

# Task 2 Inspekcija koda

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Almedin Pašalić	19079
Ilhan Hasičić	19074
Lejla Heleg	19197
Aida Zametica	19227
Vedran Mujić	18959

Predmetna profesorica: Prof. dr. Dženana Đonko Asistentica: mag. ing. Esma Karahodža



### Dio zadatka pod a)

Odrediti moderatora inspekcije. Moderator treba da dodijeli kodove pojedinim članovima tima za inspekciju i odgovarajuće liste provjere (check liste) i tabelu ozbiljnosti grešaka (primjer tabele ozbiljnosti grešaka predavanja 2 slajd 19, možete po potrebi prilagoditi). Može se koristiti CodeStream za inspekciju ili neki drugi alat. Potrebno je ilustrirati dodavanje komentara, zahtjeva za pregled promjena i dodavanje issue kartica. Bitno je da se svaki član tima nađe u ulozi recenzenta. Svaki član tima-recenzent treba da popuni izvještaj 1 o pronađenim greškama (templejt izvještaja predavanja 2 – slajd 21, izvještaj možete po potrebi prilagoditi uz obavezno dodavanje izvora nastanka greške zasnovano na check listi koju koristite). Poželjno je da autor dijela koda napravi i namjerne greške u kodu u cilju provjere da li ostali članovi tima-recenzenti ozbiljno pristupaju inspekciji koda.

Moderator inspekcije je Vedran Mujić. Kod je dodijeljen na sljedeći način:

Aida Zametica - DtoRequestsController

Lejla Heleg – OrdersController, Reports Controller

Ilhan Hasičić - HomeController

Almedin Pašalić - ProductController

Vedran Mujić - DiscountController

Član tima: Aida Zametica

Str	ucture		
	Description of item	Pass	Fail
	Does the code completely and correctly implement the design?		
	Does the code conform to any pertinent coding standards?		
•	Is the code well structured, consistent in style, and consistently formatted?		
•	Are there any uncalled or unneeded procedures or any unreachable code?		
•	Are there any leftover stubs or test routines in the code?		
	Can any code be replaced by calls to external reusable components or library functions?		
•	Are there any blocks of repeated code that could be condensed into a single procedure?		

	Is storage use efficient?		
	Are symbolics used rather than "magic number" constants or string constants?		
	Are any modules excessively complex and should be restructured or split into multiple routines?		
Doc	cumentation		
	Description of item	Pass	Fail
•	Is the code clearly and adequately documented with an easy to maintain commenting style?	П	
	Are all comments consistent with the code?		
Vai	riables		
	Description of item	Pass	Fail
•	Are all variables properly defined with meaningful, consistent, and clear names?		
-	Do all assigned variables have proper type consistency or casting?		
•	Are there any redundant or unused variables?		
Ari	thmetic Operations		
	Description of item	Pass	Fail
-	Does the code avoid comparing floating point numbers for equality?		П
	Does the code systematically prevent rounding errors?		
-	Does the code avoid additions and subtractions on numbers with greatly different magnitudes?		
	Are divisors tested for zero or noise?	П	П
Loc	ops and Branches		

	Description of item	Pass	Fail
•	Are all loops, branches and logic constructs complete, correct and properly nested?		
-	Are the most common cases tested first in IF ELSEIF chains?		П
	Are all cases covered in an IF, ELSEIF or CASE block, including ELSE or DEFAULT clauses?		
	Does every case statement have a default?	П	П
	Are loop termination conditions obvious and invariably achievable?		П
	Are indexes or subscripts properly initialized, just prior to the loop?		П
	Can any statements that are enclosed within loops be placed outside the loop?		
	Does the code in the loop avoid manipulating the index variable or using it upon exit from the loop?		П

Def	Pensive Programming		
	Description of item	Pass	Fail
	Are indexes, pointers, and subscripts tested against array, record, or file bounds?		
	Are imported data and input arguments tested for validity and completeness?	П	•
	Are all output variables assigned?		
	Are the correct data operated on in each statement?		
	Is every memory allocation deallocated?		
	Are timeouts or error traps used for external device accesses?		
	Are files checked for existence before attempting to access them?		
	Are all files and devices are left in the correct state upon program termination?		

