste Maria Edit");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.linkText("Alunos")).click();
        vars.put("window_handles", driver.getWindowHandles());
        driver.findElement(By.cssSelector(".btn:nth-child(2)").click();
        vars.put("win3014", waitForWindow(2000));
        driver.switchTo().window(vars.get("win3014").toString());
    }
}
```

```
// REQ10CT02MariaManterLivroTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ10CT02MariaManterLivroTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ10CT02MariaManterLivro() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Livros")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("1425");
        driver.findElement(By.id("autor")).sendKeys("Maria Tester");
        driver.findElement(By.id("titulo")).sendKeys("Teste da Maria");
        driver.findElement(By.cssSelector(".btn:nth-child(1)").click();
        driver.findElement(By.cssSelector("tr:nth-child(4) .btn-primary").click();
        driver.findElement(By.id("autor")).click();
        driver.findElement(By.id("autor")).sendKeys("Maria Tester Edit");
        driver.findElement(By.cssSelector(".btn").click();
        driver.findElement(By.cssSelector("tr:nth-child(4) .delete").click();
    }
}
```

```
// REQ10CT03MariaRealizarEmprestimoTest
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
import static org.junit.Assert.*;
import static org.hamcrest.CoreMatchers.is;
import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class REQ10CT03MariaRealizarEmprestimoTest {
    private WebDriver driver;
    private Map<String, Object> vars;
    JavascriptExecutor js;
    @Before
    public void setUp() {
        driver = new ChromeDriver();
        js = (JavascriptExecutor) driver;
        vars = new HashMap<String, Object>();
    }
    @After
    public void tearDown() {
        driver.quit();
    }
    @Test
    public void rEQ10CT03MariaRealizarEmprestimo() {
        driver.get("https://ts-scel.herokuapp.com/login");
        driver.manage().window().setSize(new Dimension(1417, 1029));
        driver.findElement(By.name("username")).click();
        driver.findElement(By.name("username")).click();
        {
            WebElement element = driver.findElement(By.name("username"));
            Actions builder = new Actions(driver);
            builder.doubleClick(element).perform();
        }
        driver.findElement(By.name("username")).sendKeys("maria");
        driver.findElement(By.name("password")).sendKeys("456");
        driver.findElement(By.cssSelector("button")).click();
        driver.findElement(By.linkText("Empréstimo")).click();
        driver.findElement(By.id("isbn")).click();
        driver.findElement(By.id("isbn")).sendKeys("1234");
        driver.findElement(By.id("ra")).sendKeys("1234");
        driver.findElement(By.cssSelector("body")).click();
        driver.findElement(By.cssSelector(".btn:nth-child(1"))).click();
    }
}
```