TEST CASES

From the outline of the functional specification sketched above, I have derived a CRUD-based testing matrix. Assuming there are two models defined within the used MVC framework: `User` and `Post`, we can associate the four user stories with the basic database operations:

	C	**R**	**U**	**D**
User	User story 1	User story 2	*skipped*	*skipped*
Post	User story 4	User story 3	*skipped*	*skipped*

This, in turn, allows me to define a number of test cases for each user story.

User story 1. As an anonymous user, I can create a user account (I can sign up).

Test case 1.1. As an anonymous (not logged-in) user, I can only see the sign up or the login view.

Step	Action	Expected result	Actual result
1.1.1	Open the `/posts/1` URL	Redirect to `/login` URL	
1.1.2	Open the `/posts` URL	Redirect to `/login` URL	
1.1.3	Open the `/posts/create` URL	Redirect to `/login` URL	
1.1.4	Open the `/login` URL	No redirect, login form is displayed	
1.1.5	Open the `/register` URL	No redirect, signup form is displayed	

Test case 1.2. As an anonymous (not logged-in) user, I can sign up with an email address that does not exists in the database yet.

Step	Action	Expected result	Actual result

1.2.1	Open the /register URL	Signup form is displayed	
1.2.2	Fill out the "Email" field with a valid email address that does not exist in the database yet		
1.2.3	Fill out the "Password" field with aB1234!/		
1.2.4	Fill out the "Confirm password" field with aB1234!/		
1.2.5	Click on the "Sign up" button	The confirmation message "Your account has been created" is displayed	

Test case 1.3. As an anonymous (not logged-in) user, I cannot sign up with an email that already exists in the database.

Step	Action	Expected result	Actual result
1.3.1	Open the /register URL	Signup form is displayed	
1.3.2	Fill out the "Email" field with a valid Email address that does already exist in the database		
1.3.3	Fill out the "Password" field with aB1234!/		
1.3.4	Fill out the "Confirm password" field with aB1234!/		

1.3.5	Click on the "Sign up" button	The confirmation message "This email is already in use" is displayed	

Test case 1.4. As an anonymous (not logged-in) user, I cannot sign up with a string that does not constitute a valid email address.

Step	Action	Expected result	Actual result
1.4.1	Open the `/register` URL	Signup form is displayed	
1.4.2	Fill out the "Email" field with a `!DeF456/`		
1.4.3	Fill out the "Password" field with `aB1234!/`		
1.4.4	Fill out the "Confirm password" field with `aB1234!/`		
1.4.5	Click on the "Sign up" button	The error message "Please use a valid email address" is displayed next to the "Email" field	

Test case 1.5. As an anonymous (not logged-in) user, I cannot sign up using insecure password (a password that is shorter than 8 characters or does not include one uppercase letter, one lowercase letter, one digit and one special character).

Step	Action	Expected result	Actual result
1.5.1	Open the `/register` URL	Signup form is displayed	
1.5.2	Fill out the "Email" field with a valid email address that does not exist in the		

	database yet		
1.5.3	Fill out the "Password" field with `abcd`		
1.5.4	Fill out the "Confirm password" field with `abcd`		
1.5.5	Click on the "Sign up" button	The error message "A password cannot be shorter than 8 characters and must include one uppercase letter, one lowercase letter, one digit and one special character" is displayed next to the "Password" field	

Test case 1.6. As an anonymous user, I cannot sign up filling out the password and password confirmation fields with different strings.

Step	Action	Expected result	Actual result
1.6.1	Open the `/register` URL	Signup form is displayed	
1.6.2	Fill out the "Email" field with a valid email address that does not exist in the database yet		
1.6.3	Fill out the "Password" field with `aB1234!/`		
1.6.4	Fill out the "Confirm password" field with `fG1234!/`		

1.6.5	Click on the "Sign up" button	The error message "The passwords do not match" is displayed next to the "Confirm password" field	

Test case 1.7. As an anonymous user, I cannot sign up by submitting an empty signup form.

Step	Action	Expected result	Actual result
1.7.1	Open the `/register` URL	Signup form is displayed	
1.7.2	Click on the "Sign up" button	The error message "This field is required" is displayed next to the "Email" field; the error message "This field is required" is displayed next to the "Password" field; the error message "This field is required" is displayed next to the "Confirm password" field	

Test cases 1.1-1.7 do not exhaust all possible test cases regarding the signup and login forms validation, that a complete boundary value analysis would suggest. I skip them in my answer for the sake of brevity. For the same sake I also skip the email verification mechanism in which the user has to receive an automatic confirmation email and click on a verification hyperlink.

User story 2. As a previously registered user, I can log in.

Test case 2.1. As a registered user, I can log in using the correct email address and password.

Step	Action	Expected result	Actual result
2.1.1	Open the /login URL	Login form is displayed	
2.1.2	Fill out the "Email" field with a valid email address that does already exist in the database		
2.1.3	Fill out the "Password" field with aB1234!/		
2.1.4	Click on the "Log in" button	Redirect to /posts URL, confirmation message "Welcome back" is displayed	

Test case 2.2. As a registered user, I cannot log in using a string that does not correspond to an email address existing in the database.