# Izvještaj o pronadjenim greškama:

**Datum sesije:** 26.11.2023

Izvještaj pripremila: Aida Zametica Naziv projekta: Ayana Flower Shop

Pregledani dokumenti: DtoRequestsController

Tim za inspekciju: Ilhan Hasičić, Lejla Heleg, Almedin Pašalić, Aida Zametica, Vedran Mujić

*	Error type	Error	Error description	Error	Error
•	Error type	nature (W/M/E)	Effor description	location	severity
1	Logic error	W	'AddToCart' metoda vraća 'JsonResult', a deklarisano je da će metoda vratiti 'IActionResult'.	linija 145	2
2	Logic error	M	Ne postoji handlanje kad je 'userId' 'null' u 'Cart' metodi.	linija 175	3
3	Security error	M	Ne postoji user input validacija.	linija 220 linija 168	5
4	Code quality	Е	Postoje dodatne metode koje nikad neće biti pozvane.	linija 359 linija 346	2
5	Code quality	M	Visoka kompleksnost metode 'OrderCreate' koja može biti podijeljenja na više manjih metoda.	linija 220	2
6	Code qualiy	M	Nedostatak komentara otežava razumijevanje koda.	cijeli kod	1
7	Code quality	M	Varijable imaju nejasna imena.	cijeli kod	1
2 Follov	w-up decisions	•			1
*	Error type	Error nature (W/M/E)	Error description	Error location	Error severity
a	Follow-up wil	ll be carried	out by: <mark>Vedran Mujić</mark>		1
b	Re-inspection	is recomme	nded: Yes/No		
c	Refactor is recommended: Yes/No				

U analizi 'DtoRequestsController' koda, identificirane su neke ključne tačke koje iziskuju pažnju. Kod je generalno dobro struktuiran, ali postoje neki dijelovi koji mogu biti podložni poboljšanjima. Sugestije su usmjerene ka poboljšanju čitljivosti, održavanju i sigurnosti koda. Preporučuje se dodavanje dodatnih provjera za null vrijednosti prije pristupa vrijednostima, dodavanje nedostajućih komentara u određenim dijelovima koda, razbijanje kompleksnih metoda na manje funkcionalne dijelove, reimenovanje varijabli te provjera korištenja ključne riječi 'async'.

Član tima: Lejla Heleg

St	ructure		
	Description of item	Pass	Fail
	Does the code completely and correctly implement the design?		
	Does the code conform to any pertinent coding standards?		
	Is the code well structured, consistent in style, and consistently formatted?		
	Are there any uncalled or unneeded procedures or any unreachable code?		
	Are there any leftover stubs or test routines in the code?		
-	Can any code be replaced by calls to external reusable components or library functions?		
	Are there any blocks of repeated code that could be condensed into a single procedure?		
П	Is storage use efficient?		
	Are symbolics used rather than "magic number" constants or string constants?		
	Are any modules excessively complex and should be restructured or split into multiple routines?		
Doc	cumentation		
	Description of item	Pass	Fail
	Is the code clearly and adequately documented with an easy to maintain commenting style?		
	Are all comments consistent with the code?		
Var	riables		
	Description of item	Pass	Fail
	Are all variables properly defined with meaningful, consistent, and clear names?		П
	Do all assigned variables have proper type consistency or casting?		
	Are there any redundant or unused variables?		

Ari	thmetic Operations		
		<b>D</b>	T
	Description of item	Pass	Fail
	Does the code avoid comparing floating point numbers for equality?		
	Does the code systematically prevent rounding errors?		
	Does the code avoid additions and subtractions on numbers with greatly different magnitudes?		
	Are divisors tested for zero or noise?		
-			
Loc	ops and Branches		
	Description of item	Pass	Fail
•	Are all loops, branches and logic constructs complete, correct and properly nested?		
	Are the most common cases tested first in IF ELSEIF chains?		П
•	Are all cases covered in an IF, ELSEIF or CASE block, including ELSE or DEFAULT clauses?		
	Does every case statement have a default?		
•	Are loop termination conditions obvious and invariably achievable?		
	Are indexes or subscripts properly initialized, just prior to the loop?		П
-	Can any statements that are enclosed within loops be placed outside the loop?		•
	Does the code in the loop avoid manipulating the index variable or using it upon exit from the loop?		П
Def	ensive Programming		
	Description of item	Pass	Fail
	Are indexes, pointers, and subscripts tested against array, record, or file bounds?		
	Are imported data and input arguments tested for validity and completeness?		•

Are all output variables assigned?	
Are the correct data operated on in each statement?	
Is every memory allocation deallocated?	
Are timeouts or error traps used for external device accesses?	
Are files checked for existence before attempting to access them?	
Are all files and devices are left in the correct state upon program termination?	

