Sporty Shoes

1. Introduction.

Sporty Shoes e-commerce website for managing products in portal and selling shoes to customers online.

In this document you can see the prototype of product operations for both page Admin and Customer interaction.

2. Modules in the Project.

a. Registration Page.

b. Login Page.

c. User Login.

d. Change Password.

e. Dashboard.

f. Search Products.

g. Add Cart/View Cart.

h. View Previous Active Orders.

i. Pay and Buy Products.

j. Add Articles.

3. JAVA (Core)Technology Used:

a. @Controller: for using class as controller class

b. @Service: To indicate class as Service

c. @Repository: To indicate class/interface as Repository to contact with Database.

d. @Entity: To indicate class as table in Database.

e. @Autowired: to auto connect between Spring Beans, Services, Repositories.

f. @PostMapping: to indicate URL links with Servlet post method

g. @GetMapping: to indicate URL links with Get method in servlet.

h. @RequestParam and @RequestBody: Get values from webpage.

i. javax.servlet.http.HttpSession: To manage Sessions with Http protocol.

j. org.springframework.ui.Model: to send data to view

k. java.sql.SQLException: To manage Database exceptions

l. Java.util.regex: to check string patterns like email.

m. JpaRepository: to get methods for CRUD operations.

n. jpa.repository.Query (@Query): To write native queries for custom methods for CRUD operations.

o. ThymeLeaf Template tags in HTML.

p. @SpringBootApplication: To initialize spring boot.

Technology Used:

1. Eclipse IDE

2. HTML

3. MySQL

4. Java Concepts

a. Spring Boot DevTools.

b. Spring Web

c. Spring Data JPA

d. ThymeLeaf

4.Sprint Wise Work.

The Sprints have been planned of how the developer can develop with the User interface development and also with the time span of the project was managed within 2 weeks of completion.

So, each sprint was planned as per the schedule of 4 days for development and one day for testing and the other day for the bug Fixes.

1.	1	a. Initialized the project, made it Spring boot starter project and added dependencies: MySQL Connector, Hibernate libraries. b. Setting MySQL database and entities relationship. c. Configured hibernate and mapped classes as entities.
2.	2	a. Planned the structure of the website and navigation across it. b. Made the controller files.

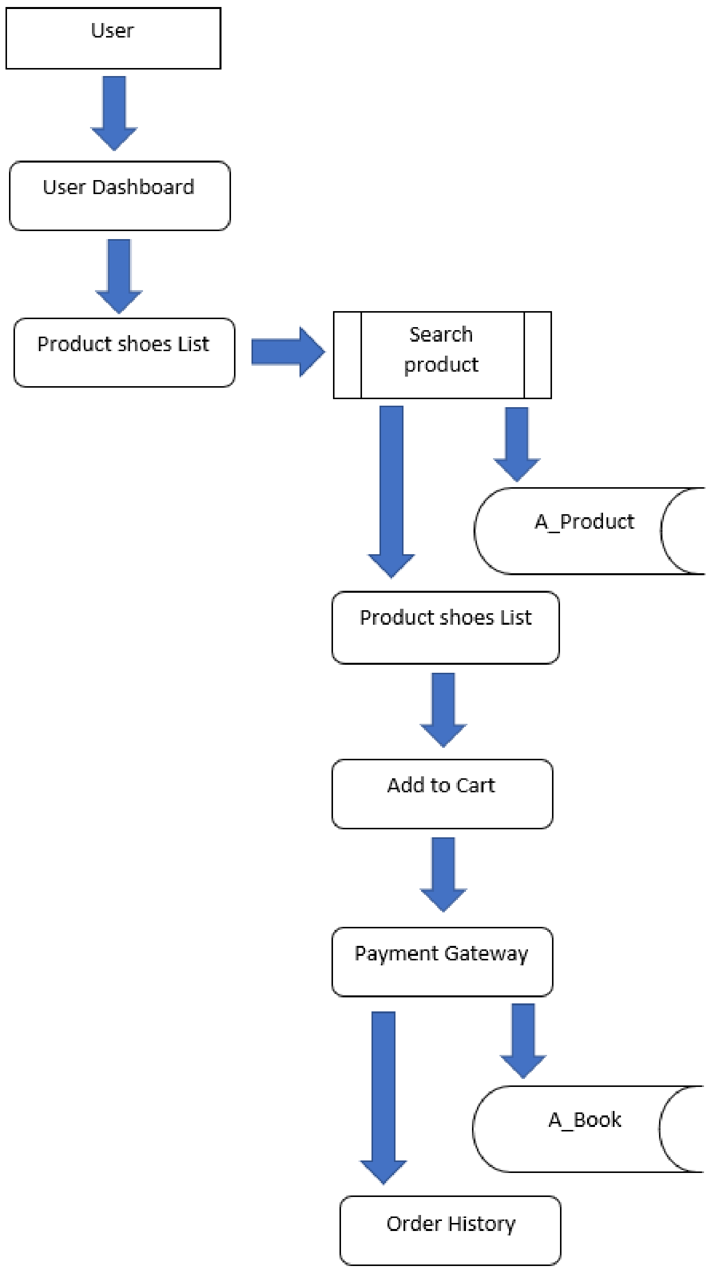
		c. Made a Header and footer jsp pages to include it across every page.
3.	3	a. Made the customer Login and Registration page. Admin Login: which is authorised according to data in the database. Change Password: Admin needs to enter the old password to authorise. Manage Products: Add, Delete, Update Products. Manage Customers: View, Delete and Search Customers. Manage Purchases/Orders: View, Delete and Search Orders.

5.Project GitHub Link.

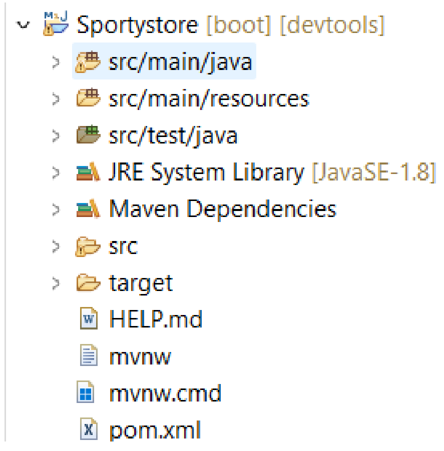
GitHub Link. https://github.com/sudhee46/SshRemoteRepo/tree/master/Project_Phase3

6.Project Code.