Step	Action	Expected result	Actual result
2.2.1	Open the /login URL	Login form is displayed	
2.2.2	Fill out the "Email" field with a valid email address that does not exist in the database yet		
2.2.3	Fill out the "Password" field with aB1234!/		
2.2.4	Click on the "Log in" button	Error message "Please use a correct email and password" is	

		displayed next to the "Email" field	

Test case 2.3. As a registered user, I cannot log in using a correct email address but an incorrect password.

Step	Action	Expected result	Actual result
2.3.1	Open the `/login` URL	Login form is displayed	
2.3.2	Fill out the "Email" field with a valid email address that does already exist in the database		
2.3.3	Fill out the "Password" field with `ab123`		
2.3.4	Click on the "Log in" button	Error message "Please use a correct email and password" is displayed next to the "Email" field	

Test case 2.4. As a registered user, I cannot log in submitting an empty login form.

Step	Action	Expected result	Actual result
2.4.1	Open the `/login` URL	Login form is displayed	
2.4.2	Click on the "Log in" button	The error message "This field is required" is displayed next to the "Email" field; the error message "This field is required" is displayed next to	

		the "Password" field	

Suggestion for further enhancement: test that the login form is secure against SQL-injection attacks.

User story 3. As a logged in user, I can read all published posts.

Test case 1.1. is also executed together with tests pertaining to user story 3.

Test case 3.1. As a logged in user, I can see the list of 20 newest posts**.**

Step	Action	Expected result	Actual result
3.1.1	Open the /posts URL	Redirect to /login URL, login form is displayed	
3.1.2	Fill out the "Email" field with a valid email address that does already exist in the database		
3.1.3	Fill out the "Password" field with aB1234!/		
3.1.4	Click on the "Log in" button	Redirect to /posts URL, confirmation message "Welcome back" is displayed, the list of 20 newest posts is displayed	

Test case 3.2. As a logged in user, I can see the individual post view.

Step	Action	Expected result	Actual result
3.2.1	Open the `/posts/1` URL	Redirect to `/login` URL, login form is displayed	
3.2.2	Fill out the "Email" field with a valid email address that does already exist in the database		
3.2.3	Fill out the "Password" field with `aB1234!/`		
3.2.4	Click on the "Log in" button	Redirect to `/posts/1` URL, confirmation message "Welcome back" is displayed, the post with ID 1 is displayed	

User story 4. As a logged in user, I can create a new post up to 160 characters in length.

Test case 1.1. is also executed together with tests pertaining to user story 4.

Test case 4.1. As a logged in user, I can create a new post up to 160 characters in length.

Step	Action	Expected result	Actual result
4.1.1	Open the `/posts/create` URL	Redirect to `/login` URL, login form is displayed	
4.1.2	Fill out the		

	"Email" field with a valid email address that does already exist in the database		
4.1.3	Fill out the "Password" field with `aB1234!/`		
4.1.4	Click on the "Log in" button	Redirect to `/posts/create` URL, message "Welcome back" is displayed	
4.1.5	Fill in "Post text" textarea with 160 characters in length text		
4.1.6	Click on the "Submit" button	The confirmation message "Your post has been created" is displayed; Redirect to the `/posts` URL, the created post is displayed on the top of the list	

Test case 4.2. As a logged in user, I cannot create a new post of 161 characters in length.

Step	Action	Expected result	Actual result
4.2.1	Open the `/posts/create` URL	Redirect to `/login` URL, login form is displayed	
4.2.2	Fill out the		

Step	Action	Expected result	Actual result
	"Email" field with a valid email address that does already exist in the database		
4.2.3	Fill out the "Password" field with `aB1234!/`		
4.2.4	Click on the "Log in" button	Redirect to `/posts/create` URL, confirmation message "Welcome back" is displayed	
4.2.5	Fill in "Post text" textarea with 161 characters in length text		
4.2.6	Click on the "Submit" button	The error message "Your post is too long" is displayed next to the "Post text" textarea	

Test case 4.3. As a logged in user, I cannot create a new post of 0 characters in length.

Step	Action	Expected result	Actual result
4.3.1	Open the `/posts/create` URL	Redirect to `/login` URL, login form is displayed	
4.3.2	Fill out the "Email" field with a valid email address that does already exist in the database		
4.3.3	Fill out the "Password" field		

	with `aB1234!/`		
4.3.4	Click on the "Log in" button	Redirect to `/posts/create` URL, confirmation message "Welcome back" is displayed	
4.3.5	Click on the "Submit" button	The error message "This field is required" is displayed next to the "Post text" textarea	

Suggestion for further enhancement: test that the new post form is secure against HTML/JS-injection attacks.

REFERENCES

I have prepared this answer basing mainly on my experience as a Junior QA. When in doubt, I consulted the following sources:

- Adam Roman, *Testowanie i jakość oprogramowania. Modele, techniki, narzędzia.* Wydawnictwo Naukowe PWN, 2015.
- Lisa Crispin, Janet Gregory*, Agile Testing: A Practical Guide for Testers and Agile Teams.* Addison-Wesley Professional, 2009.
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