# Izvještaj o pronadjenim greškama:

**Datum sesije:** 27.11.2023

Izvještaj pripremila: Lejla Heleg Naziv projekta: Ayana Flower Shop Pregledani dokumenti: OrdersController

Tim za inspekciju: Ilhan Hasičić, Lejla Heleg, Almedin Pašalić, Aida Zametica, Vedran Mujić

*	Error type	Error nature	Error description	Error	Error
	Effor type	(W/M/E)*	Error description	location	severity
1	Logic error	W	U metodi UserOrders pogrešno sortirana lista userOrders	Linija 47	3
2	Logic error	W	Metoda edit je označena kao asinhrona, ali se izvršavala kao sinhrona	Linija 116	3
3	Code quality	Е	Varijabla p1 nije iskorištena	Linija 49	2
4	Code quality	Е	Viška znak ";"	Linija 61	1
5	Code quality	Е	Metoda OrderExists nikada nije pozvana	Linija 155	2
6	Code quality	Е	Postojanje metoda koje nisu inkorporirane u UI (metode koje su automatski generisane prilikom dodavanja kontrolera)	Linija 70 Linija 88 Linija 98 Linija 127 Linija 145	2
7	Code quality	M	Metoda GetOrderProducts nije komentarisana	Linija 29	1
2 Foll	ow-up decisions				
*	Error type	Error nature (W/M/E)*	Error description	Error location	Error severity

a	Follow-up will be carried out by: Vedran Mujić
b	Re-inspection is recommended: Yes/No
С	

# Član tima: Ilhan Hasičić

Strı	ucture		
	Description of item	Pass	Fail
	Does the code completely and correctly implement the design?		
	Does the code conform to any pertinent coding standards?		
	Is the code well structured, consistent in style, and consistently formatted?		
	Are there any uncalled or unneeded procedures or any unreachable code?		
•	Are there any leftover stubs or test routines in the code?		
	Can any code be replaced by calls to external reusable components or library functions?		
	Are there any blocks of repeated code that could be condensed into a single procedure?		
	Is storage use efficient?		
	Are symbolics used rather than "magic number" constants or string constants?		
-	Are any modules excessively complex and should be restructured or split into multiple routines?		

Documentation		
	Description of item	Pass Fail

_	Is the code clearly and adequately documented with an easy to maintain commenting style?		
	Are all comments consistent with the code?		
Var	iables		
	Description of item	Pass	Fail
	Are all variables properly defined with meaningful, consistent, and clear names?	П	
	Do all assigned variables have proper type consistency or casting?		П
	Are there any redundant or unused variables?		П
Arit	chmetic Operations		
	Description of item	Pass	Fail
	Does the code avoid comparing floating point numbers for equality?		
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	Does the code avoid additions and subtractions on numbers with greatly different magnitudes?		
	Are divisors tested for zero or noise?	П	

Loc	ops and Branches		
	Description of item	Pass	Fail
	Description of Rem	1 433	1 un
	Are all loops, branches and logic constructs complete, correct and properly nested?		
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	Are indexes or subscripts properly initialized, just prior to the loop?		
П	Can any statements that are enclosed within loops be placed outside the loop?	П	П
	Does the code in the loop avoid manipulating the index variable or using it upon exit from the loop?	П	
Def	Pensive Programming		
	Description of item	Pass	Fail
	Are indexes, pointers, and subscripts tested against array, record, or file bounds?		П
	Are imported data and input arguments tested for validity and completeness?		•
-	Are all output variables assigned?		П
	Are the correct data operated on in each statement?		П
П	Is every memory allocation deallocated?		П
	Are timeouts or error traps used for external device accesses?		
	Are files checked for existence before attempting to access them?		
	Are all files and devices are left in the correct state upon program termination?		