User Flow Char Diagram



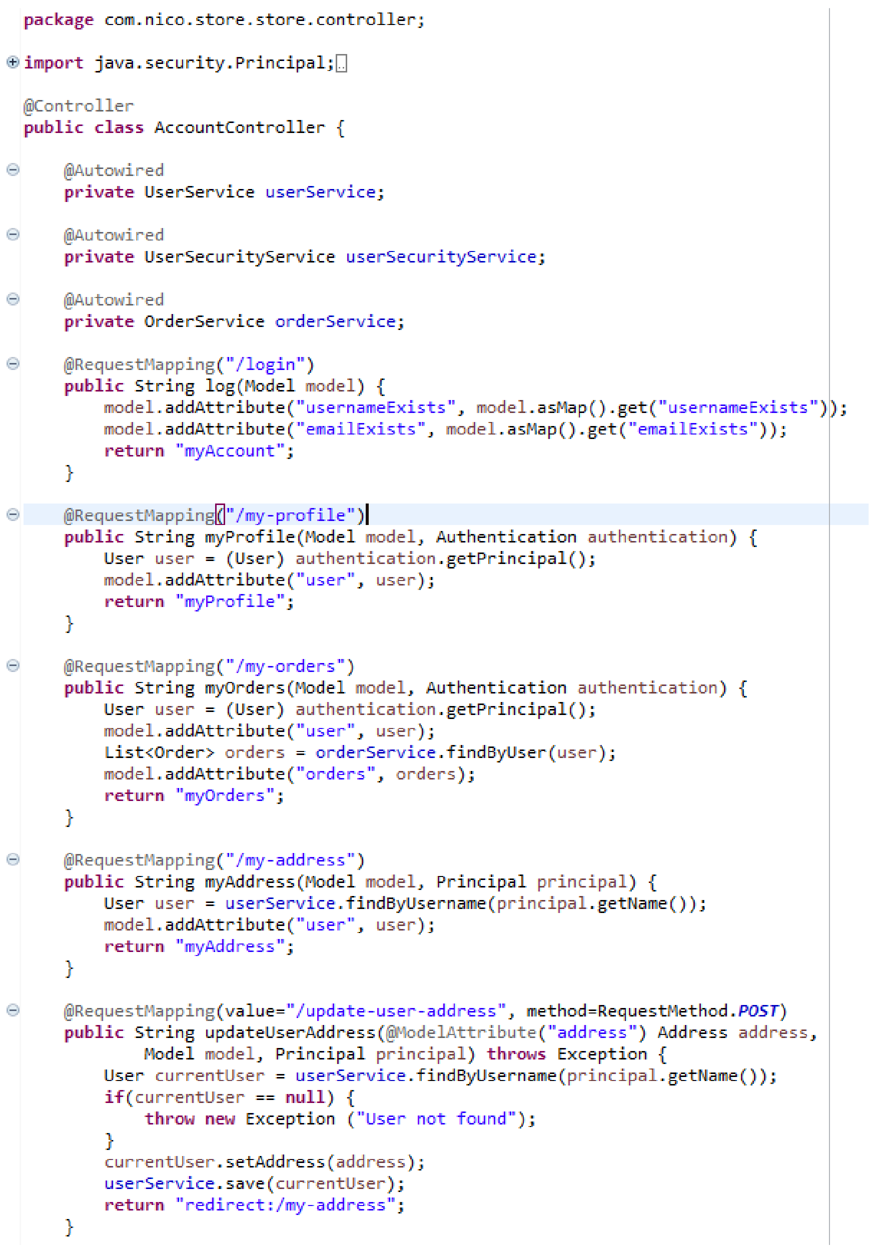
1.Folder Structure:



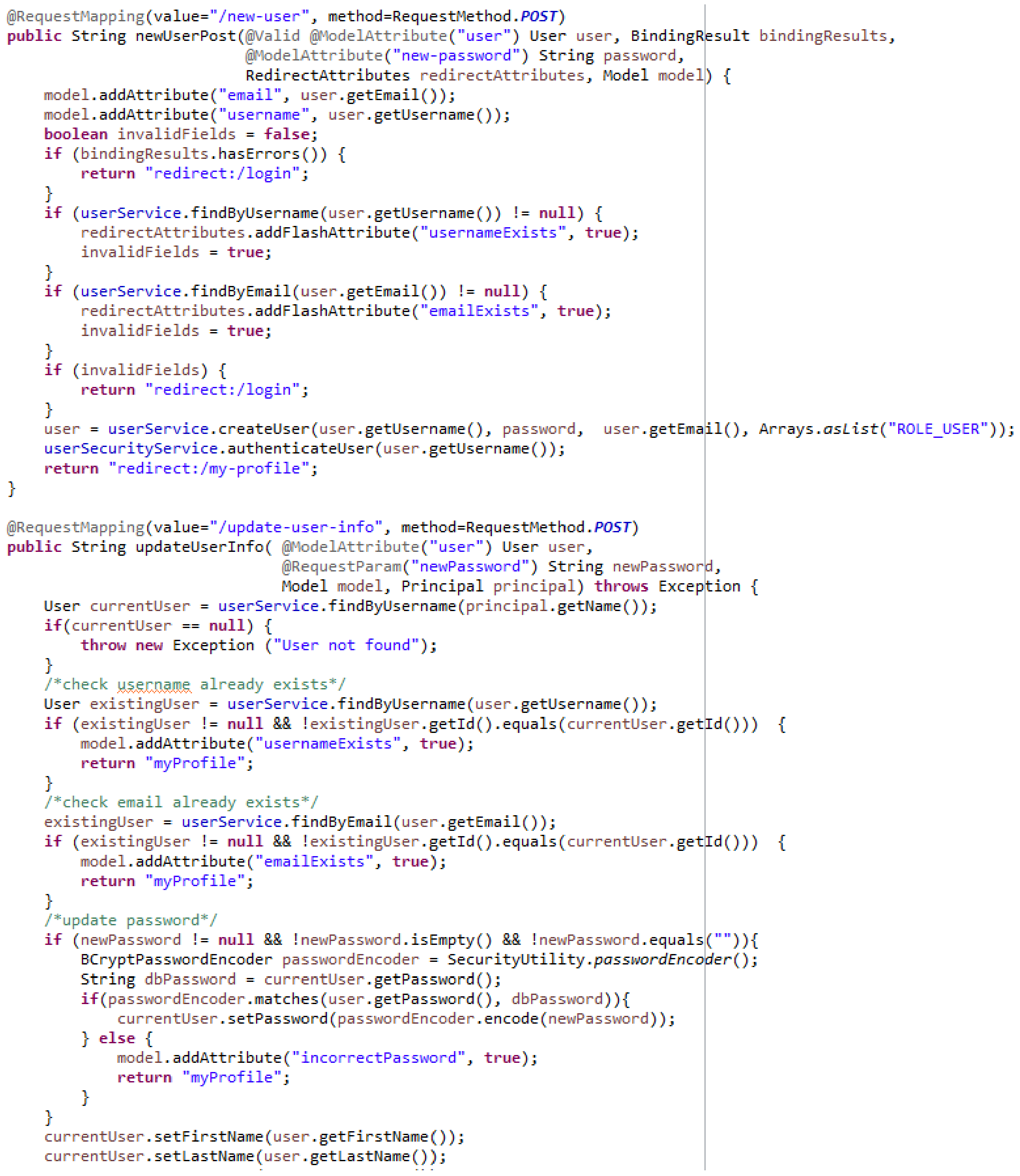
```
Sportystore [boot] [devtools]
    src/main/java
    src/main/resources
    src/test/java
    JRE System Library [JavaSE-1.8]
    Maven Dependencies
    src
    target
    HELP.md
    mvnw
    mvnw.cmd
    pom.xml
```

2.Controller.

