22.4 Test Design Techniques: Pairwise testing: Homework

Apply the pairwise to the functionality, you cover with test cases for the previous HW.

Output: 2-3 test cases using pairwise testing.

API: User and Role.

New user creation demands 7 parameters: first name, middle name, last name, username, e-mail, password, role name.

1. Let's define the equivalence classes and boundary values for each parameter:

First name (varchar(255), string): *Only alphabets, only numbers, letters (alphabets)+numbers, numbers + special characters, only special characters, alphabets + special characters, space inside, only spaces.*
Boundaries:
minimum length, empty field (not entered value), maximum length (255), maximum length (255)+/- 1.

Middle name (varchar(255), string): *Only alphabets, only numbers, letters (alphabets)+numbers, numbers + special characters, only special characters, alphabets + special characters, space inside, only spaces.*
Boundaries:
minimum length, empty field (not entered value), maximum length (255), maximum length (255)+/- 1.

Last name (varchar(255), string): *Only alphabets, only numbers, letters (alphabets)+numbers, numbers + special characters, only special characters, alphabets + special characters, space inside, only spaces.*
Boundaries:
minimum length, empty field (not entered value), maximum length (255), maximum length (255)+/- 1.

Username (varchar(255), string): *Only alphabets, only numbers, letters (alphabets)+numbers, numbers + special characters, only special characters, alphabets + special characters, space inside, only spaces.*
Boundaries:
minimum length, empty field (not entered value), maximum length (255), maximum length (255)+/- 1.

E-mail (varchar(255), string):

Positive values:

<u>Local-part:</u>
- uppercase and lowercase Latin letters
- digits 0 to 9
- dot (.), underscore (_), hyphen (-). dot ., provided that it is not the first or last character and provided also that it does not appear consecutively (e.g., John..Doe@example.com is not allowed)
- The maximum total length of the local-part of an email address is 64 octets.

<u>Domain:</u>
- uppercase and lowercase Latin letters
- Digits 0 to 9, provided that top-level domain names are not all-numeric;
- Hyphen -, provided that it is not the first or last character.

@ sing between local part and domain.

Negative values:

Non-latin letters, restricted characters !#$%&'*+/=?^`{|}~

Only Latin letters, only numbers, Latin letters+numbers, numbers + special characters, Latin letters+ numbers + special characters, only special characters, Latin letters + special characters, space inside, only spaces,
email address without @, email address with @
Boundaries:
minimum length, empty field (not entered value), maximum Local-part length (64), maximum Local-part length (64) +/-1, maximum length (255)+/- 1, email address without @

Password (varchar(255), string): *Only alphabets, only numbers, letters (alphabets)+numbers, numbers + special characters, only special characters, alphabets + special characters, space inside, only spaces, mandatory special symbol "@", special.*
Boundaries:
minimum length, empty field (not entered value), maximum length (255), maximum length (255)+/- 1.

Role name (varchar(255), string): *Only alphabets, only numbers, letters (alphabets)+numbers, numbers + special characters, only special characters, alphabets + special characters, space inside, only spaces.*
Boundaries:
minimum length, empty field (not entered value), maximum length (255), maximum length (255)+/- 1.

2. To cover all the classes, let's use the following values:

First name (varchar(255), string) *"Valeria", "1234567890", "Valeria17", "12345+-%@", "!@#$%^&*()_+=-", "Valeria!@#$%", "Va leria", "   ", "A", "1", "AB", "",*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwe

rtyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj" *(255)*

"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqHwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj"*(256)*

"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertGyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj"*(254)*

Middle name (varchar(255), string) *"Subbordew", "1234567890", "Subbordew 17", "12345+-%@", "!@#$%^&*()_+=-", "Subbordew!@#$%", "Subb ordew", "   ", "A", "1", "AB", "",*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj" *(255)*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqHwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj"(256)*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertGyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj"(254)*

Last name (varchar(255), string) *"Anderson", "1234567890", "Anderson 17", "12345+-%@", "!@#$%^&*()_+=-", "Anderson!@#$%", "Ander son", "   ", "A", "1", "Ab", "",*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj" *(255)*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqHwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj"(256)*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertGyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj"(254)*

Username (varchar(255), string) *"clare", "1234567890", "clare17", "12345+-%@", "!@#$%^&*()_+=-", "clare!@#$%", "cla re", "   ", "A", "1", "AB", "",*
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwe

rtyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxs
wedcvfrtgbnhyujRTqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedc
vfrtgbnhyuj*" (255)*

*"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwe
rtyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxs
wedcvfrtgbnhyujRTqHwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswe
dcvfrtgbnhyuj"(256)*

*"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwe
rtyuiopzxcvbnmnbvqazxswedcvfrtnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswe
dcvfrtgbnhyujRTqwertGyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcv
frtgbnhyuj"(254)*

E-mail (varchar(255), string) test, 1234567890, test@test.com,
1234567890@1234567890.123, test777@test.com, test-777@test.com, test7_77@test.com,
tes.t777@test.com, .test@test.com, test@te-st.com, test@1233, test@12345.com, test@test,
test..@test.com, test@.test.com, test@-test.com, test@test-test.com, test@test.com-,
testtesttesttesttesttesttesttesttesttesttesttesttesttesttest@test.com (local part = 64),
testtesttesttesttesttesttesttesttesttesttesttesttesttesttestt@test.com (local part = 65),
testtesttesttesttesttesttesttesttesttesttesttesttesttesttes@test.com (local part = 63),
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[testtesttesttesttesttesttesttesttesttesttesttesttesttesttest@testtesttesttesttesttesttestt
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esttesttesttesttesttesttesttesttesttesttesttes.com](mailto:...) (256)
[testtesttesttesttesttesttesttesttesttesttesttesttesttesttest@testtesttesttesttesttesttestt
esttesttesttesttesttesttesttesttesttesttesttesttesttesttesttesttesttesttesttesttesttesttestt
esttesttesttesttesttesttesttesttesttesttesttestt.com](mailto:...) (254)