# Izvjestaj o pronadjenim greskama:

**Datum sesije:** 28.11.2023

Izvještaj pripremila: Ilhan Hasičić Naziv projekta: Ayana Flower Shop Pregledani dokumenti: HomeController

Tim za inspekciju: Ilhan Hasičić, Lejla Heleg, Almedin Pašalić, Aida Zametica, Vedran Mujić

1 The er	ror list				
*	Error type	Error nature (W/M/E)	Error description	Error location	Error severity
1	Logic error	M	Metoda "IActionResult" ne osigurava slučaj kada je FlowerType null	Linija 33	3
2	Redundant local variable	Е	Varijabla _logger je deklarisana ali se nikada ne koristi	Linija 18	1
3	Redundant directive included	Е	Neke direktive su uključene ali se ne koriste i slobodno se mogu obrisati	Linija 8 Linija 10 Linija 11 Linija 12	1
4	Code quality	W	Imena atributa i metoda nisu standardizovana i ne poštuju CamelCase notaciju	Linija 20 Linija 81 Linija 102 Linija 113	2
2 Follow	v-up decisions			•	
*	Error type	Error nature (W/M/E)	Error description	Error location	Error severity
a	Follow-up wil	1 be carried of	out by: Vedran Mujić		•
b	Re-inspection	is recommer	nded: <mark>Yes</mark> /No		
С	Refactor is rec	commended:	Yes/No		
3 Comm	ients				

#### 3 Comments

Nakon izvršene inspekcije "HomeController" primijećeno je da su potrebne određene, ali minorne modifikacije koda. Najbitnija promjena je da se omogući pravilno reagovanje programa prilikom bacanja izuzetka "SystemNullReferenceException". Takođe je potrebno ukloniti suvišne linije koda i nepotrebno uključene direktive, te poštovati standardizovanu CamelCase notaciju pri imenovanju varijabli i metoda.

Komentari u kodu su poželjni radi boljeg razumijevanja koda.

\*W = Wrong M = Missing E = Extra

Član tima: Almedin Pašalić

a.			
Str	ructure		
	Description of item	Pass	Fail
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	Are there any blocks of repeated code that could be condensed into a single procedure?		
	Is storage use efficient?		
	Are symbolics used rather than "magic number" constants or string constants?		
	Are any modules excessively complex and should be restructured or split into multiple routines?		
Doc	umentation		
DUC			
	Description of item	Pass	Fail
	Is the code clearly and adequately documented with an easy to maintain commenting style?		
	Are all comments consistent with the code?		

Variables			
	Description of item	Pass	Fail

Are all variables properly defined with meaningful, consistent, and clear names?  Do all assigned variables have proper type consistency or casting?  Are there any redundant or unused variables?  Description of item  Pass Fail  Does the code avoid comparing floating point numbers for equality?  Does the code avoid additions and subtractions on numbers with greatly different magnitudes?  Are divisors tested for zero or noise?  Description of item  Pass Fail  Are all loops, branches and logic constructs complete, correct and properly nested?  Are the most common cases tested first in IF ELSEIF chains?  Are all cases covered in an IF, ELSEIF or CASE block, including ELSE or DEFAULT clauses?  Does every case statement have a default?  Are loop termination conditions obvious and invariably achievable?  Are indexes or subscripts properly initialized, just prior to the loop?  Can any statements that are enclosed within loops be placed outside the loop?  Does the code in the loop avoid manipulating the index variable or using it upon  Pass Fail  Description of item  Pass Fail	_			
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Arithmetic Operations  Description of item  Pass Fail  Does the code avoid comparing floating point numbers for equality?  Does the code systematically prevent rounding errors?  Does the code avoid additions and subtractions on numbers with greatly different magnitudes?  Are divisors tested for zero or noise?  Description of item  Pass Fail  Are all loops, branches and logic constructs complete, correct and properly nested?  Are the most common cases tested first in IF ELSEIF chains?  Are all cases covered in an IF, ELSEIF or CASE block, including ELSE or DEFAULT clauses?  Does every case statement have a default?  Are loop termination conditions obvious and invariably achievable?  Are indexes or subscripts properly initialized, just prior to the loop?  Can any statements that are enclosed within loops be placed outside the loop?  Does the code in the loop avoid manipulating the index variable or using it upon exit from the loop?  Decensive Programming		Do all assigned variables have proper type consistency or casting?		П
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<b>Description of item</b> Pass Fail		Are all cases covered in an IF, ELSEIF or CASE block, including ELSE or DEFAULT clauses?  Does every case statement have a default?  Are loop termination conditions obvious and invariably achievable?  Are indexes or subscripts properly initialized, just prior to the loop?  Can any statements that are enclosed within loops be placed outside the loop?  Does the code in the loop avoid manipulating the index variable or using it upon		
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Are indexes, pointers, and subscripts tested against array, record, or file bounds?	
Are imported data and input arguments tested for validity and completeness?	
Are all output variables assigned?	
Are the correct data operated on in each statement?	
Is every memory allocation deallocated?	
Are timeouts or error traps used for external device accesses?	
Are files checked for existence before attempting to access them?	
Are all files and devices are left in the correct state upon program termination?	П