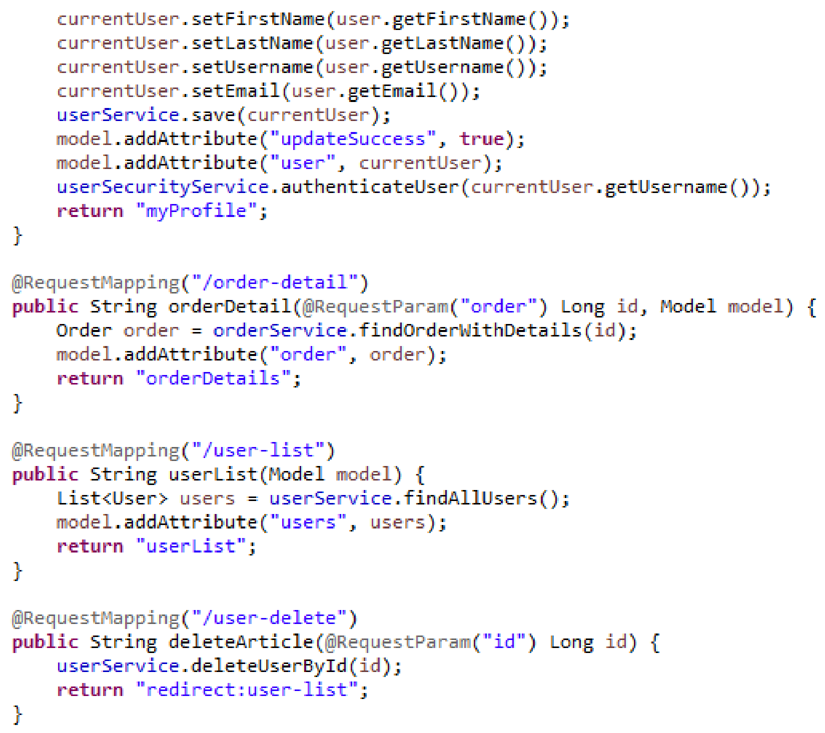
a. AccountController.java



```java
package com.nico.store.store.controller;

import java.security.Principal;

@Controller
public class AccountController {

    @Autowired
    private UserService userService;

    @Autowired
    private UserSecurityService userSecurityService;

    @Autowired
    private OrderService orderService;

    @RequestMapping("/login")
    public String log(Model model) {
        model.addAttribute("usernameExists", model.asMap().get("usernameExists"));
        model.addAttribute("emailExists", model.asMap().get("emailExists"));
        return "myAccount";
    }

    @RequestMapping("/my-profile")
    public String myProfile(Model model, Authentication authentication) {
        User user = (User) authentication.getPrincipal();
        model.addAttribute("user", user);
        return "myProfile";
    }

    @RequestMapping("/my-orders")
    public String myOrders(Model model, Authentication authentication) {
        User user = (User) authentication.getPrincipal();
        model.addAttribute("user", user);
        List<Order> orders = orderService.findByUser(user);
        model.addAttribute("orders", orders);
        return "myOrders";
    }

    @RequestMapping("/my-address")
    public String myAddress(Model model, Principal principal) {
        User user = userService.findByUsername(principal.getName());
        model.addAttribute("user", user);
        return "myAddress";
    }

    @RequestMapping(value="/update-user-address", method=RequestMethod.POST)
    public String updateUserAddress(@ModelAttribute("address") Address address,
            Model model, Principal principal) throws Exception {
        User currentUser = userService.findByUsername(principal.getName());
        if(currentUser == null) {
            throw new Exception ("User not found");
        }
        currentUser.setAddress(address);
        userService.save(currentUser);
        return "redirect:/my-address";
    }
```