Password (varchar(255), string) *"password", "1234567890", "password17", "12345+-%@",
"!@#$%^&*()_+=-", "password!@#$%", "pass word", "   ", "A", "1", "AB", "",*
*"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwe
rtyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxs
wedcvfrtgbnhyujRTqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedc
vfrtgbnhyuj" (255)*
*"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwe
rtyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxs
wedcvfrtgbnhyujRTqHwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswe
dcvfrtgbnhyuj"(256)*
*"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwe
rtyuiopzxcvbnmnbvqazxswedcvfrtnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswe
dcvfrtgbnhyujRTqwertGyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcv
frtgbnhyuj"(254)*

Role name (varchar(255), string) *"rolename""role_name", "1234567890", "rolename17", "12345+-%@", "!@#$%^&*()_+=-", "rolename!@#$%", "role name", "   ", "A", "1", "AB", "",* *"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj"* **(255)**
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqHwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj" **(256)**
"qwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtnhyujqwertyuiopasdfghjkllqwertyuiopzxcvbnmnbvqazxswedcvfrtgbnhyujRTqwertGyuiopasdfghjkllqwertyuiopzxcvbnmnbvtYUIJHGFFRTTYqazxswedcvfrtgbnhyuj" **(254)**

3. Let's not take into consideration the values that give us an error anyway (negative tests):

First name (varchar(255), string) *"1234567890", "Valeria17", "12345+-%@", "!@#$%^&*()_+=-", "Valeria!@#$%", "   ", "1", "".*
Middle name (varchar(255), string) *"1234567890", "Subbordew 17", "12345+-%@", "!@#$%^&*()_+=-", "Subbordew!@#$%", "   ", "1", "",*
Last name (varchar(255), string) *"1234567890", "Anderson 17", "12345+-%@", "!@#$%^&*()_+=-", "Anderson!@#$%", "   ", "1", "".*
Username (varchar(255), string) *"!@#$%^&*()_+=-", "   ", "".*
E-mail (varchar(255), string) test, 1234567890, 1234567890@1234567890.123, .test@test.com, test@1233, test@test, test@.test.com, test@-test.com, test@test.com-,
Password (varchar(255), string) *"pass word", "!@#$%^&*()_+=-", "   ", "A", "1", "AB", "",*
Role name (varchar(255), string) *"12345+-%@", "!@#$%^&*()_+=-", "rolename!@#$%", "   ", "".*

4. The rest values could be used to form combinations with teremok.com.

	First name	Middle name	Last name	Username	E-mail	Password	Role
× Row 1	Valeria	Subbordew	Anderson	clare	test@test.com	password	rolename
× Row 2	Va leria	Subb ordew	Ander son	1234567890	test777@test.com	1234567890	role_name
× Row 3	A	A	A	clare17	test-777@test.com	password17	rolename17
× Row 4	Ab	Ab	Ab	12345+-%@	test7_77@test.com	password!@#$%	role name
× Row 5	qwertyuiopasdfghjkllc	qwertyuiopasdfghjkllc	qwertyuiopasdfghjkllc	clarel@#$%	tes.t777@test.com	qwertyuiopasdfghjkllc	A
× Row 6	qwertyuiopasdfghjkllc	qwertyuiopasdfghjkllc	qwertyuiopasdfghjkllc	cla re	test@te-st.com	qwertyuiopasdfghjkllc	1
× Row 7	qwertyuiopasdfghjkllc	qwertyuiopasdfghjkllc	qwertyuiopasdfghjkllc	A	test@12345.com	qwertyuiopasdfghjkllc	Ab
× Row 8	{your value}	{your value}	{your value}	1	test@test-test.com	{your value}	qwertyuiopasdfghjkllc

✕ Row 9	{your value}	{your value}	{your value}	Ab	testtesttesttesttesttes	{your value}	qwertyuiopasdfghjkllc
✕ Row 10	{your value}	{your value}	{your value}	qwertyuiopasdfghjkllc	testtesttesttesttesttes	{your value}	qwertyuiopasdfghjkllc
✕ Row 11	{your value}	{your value}	{your value}	qwertyuiopasdfghjkllc	testtesttesttesttesttes	{your value}	{your value}
✕ Row 12	{your value}	{your value}	{your value}	qwertyuiopasdfghjkllc	testtesttesttesttesttes	{your value}	{your value}
✕ Row 13	{your value}	{your value}	{your value}	{your value}	testtesttesttesttesttes	{your value}	{your value}
✕ Row 14	{your value}	{your value}	{your value}	{your value}	testtesttesttesttesttes	{your value}	{your value}
✕ Row 15	{your value}	{your value}	{your value}	{your value}	{your value}	{your value}	{your value}

5. Using the teremok.com, let's create a table, generate combinations. The result table attached to the HW.
Here teremok.com couldn't handle the volume to generate All combinations. Thus, generated just Pairwise table.

6. Let's choose the most interesting combinations and create test cases in TMS:
https://app.qacoverage.com/Mentorpiece/project/M20/test-case/1/M20-TC1866

https://app.qacoverage.com/Mentorpiece/project/M20/test-case/1/M20-TC1867

https://app.qacoverage.com/Mentorpiece/project/M20/test-case/1/M20-TC1868