



Amazon Website Testing

SE 2226 Software Quality Assurance and Testing

Enis Ay 23070006103

Elif Andibay 23070006090

Dmitrii Kobin 23070006111

Deniz Kılıçoğlu 23070006056

Department
Software Engineering

Lecturer
Dr. Korhan Karabulut



Overview

- The application of choice
- Black box testing techniques
- Functional/non-functional tests
- The drawbacks

Amazon

A USA based multinational company founded by Jeff Bezos in 1994, that does e-commerce, streaming, etc.



("About Us: Amazon.")



Why test Amazon?

- Has been around for 31 years
(little to no defects expected)
- Has many testable functions
- Doesn't always have captcha (easier access with automatized tests)



Tools

- JUnit 5, Selenium, and ChromeDriver for site automation
- Utilised E2E (system) tests to:
 - ensure the website works on the user end
 - provide a true user experience simulation



Testing techniques



Black box testing methods

- User behavior imitation
 - Manual testing
 - Use cases
 - Decision tables
 - Automated tests based on all of the above



Black box testing methods

- Use cases
 - Example: login process

User login					
Scenario name	Starting flow	altrenate			
1 Login successful	Basic				
2 Login page not functional	Basic	A1			
3 Wrong email	Basic	A2			
4 Wrong password	Basic	A3			
Test case ID	Scenario/Conditior	login form func	Email correct	Password incorrect	Expected Result
1	Login successful	V	V	V	Main page opened with user selected
2	Login page not function	I	N/A	N/A	Error message
3	Wrong email	V	I	N/A	Wrong email message
4	Wrong password	V	V	I	Wrong password message



Black box testing methods

Filter functionality							
Scenario name	Starting flow	altrenate					
1 Search and filter success	Basic						
2 Search operation failed	Basic	A1					
3 Filter not applicable	Basic	A2					
4 Filtered results not visible	Basic	A3					
5 Filtered results are incorrect	Basic	A4					
Test case ID	Scenario/Condition	Search correct	Filter applicable	Filtered results visible	Filtered results mat	Expected Result	
1	Search and filter succe	V	V	V	V	Filtered itmes list	
2	Search operation failed	I	N/A	N/A	N/A	Error message	
3	Filter not applicable	V	I	N/A	N/A	Error message	
4	Filtered results not visil	V	V	I	N/A	Error message	
5	Filtered results are incc	V	V	V	I	Incorrect items list	

○ example of constraints

- Search function has separate use case.
- Without internal data, in practice here we stop at 4.



Black box testing methods

- Decision table tests
 - Example:
 - showcases a comprehensive step by step analysis of events in the shopping cart test

Cart test (full interaction test)														
Conditions	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Page loaded	F	T	T	T	T	T	T	T	T	T	T	T	T	T
Banner removed	-	F	T	T	T	T	T	T	T	T	T	T	T	T
Search processed	-	-	F	T	T	T	T	T	T	T	T	T	T	T
Search successful	-	-	-	F	T	T	T	T	T	T	T	T	T	T
Product selected	-	-	-	-	F	T	T	T	T	T	T	T	T	T
Product information visible	-	-	-	-	-	F	T	T	T	T	T	T	T	T
Product added normally	-	-	-	-	-	-	T	T	T	T	F	F	F	F
Product added via JavaScript	-	-	-	-	-	-	-	-	-	T	T	T	T	T
Cart opened	-	-	-	-	-	-	F	T	T	T	F	T	T	T
Remove button visible	-	-	-	-	-	-	-	F	T	T	-	F	T	T
Product removed from cart	-	-	-	-	-	-	-	-	F	T	-	-	F	T
Actions														
Test failed	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Test passed										Y				Y

Black box testing methods

- Decision tables
 - practical tables that ended up as actual tests

Registration form fields testing																
Conditions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Exceptions while executing	F	F	F	F	F	F	F	F	T	T	T	T	T	T	T	T
Name field found	F	F	F	F	T	T	T	T	F	F	F	F	T	T	T	T
Email field found	F	F	T	T	F	F	T	T	F	F	T	T	F	F	T	T
Password field found	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T
Actions																
Tests failed	Y	Y	Y	Y	Y	Y	Y	Y	Y							
Partial tests passing										Y	Y	Y	Y	Y	Y	
Tests passed																Y
Invalid password login test																
Conditions	1	2	3	4												
No Exceptions while executing	F	F	T	T												
Login error displayed correctly	F	T	F	T												
Actions																
Test failed	Y	Y	Y													
Test passed				Y												



White box testing methods

- Require access to root code of Amazon and thus not possible to conduct within this project's bounds.



Functional & Non Functional Tests



Functional tests

- **product search with various terms** - makes sure the search function works across different categories
- **add to cart test** - checks if the shopping cart works as it should
- **login test** - confirms login functions work as intended



Non-functional tests

- **Performance test** - makes sure pages load under 10s
- **Responsive design test** - checks layout across different devices
- **Scroll test** - tests UI usability and scroll behaviour
- **Multiple tabs test** - checks stability across tabs



Non-functional tests - responsive design





Drawbacks



Drawbacks

- **Unreliable/incomplete tests**
 - the login automation sometimes fails possibly due to a popup on the login page
- **Lack of unit tests**
 - slows down testing, resource intensive
- **Limited coverage**
 - a lot of edge cases have not been tested
- **Implementation**
 - Writing actual tests results in changes from planned tests



THANK YOU FOR LISTENING



“About Us: Amazon.” *About Amazon*,
www.aboutamazon.com/about-us. Accessed 19 June 2025.

Screen recording from OBS studio