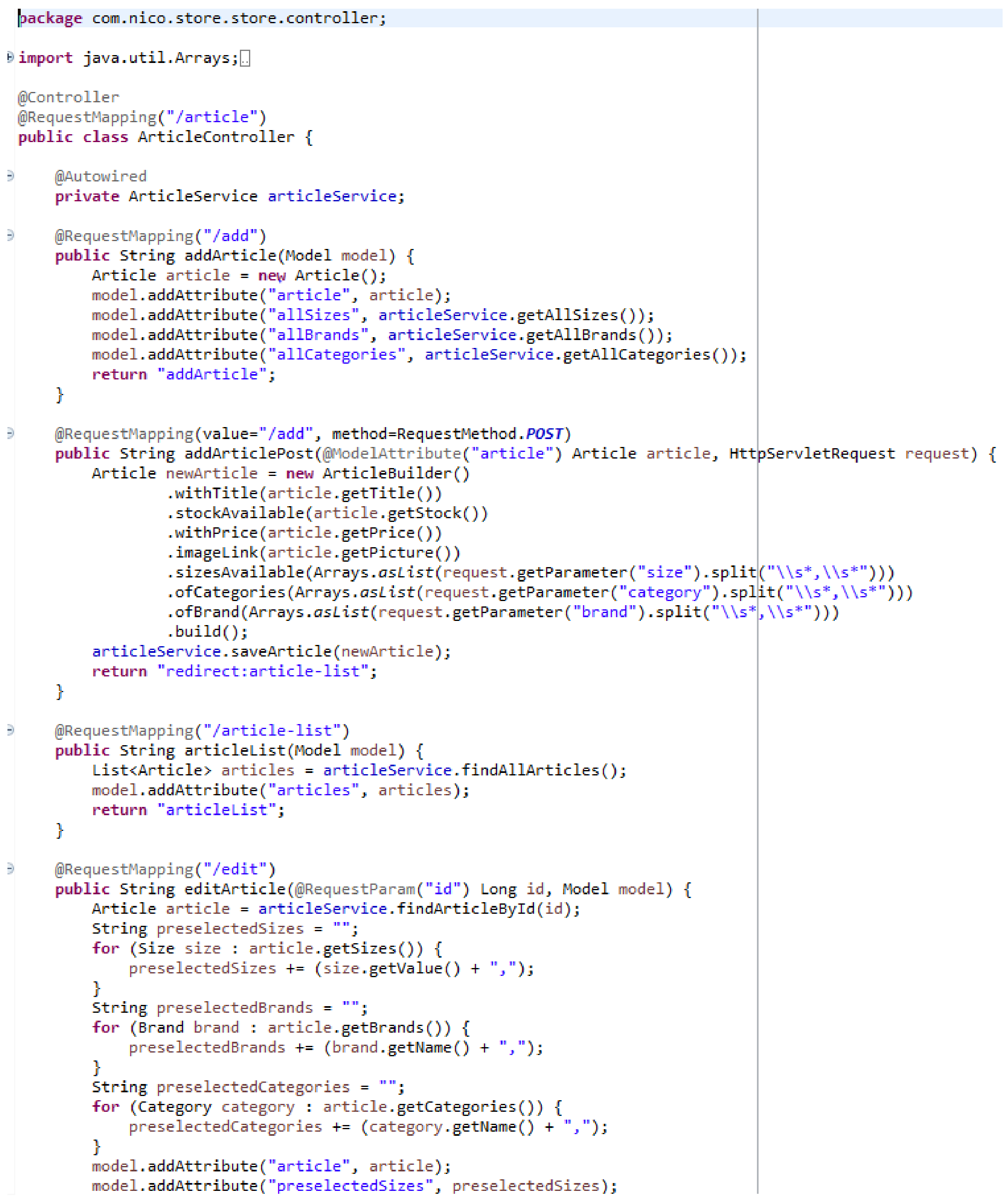


```java
@RequestMapping(value="/new-user", method=RequestMethod.POST)
public String newUserPost(@Valid @ModelAttribute("user") User user, BindingResult bindingResults,
                          @ModelAttribute("new-password") String password,
                          RedirectAttributes redirectAttributes, Model model) {
    model.addAttribute("email", user.getEmail());
    model.addAttribute("username", user.getUsername());
    boolean invalidFields = false;
    if (bindingResults.hasErrors()) {
        return "redirect:/login";
    }
    if (userService.findByUsername(user.getUsername()) != null) {
        redirectAttributes.addFlashAttribute("usernameExists", true);
        invalidFields = true;
    }
    if (userService.findByEmail(user.getEmail()) != null) {
        redirectAttributes.addFlashAttribute("emailExists", true);
        invalidFields = true;
    }
    if (invalidFields) {
        return "redirect:/login";
    }
    user = userService.createUser(user.getUsername(), password,  user.getEmail(), Arrays.asList("ROLE_USER"));
    userSecurityService.authenticateUser(user.getUsername());
    return "redirect:/my-profile";
}

@RequestMapping(value="/update-user-info", method=RequestMethod.POST)
public String updateUserInfo( @ModelAttribute("user") User user,
                              @RequestParam("newPassword") String newPassword,
                              Model model, Principal principal) throws Exception {
    User currentUser = userService.findByUsername(principal.getName());
    if(currentUser == null) {
        throw new Exception ("User not found");
    }
    /*check username already exists*/
    User existingUser = userService.findByUsername(user.getUsername());
    if (existingUser != null && !existingUser.getId().equals(currentUser.getId()))  {
        model.addAttribute("usernameExists", true);
        return "myProfile";
    }
    /*check email already exists*/
    existingUser = userService.findByEmail(user.getEmail());
    if (existingUser != null && !existingUser.getId().equals(currentUser.getId()))  {
        model.addAttribute("emailExists", true);
        return "myProfile";
    }
    /*update password*/
    if (newPassword != null && !newPassword.isEmpty() && !newPassword.equals("")){
        BCryptPasswordEncoder passwordEncoder = SecurityUtility.passwordEncoder();
        String dbPassword = currentUser.getPassword();
        if(passwordEncoder.matches(user.getPassword(), dbPassword)){
            currentUser.setPassword(passwordEncoder.encode(newPassword));
        } else {
            model.addAttribute("incorrectPassword", true);
            return "myProfile";
        }
    }
    currentUser.setFirstName(user.getFirstName());
    currentUser.setLastName(user.getLastName());
```

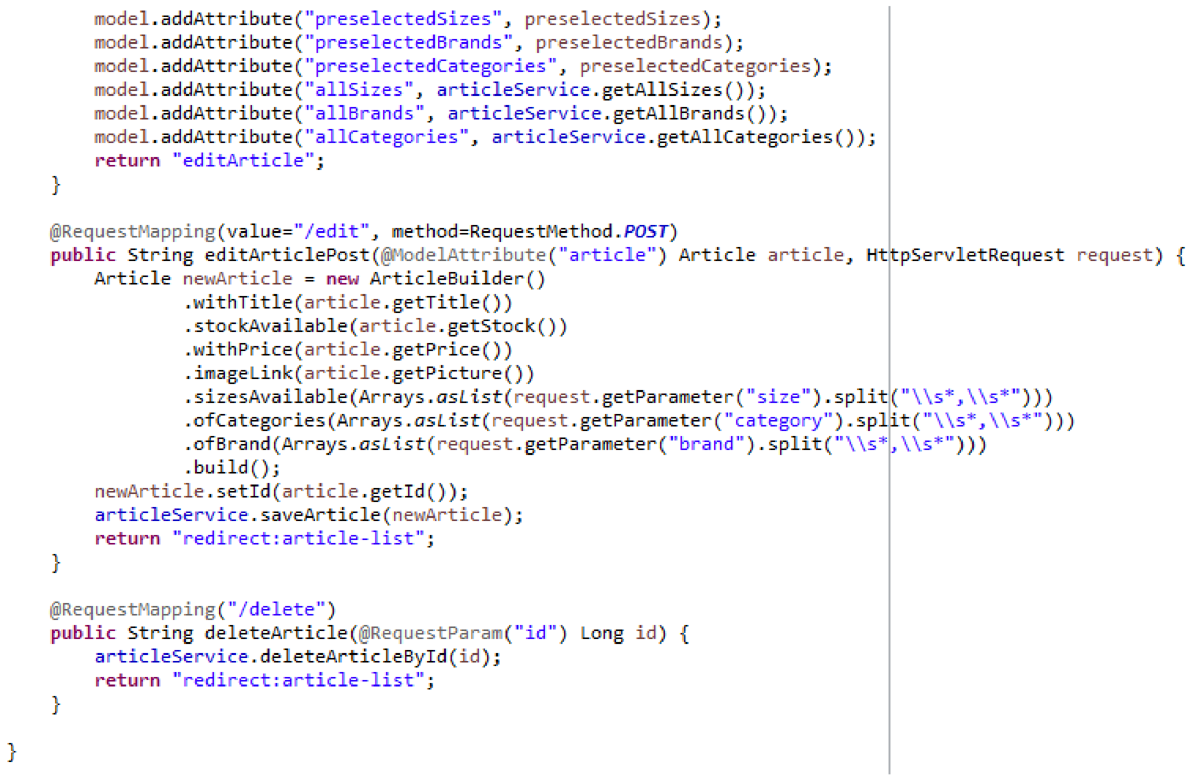


```
        currentUser.setFirstName(user.getFirstName());
        currentUser.setLastName(user.getLastName());
        currentUser.setUsername(user.getUsername());
        currentUser.setEmail(user.getEmail());
        userService.save(currentUser);
        model.addAttribute("updateSuccess", true);
        model.addAttribute("user", currentUser);
        userSecurityService.authenticateUser(currentUser.getUsername());
        return "myProfile";
    }

    @RequestMapping("/order-detail")
    public String orderDetail(@RequestParam("order") Long id, Model model) {
        Order order = orderService.findOrderWithDetails(id);
        model.addAttribute("order", order);
        return "orderDetails";
    }

    @RequestMapping("/user-list")
    public String userList(Model model) {
        List<User> users = userService.findAllUsers();
        model.addAttribute("users", users);
        return "userList";
    }

    @RequestMapping("/user-delete")
    public String deleteArticle(@RequestParam("id") Long id) {
        userService.deleteUserById(id);
        return "redirect:user-list";
    }
```