# Izvještaj o pronadjenim greškama:

**Datum sesije:** 29.11.2023

Izvještaj pripremila: Almedin Pašalić Naziv projekta: Ayana Flower Shop

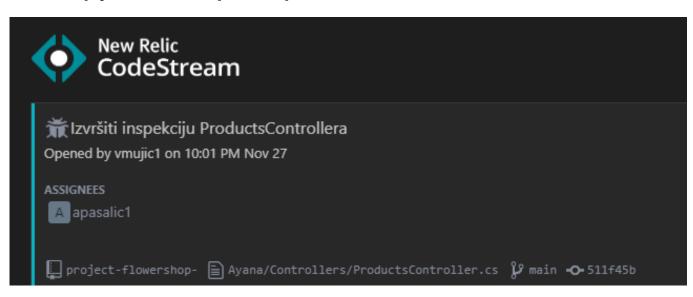
Pregledani dokumenti: ProductsController

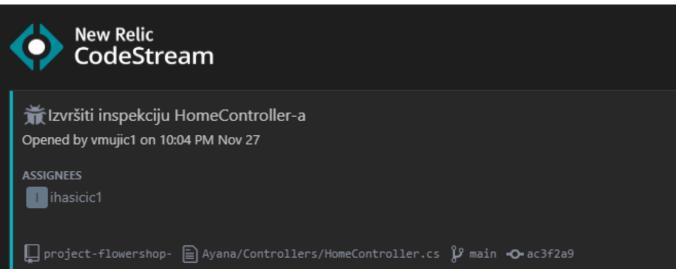
Tim za inspekciju: Ilhan Hasičić, Lejla Heleg, Almedin Pašalić, Aida Zametica, Vedran Mujić

*	Error type	Error	Error description	Error	Error		
		nature (W/M/E)	•	location	severity		
1	Logic error	M	Ne postoji handlanje kad je 'FlowerType' 'null' u 'PopularSearches' metodi.	linija 93	3		
2	Logic error	M	Neispravno korištenje ključnih riječi async i await .	linija 196 linija 230	3		
2	Code quality	Е	Redudantne linije koda.	linija 67 linija 204 linija 238	1		
3	Code quality	M	Ne koristi se najefikasniji način za obavljanje neke akcije.	linija 125 linija 129	2		
6	Code qualiy	M	Pri imenovanju varijabli nije ispoštovana "CamelCase" notacija.	linija 20 linija 102 linija 209 linija 243	1		
7	Code quality	M	Nedostaju komentari.	cijeli kod	1		
2 Follov	v-up decisions	I.		J			
*	Error type	Error nature (W/M/E)	Error description	Error location	Error severity		
a	Follow-up wil	l be carried	out by: <mark>Vedran Mujić</mark>				
b	Re-inspection	is recomme	nded: Yes/No				
С	Refactor is recommended: Yes/No						

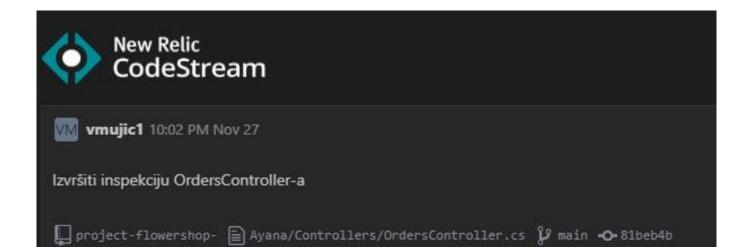
Prilikom inspekcije "ProductsController" uočeni su dijelovi koda koji zahtijevaju određene modifikacije. Potrebno je ukloniti redundantne linije koda, koristi efikasnije metode radi bržeg rada, omogućiti pravilno ponašanje prilikom bacanja izuzetaka, koristiti "CamelCase" notaciju prilikom imenovanja varijabli, te dodati komentare u kodu radi boljeg razumijevanja.

Za potrebe boljeg organizovanja timskog rada koristili smo dva alata: CodeStream. U nastavku je prikazana ilustracija korištenja tih alata:









# Team Activity Resolved Comments & Issues □ azametica1: @azametica1: Fali exception handling □ vmujic1: Izvršiti inspekciju DiscountsController-a □ vmujic1: Izvršiti inspekciju DtoRequestsController-a □ vmujic1: Izvršiti inspekciju HomeController-a □ vmujic1: Izvršiti inspekciju OrdersController-a □ vmujic1: Izvršiti inspekciju OrdersController-a □ vmujic1: Izvršiti inspekciju ProductsControllera

## Dio zadatka pod b)

Sumirati (moderator) sve greške u obliku izvještaja 2 (predavanje 2 slajd 22 – može se modifikovati po potrebi).

**Datum sesije:** 01.12.2023.

Naziv projekta: Ayana flower shop Pregledani dokumenti: Svi kontroleri

**Broj stranica (A):** 5

Tim za inspekciju: Aida Zametica, Lejla Heleg, Ilhan Hasičić, Almedin Pašalić, Vedran Mujić

Pripremio: Vedran Mujić

#	Član tima	Sastanak pregleda	Priprema	Sesija inspekcije	Ukupno (sati)
1	Vedran (moderator)	1	1	2	4
2	Lejla	1	0.5	2	3.5
3	Aida	1	1	1	3
4	Ilhan	1	1	1.5	3.5
5	Almedin	1	1	2	2.5
	Ukupno	5	4.5	8.5	16.5 ( B )

Težina errora		riroda errora V M E		Ukupno errora	Težinski faktor	Ukupno errora (standard)
5 - critical	0	1	0	1	16	16
4	0	0	0	0	8	0
3	2	4	0	6	4	24
2	2	2	5	9	2	18
1 - minor	0	5	4	9	1	9
Total	4	12	9	25 ( C )		67 ( D )

3 Metrike detekcije defekata

(1) Prosječno defekata po stranici = C / A = 25 / 5 = 5

(2) Prosječno defekata po stranici (standardizirano) = D / A = 67 / 5 = 13.4

(3) Efikasnost detekcije grešaka = B / C = 16.5 / 25 = 0.66

(4) Standardizovana efikasnost detekcije defekata = B / D = 16.5 / 67 = 0.25

Pripremio: Vedran Mujić Datum: 28.11.2023.

W - pogrešno, M - nedostaje, E - suvišno

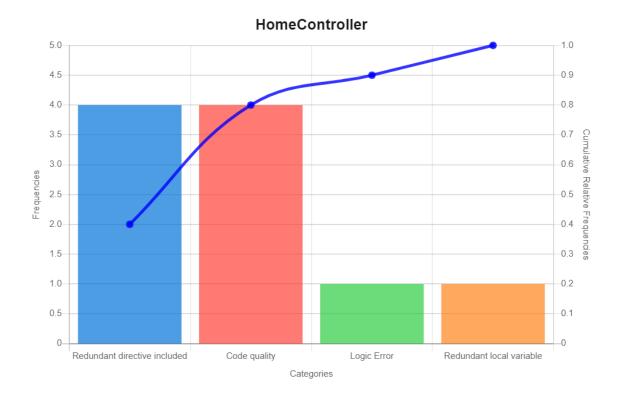
## Dio zadatka pod c)

Svaki član tima treba da iskoristi jedan statistički alat za prikaz broja grešaka i uzroka grešaka ili ovisnosti između grešaka.

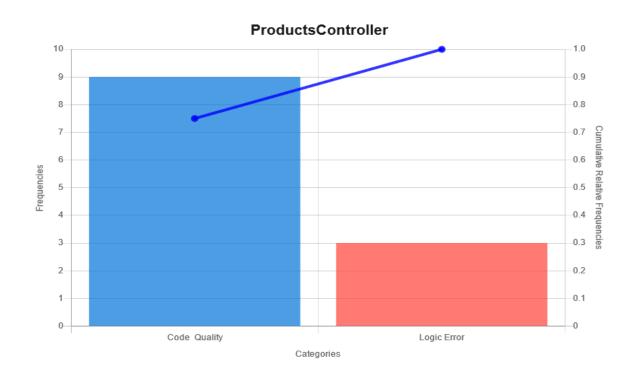
## **Aida Zametica** – <u>DtoRequestsController:</u>