b.ArticleController.java

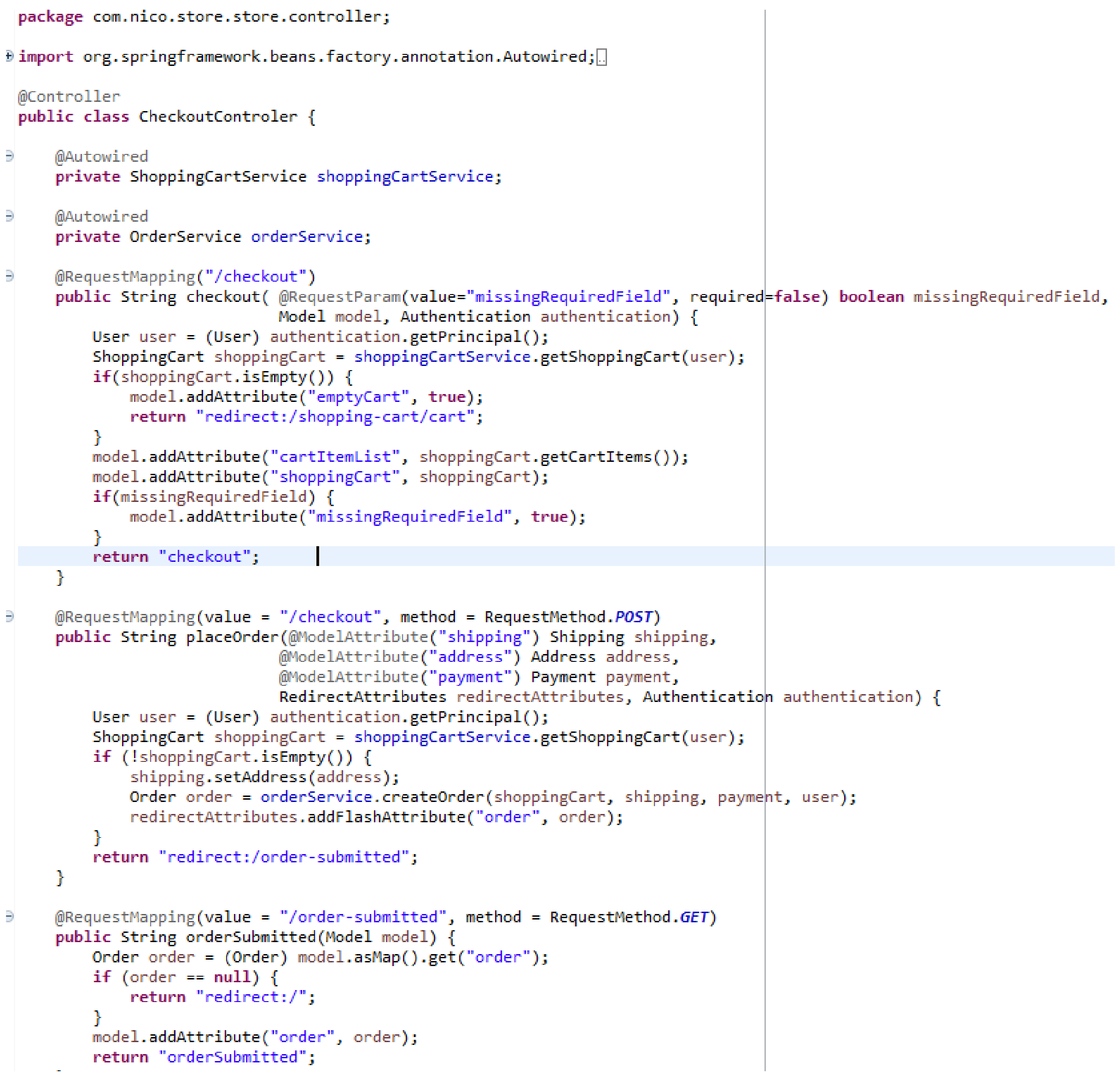


```java
package com.nico.store.store.controller;

import java.util.Arrays;

@Controller
@RequestMapping("/article")
public class ArticleController {

    @Autowired
    private ArticleService articleService;

    @RequestMapping("/add")
    public String addArticle(Model model) {
        Article article = new Article();
        model.addAttribute("article", article);
        model.addAttribute("allSizes", articleService.getAllSizes());
        model.addAttribute("allBrands", articleService.getAllBrands());
        model.addAttribute("allCategories", articleService.getAllCategories());
        return "addArticle";
    }

    @RequestMapping(value="/add", method=RequestMethod.POST)
    public String addArticlePost(@ModelAttribute("article") Article article, HttpServletRequest request) {
        Article newArticle = new ArticleBuilder()
                .withTitle(article.getTitle())
                .stockAvailable(article.getStock())
                .withPrice(article.getPrice())
                .imageLink(article.getPicture())
                .sizesAvailable(Arrays.asList(request.getParameter("size").split("\\s*,\\s*")))
                .ofCategories(Arrays.asList(request.getParameter("category").split("\\s*,\\s*")))
                .ofBrand(Arrays.asList(request.getParameter("brand").split("\\s*,\\s*")))
                .build();
        articleService.saveArticle(newArticle);
        return "redirect:article-list";
    }

    @RequestMapping("/article-list")
    public String articleList(Model model) {
        List<Article> articles = articleService.findAllArticles();
        model.addAttribute("articles", articles);
        return "articleList";
    }

    @RequestMapping("/edit")
    public String editArticle(@RequestParam("id") Long id, Model model) {
        Article article = articleService.findArticleById(id);
        String preselectedSizes = "";
        for (Size size : article.getSizes()) {
            preselectedSizes += (size.getValue() + ",");
        }
        String preselectedBrands = "";
        for (Brand brand : article.getBrands()) {
            preselectedBrands += (brand.getName() + ",");
        }
        String preselectedCategories = "";
        for (Category category : article.getCategories()) {
            preselectedCategories += (category.getName() + ",");
        }
        model.addAttribute("article", article);
        model.addAttribute("preselectedSizes", preselectedSizes);
```



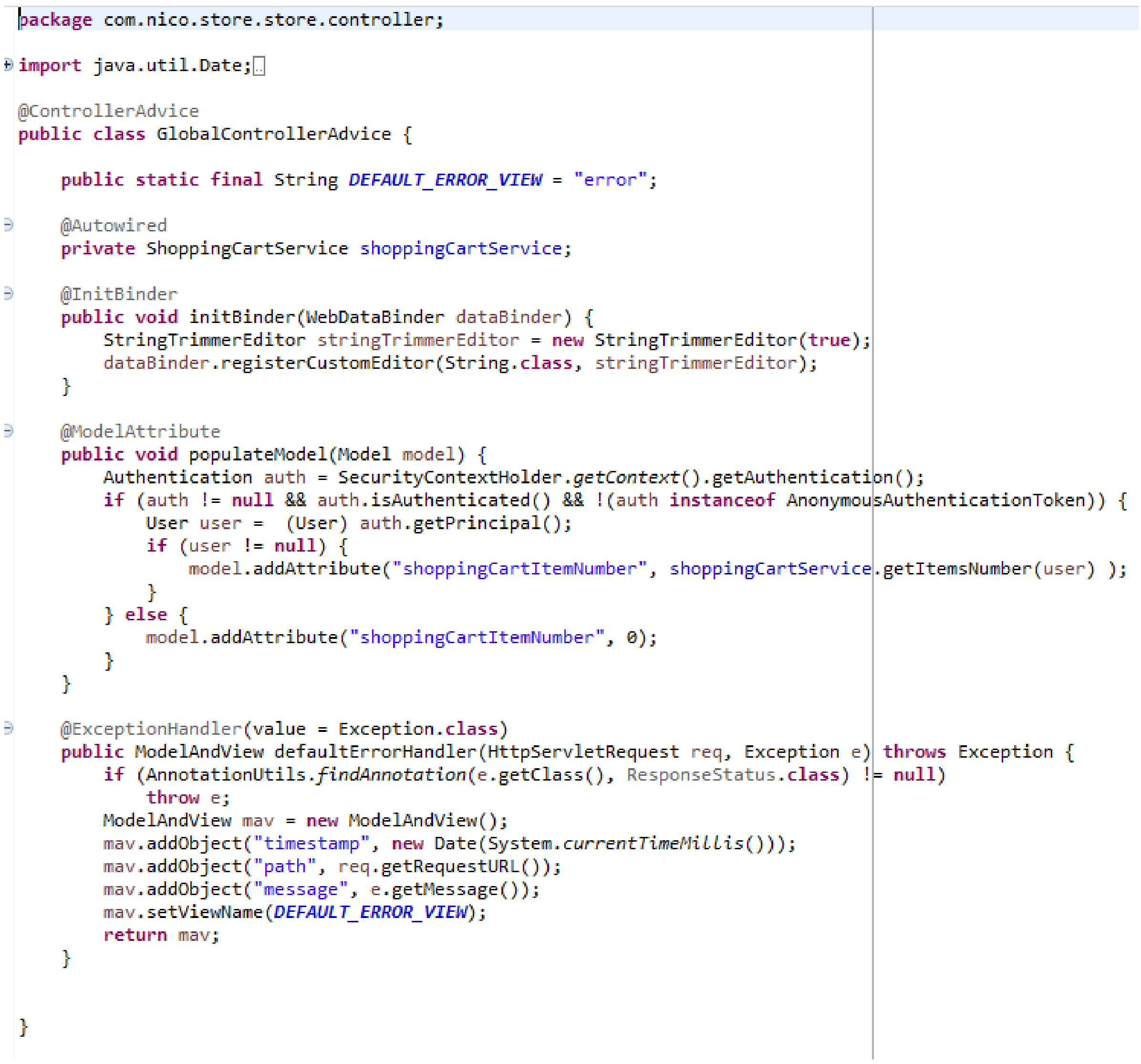
```
        model.addAttribute("preselectedSizes", preselectedSizes);
        model.addAttribute("preselectedBrands", preselectedBrands);
        model.addAttribute("preselectedCategories", preselectedCategories);
        model.addAttribute("allSizes", articleService.getAllSizes());
        model.addAttribute("allBrands", articleService.getAllBrands());
        model.addAttribute("allCategories", articleService.getAllCategories());
        return "editArticle";
    }

    @RequestMapping(value="/edit", method=RequestMethod.POST)
    public String editArticlePost(@ModelAttribute("article") Article article, HttpServletRequest request) {
        Article newArticle = new ArticleBuilder()
                .withTitle(article.getTitle())
                .stockAvailable(article.getStock())
                .withPrice(article.getPrice())
                .imageLink(article.getPicture())
                .sizesAvailable(Arrays.asList(request.getParameter("size").split("\\s*,\\s*")))
                .ofCategories(Arrays.asList(request.getParameter("category").split("\\s*,\\s*")))
                .ofBrand(Arrays.asList(request.getParameter("brand").split("\\s*,\\s*")))
                .build();
        newArticle.setId(article.getId());
        articleService.saveArticle(newArticle);
        return "redirect:article-list";
    }

    @RequestMapping("/delete")
    public String deleteArticle(@RequestParam("id") Long id) {
        articleService.deleteArticleById(id);
        return "redirect:article-list";
    }

}
```

c.Checkout Controler.java.



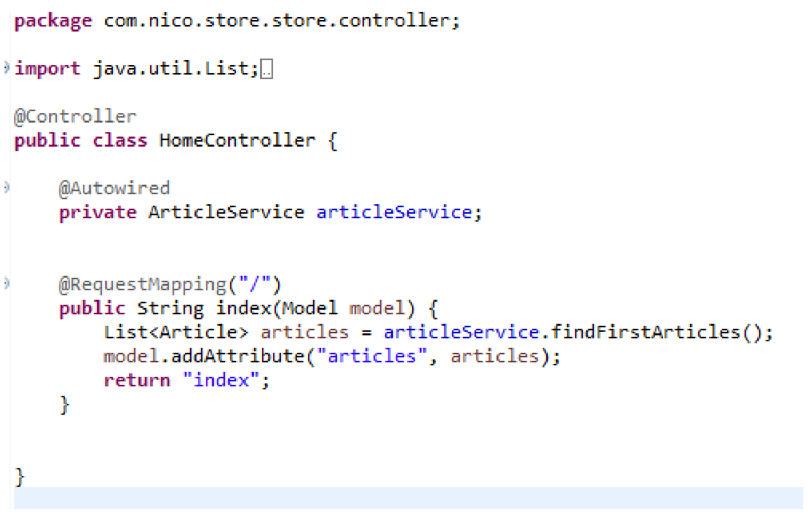
```java
package com.nico.store.store.controller;

import org.springframework.beans.factory.annotation.Autowired;

@Controller
public class CheckoutControler {

    @Autowired
    private ShoppingCartService shoppingCartService;

    @Autowired
    private OrderService orderService;

    @RequestMapping("/checkout")
    public String checkout( @RequestParam(value="missingRequiredField", required=false) boolean missingRequiredField,
                            Model model, Authentication authentication) {
        User user = (User) authentication.getPrincipal();
        ShoppingCart shoppingCart = shoppingCartService.getShoppingCart(user);
        if(shoppingCart.isEmpty()) {
            model.addAttribute("emptyCart", true);
            return "redirect:/shopping-cart/cart";
        }
        model.addAttribute("cartItemList", shoppingCart.getCartItems());
        model.addAttribute("shoppingCart", shoppingCart);
        if(missingRequiredField) {
            model.addAttribute("missingRequiredField", true);
        }
        return "checkout";
    }

    @RequestMapping(value = "/checkout", method = RequestMethod.POST)
    public String placeOrder(@ModelAttribute("shipping") Shipping shipping,
                            @ModelAttribute("address") Address address,
                            @ModelAttribute("payment") Payment payment,
                            RedirectAttributes redirectAttributes, Authentication authentication) {
        User user = (User) authentication.getPrincipal();
        ShoppingCart shoppingCart = shoppingCartService.getShoppingCart(user);
        if (!shoppingCart.isEmpty()) {
            shipping.setAddress(address);
            Order order = orderService.createOrder(shoppingCart, shipping, payment, user);
            redirectAttributes.addFlashAttribute("order", order);
        }
        return "redirect:/order-submitted";
    }

    @RequestMapping(value = "/order-submitted", method = RequestMethod.GET)
    public String orderSubmitted(Model model) {
        Order order = (Order) model.asMap().get("order");
        if (order == null) {
            return "redirect:/";
        }
        model.addAttribute("order", order);
        return "orderSubmitted";
```