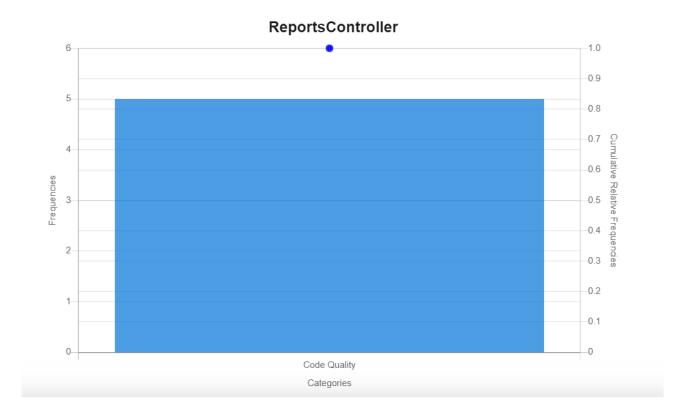
## Ilhan Hasičić - Home Controller:



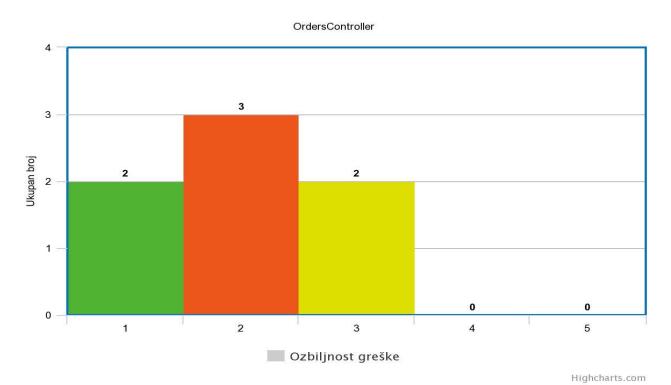
## Almedin Pašalić - <u>ProductsController</u>:



# Vedran Mujić – ReportsController:



# $\textbf{Lejla Heleg} - \underline{OrdersController}:$



### Dio zadatka pod d)

Izvršiti korektivne akcije koda na osnovu izvještaja inspekcije. Moderator treba da osigura da je kod ispravljen. Spisak urađenih korektivnih akcija:

#### **Aida Zametica -** DtoRequestsController:

- -U metodi AddToCart promijenjen povratni tip iz 'IActionResult' u 'JsonResult'.
- -Ukloljene metode koje nikada nisu i neće biti pozvane.
- -Dodani komentari u svrhu bolje čitljivosti i razumijevanja koda.
- -U Cart metodi dodano handlanje slučaja kada je 'userId' 'null'.

#### Lejla Heleg – ReportsControler, OrdersController:

- -Zaglavlje metode 'Edit' promijenjeno, sadržavalo 'async', a radila kao sinhrona metoda.
- -Ukloljene metoda 'OrderExist' koje nikada nije i neće biti pozvana.
- -Dodani komentari u svrhu bolje čitljivosti i razumijevanja koda u metodi 'GetOrderProducts'.
- -U liniji 61 ispravljena sintaksna greška, nedostajao znak ';'.
- -Uklonjena varijabla 'p1' koja nije iskorištena u ostatku koda.

#### Almedin Pašalić – <u>ProductsControler:</u>

- U 'PopularSearches' metodi dodano handlanje slučaja kada je 'FlowerType' 'null'.
- -Ukoljenjene redudantne linije koda.
- -Dodani komentari u svrhu bolje čitljivosti i razumijevanja koda u metodama.
- -Imenovane varijable poštujući CamelCase notaciju.
- -Ispravljeno neadekvatno korištenje ključnih riječi 'async' i 'await'

#### Ilhan Hasičić – HomeController:

- U 'IActionResult' metodi dodano handlanje slučaja kada je 'FlowerType' 'null'.
- -Uklonjena ' logger' varijabla koja se ne koristi.
- -Dodani komentari u svrhu bolje čitljivosti i razumijevanja koda u metodama.
- -Imenovane varijable poštujući CamelCase notaciju.

#### **Vedran Mujić** – DiscountsController, ReportsController:

- -Dodani komentari u svrhu bolje čitljivosti i razumijevanja koda u metodama.
- -Imenovane varijable poštujući CamelCase notaciju.
- -Ukoljenjene redudantne linije koda.
- -Uklonjena varijabla 'r1' koja nije iskorištena u ostatku koda.
- -Klasa DiscountsController obrisana jer se nije koristila u aplikaciji(metode koje zahtjeva 'Discount' funkcionalnost sadržane u drugom kontroleru).