d.GlobalControllerAdvice.java



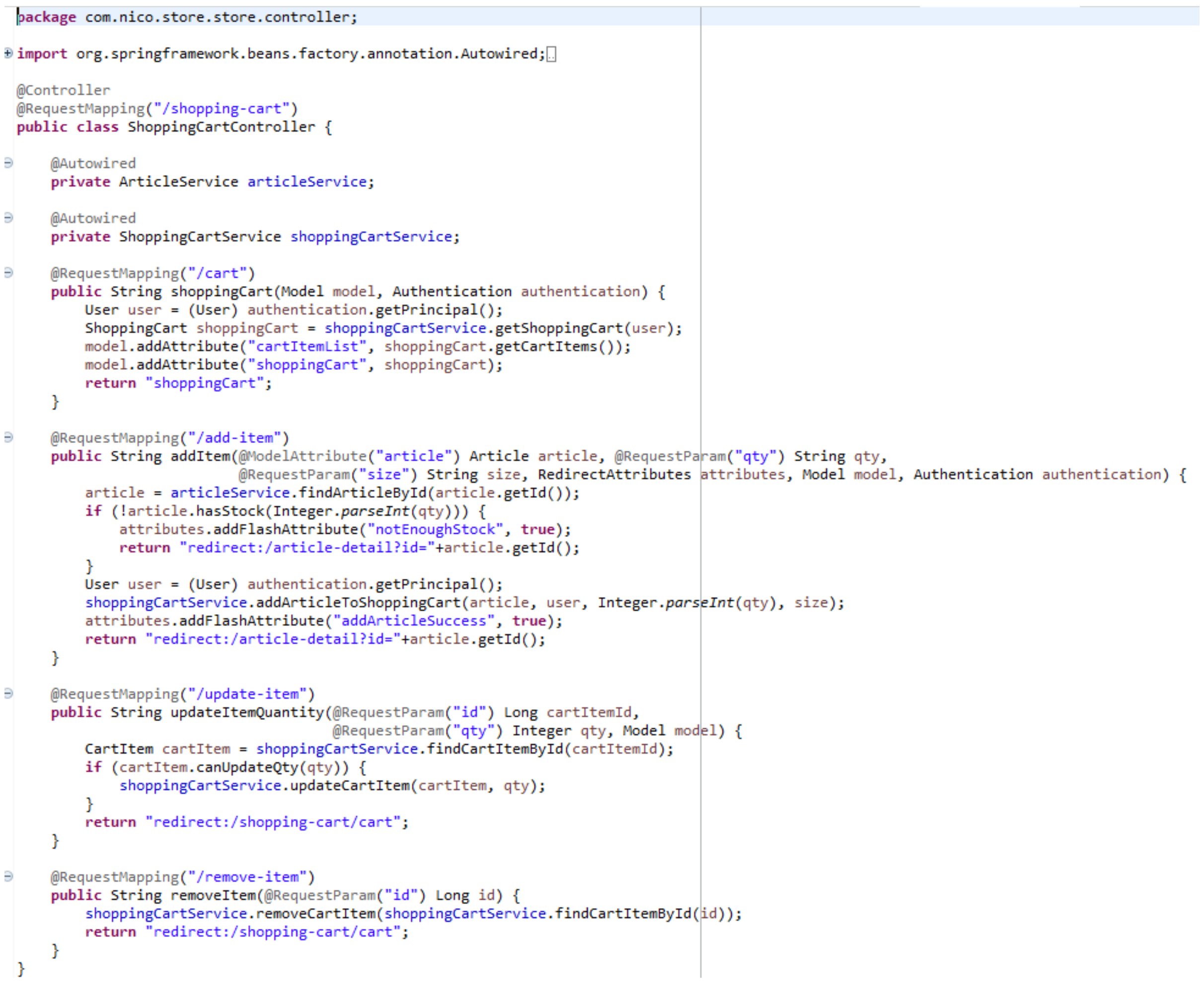
```java
package com.nico.store.store.controller;

import java.util.Date;

@ControllerAdvice
public class GlobalControllerAdvice {

    public static final String DEFAULT_ERROR_VIEW = "error";

    @Autowired
    private ShoppingCartService shoppingCartService;

    @InitBinder
    public void initBinder(WebDataBinder dataBinder) {
        StringTrimmerEditor stringTrimmerEditor = new StringTrimmerEditor(true);
        dataBinder.registerCustomEditor(String.class, stringTrimmerEditor);
    }

    @ModelAttribute
    public void populateModel(Model model) {
        Authentication auth = SecurityContextHolder.getContext().getAuthentication();
        if (auth != null && auth.isAuthenticated() && !(auth instanceof AnonymousAuthenticationToken)) {
            User user =  (User) auth.getPrincipal();
            if (user != null) {
                model.addAttribute("shoppingCartItemNumber", shoppingCartService.getItemsNumber(user) );
            }
        } else {
            model.addAttribute("shoppingCartItemNumber", 0);
        }
    }

    @ExceptionHandler(value = Exception.class)
    public ModelAndView defaultErrorHandler(HttpServletRequest req, Exception e) throws Exception {
        if (AnnotationUtils.findAnnotation(e.getClass(), ResponseStatus.class) != null)
            throw e;
        ModelAndView mav = new ModelAndView();
        mav.addObject("timestamp", new Date(System.currentTimeMillis()));
        mav.addObject("path", req.getRequestURL());
        mav.addObject("message", e.getMessage());
        mav.setViewName(DEFAULT_ERROR_VIEW);
        return mav;
    }


}
```

e. HomeController.java



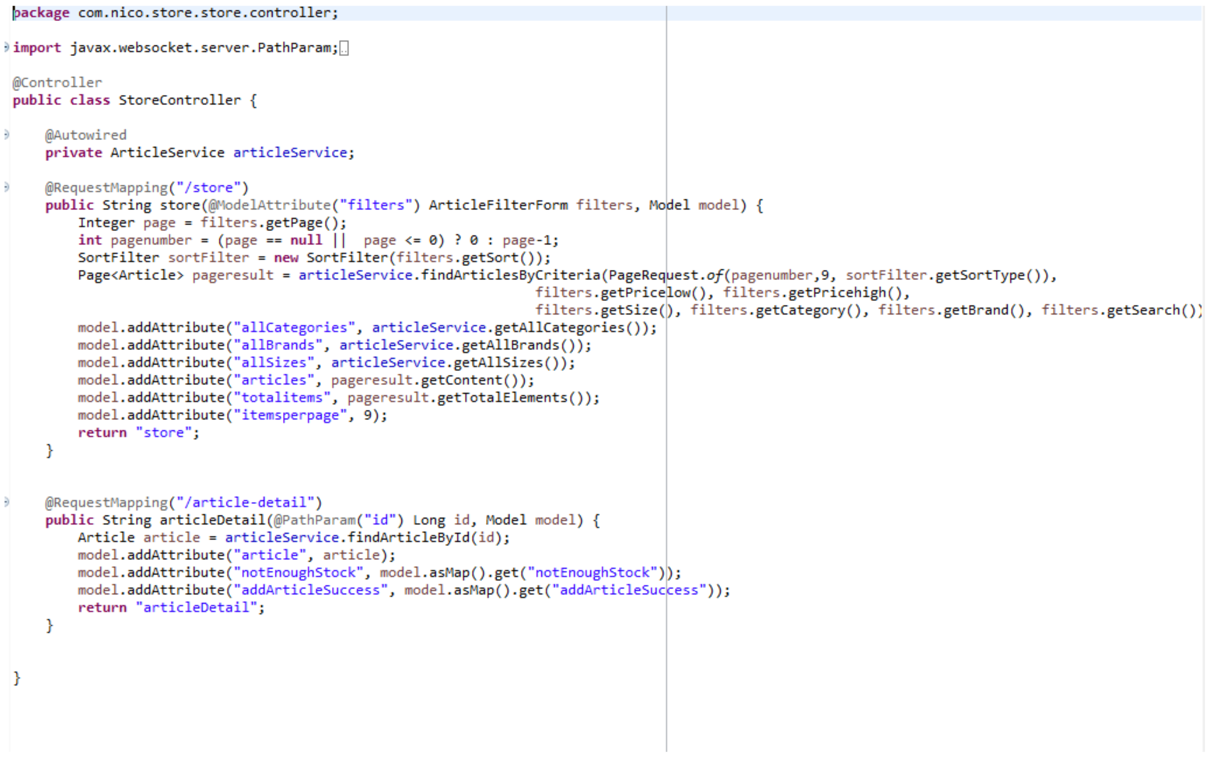
```java
package com.nico.store.store.controller;

import java.util.List;

@Controller
public class HomeController {

    @Autowired
    private ArticleService articleService;


    @RequestMapping("/")
    public String index(Model model) {
        List<Article> articles = articleService.findFirstArticles();
        model.addAttribute("articles", articles);
        return "index";
    }


}
```

f.ShoppingCartController.java



```java
package com.nico.store.store.controller;

import org.springframework.beans.factory.annotation.Autowired;

@Controller
@RequestMapping("/shopping-cart")
public class ShoppingCartController {

    @Autowired
    private ArticleService articleService;

    @Autowired
    private ShoppingCartService shoppingCartService;

    @RequestMapping("/cart")
    public String shoppingCart(Model model, Authentication authentication) {
        User user = (User) authentication.getPrincipal();
        ShoppingCart shoppingCart = shoppingCartService.getShoppingCart(user);
        model.addAttribute("cartItemList", shoppingCart.getCartItems());
        model.addAttribute("shoppingCart", shoppingCart);
        return "shoppingCart";
    }

    @RequestMapping("/add-item")
    public String addItem(@ModelAttribute("article") Article article, @RequestParam("qty") String qty,
                          @RequestParam("size") String size, RedirectAttributes attributes, Model model, Authentication authentication) {
        article = articleService.findArticleById(article.getId());
        if (!article.hasStock(Integer.parseInt(qty))) {
            attributes.addFlashAttribute("notEnoughStock", true);
            return "redirect:/article-detail?id="+article.getId();
        }
        User user = (User) authentication.getPrincipal();
        shoppingCartService.addArticleToShoppingCart(article, user, Integer.parseInt(qty), size);
        attributes.addFlashAttribute("addArticleSuccess", true);
        return "redirect:/article-detail?id="+article.getId();
    }

    @RequestMapping("/update-item")
    public String updateItemQuantity(@RequestParam("id") Long cartItemId,
                                     @RequestParam("qty") Integer qty, Model model) {
        CartItem cartItem = shoppingCartService.findCartItemById(cartItemId);
        if (cartItem.canUpdateQty(qty)) {
            shoppingCartService.updateCartItem(cartItem, qty);
        }
        return "redirect:/shopping-cart/cart";
    }

    @RequestMapping("/remove-item")
    public String removeItem(@RequestParam("id") Long id) {
        shoppingCartService.removeCartItem(shoppingCartService.findCartItemById(id));
        return "redirect:/shopping-cart/cart";
    }
}
```

g.StoreController.java



```java
package com.nico.store.store.controller;

import javax.websocket.server.PathParam;

@Controller
public class StoreController {

    @Autowired
    private ArticleService articleService;

    @RequestMapping("/store")
    public String store(@ModelAttribute("filters") ArticleFilterForm filters, Model model) {
        Integer page = filters.getPage();
        int pagenumber = (page == null ||  page <= 0) ? 0 : page-1;
        SortFilter sortFilter = new SortFilter(filters.getSort());
        Page<Article> pageresult = articleService.findArticlesByCriteria(PageRequest.of(pagenumber,9, sortFilter.getSortType()),
                                                                         filters.getPricelow(), filters.getPricehigh(),
                                                                         filters.getSize(), filters.getCategory(), filters.getBrand(), filters.getSearch()
        model.addAttribute("allCategories", articleService.getAllCategories());
        model.addAttribute("allBrands", articleService.getAllBrands());
        model.addAttribute("allSizes", articleService.getAllSizes());
        model.addAttribute("articles", pageresult.getContent());
        model.addAttribute("totalitems", pageresult.getTotalElements());
        model.addAttribute("itemsperpage", 9);
        return "store";
    }


    @RequestMapping("/article-detail")
    public String articleDetail(@PathParam("id") Long id, Model model) {
        Article article = articleService.findArticleById(id);
        model.addAttribute("article", article);
        model.addAttribute("notEnoughStock", model.asMap().get("notEnoughStock"));
        model.addAttribute("addArticleSuccess", model.asMap().get("addArticleSuccess"));
        return "articleDetail";
    }


}
```