



IT314

SOFTWARE ENGINEERING

Group 16

Online Examination System

Black Box Testing

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Group Members:

No	Student Id	Name
1	202201204	Meet Mahaliya
2	202201208	Devang Vaghani
3	202201210	Mihir Prajapati
4	202201214	Harshali Dharmik
5	202201225	Gunjan Saroliya
6	202201227	Nishank Kansara
7	202201229	Yash Chaudhari
8	202201241	Divyesh Ramani
9	202201242	Dev Davda
10	202201251	Mehul Vagh

Administrator Login

Equivalence class partitioning :

Authorization Code

- E1 : Match with Authorization code(Valid)
- E2 : Not match with Authorization code(Invalid)

Boundary Value Analysis:

Authorization Code	Expected output	Reason	Classes Covered
Admin@810	Valid	Code is correct	E1
Admin@111	Invalid	Code is incorrect	E2
	Invalid	Field is empty	E2

Login

Equivalence class partitioning :

Username

- E1: Username already registered. (Valid)
- E2: Username not registered. (Invalid)
- E3: Empty field. (Invalid)

Password

- E4: Match with the original password. (Valid)
- E5: It does not match with the original password. (Invalid)
- E6: Empty field. (Invalid)

Boundary Value Analysis:

Username	Password	Expected output	Reason	Classes Cover
	xyz	Invalid	username is empty	E3
202200001		invalid	Password is empty	E6
202200001	xyz	Valid	All fields are correct.	E1, E4
2022	xyz	Invalid	Username is incorrect	E2
202200001	Incorrect	Invalid	Password is incorrect.	E5

Create Student

Equivalence class partitioning :

First name, Middle name & Last name

- E1: Contain numbers or space or Special characters. (Invalid)
- E2: Name contains only alphabets from 1 to 30 (Valid)
- E3: Length > 30 (Invalid)
- E4 : Length == 0/Empty field (Invalid)

Date of Birth

- E5: A DOB that is in the future. (invalid)
- E6: A DOB is from the past. (Valid)

Email Validation

- E7: contains “@” between characters and numbers than ‘ and after this contains characters or numbers (Valid) (ex. “valid@valid.valid”)
- E8: Missing “@” (invalid). (ex. “extra.com”, invalid)
- E9: Missing characters or numbers before “@” (e.g., “@domain.com”, invalid).
- E10: Missing characters or numbers after “@” (e.g., “extra@”, invalid).
- E11 : After using “@” use other special characters except “.”(Invalid) (ex. invalid@invalid\$.com)
- E12 : Before using “@” use special characters(Valid)(ex.V_@valid.com)
- E13 : After using “@” don’t use “.”(Invalid)(ex. “ok@invalid”)

- E14: Missing characters and numbers after “.” (Invalid) (ex. “ok@invalid.”)
- E15: Email is already registered. (Invalid)
- E16: The email field is empty. (Invalid)

Contact Number

- E17: Contains characters (Invalid)
- E18: Empty field (Invalid)
- E19: Contains a 10-digit number. (Valid)
- E20: length of field > 10 (Invalid)

Admission Year

- E21 : Admission year not from the past(Valid)
- E22 : Admission year from the past(Invalid)

Branch

- E23 : Branch is selected(Valid)
- E24 : Branch is not selected(Invalid)

Gender

- E25 : Gender is selected(Valid)
- E26 : Gender is not selected(Invalid)

Graduation

- E27 : Graduation is selected(Valid)
- E28 : Graduation is not selected(Invalid)

Boundary Value Analysis:

Test case 1

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number: 7862875359
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output: Valid
- Reason: All fields are valid
- Classes Covered : E2 , E6, E7, E19, E21, E23, E25, E27

Test case 2

- First name - Mihir123@
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number: 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output: Invalid
- Reason: First name contains number

- Valid Classes Covered: E6, E7, E19, E21, E23, E25, E27
- Invalid Classes Covered: E1

Test case 3

- First name - Mihir
- Last Name -
Prajapatimihirdineshkumardineshkumarprajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Last name length is greater than 30
- Valid Classes Covered: E6, E7, E19, E21, E23, E25, E27
- Invalid Classes Covered: E3

Test case 4

- First name - Mihir
- Last Name - Prajapati
- Middle Name -
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology

- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Middle name is empty
- Valid Classes Covered: E6, E7, E19, E21, E23, E25, E27
- Invalid Classes Covered: E4

Test case 5

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2025
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Dob has future values
- Valid Classes Covered: E2, E7, E19, E21, E23, E25, E27
- Invalid Classes Covered: E5

Test case 6

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210daiict.ac.in

- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : email is not contain “@”
- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E8

Test case 7

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - @daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : no character or number before “@”
- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E9

Test case 8

- First name - Mihir
- Last Name - Prajapati

- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Missing characters or numbers after "@"
- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E10

Test case 9

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - [202201210@daii\\$\\$ct.ac.in](mailto:202201210@daii$$ct.ac.in)
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : "\$" is use after "@"
- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E11

Test case 10

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - [202201210_\\$.daiict.ac.in](mailto:202201210_$.daiict.ac.in)
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Valid
- Reason : All field are valid
- Classes Covered : E2 ,E6,E7, E12,E19, E21, E23, E25, E27

Test case 11

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : there is no “.” in email followed by “@”

- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E13

Test case 12

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Missing characters and numbers after “.”
- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E14

Test case 13

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in(already registered)
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male

- Graduation - UG
- Expected Output : Invalid
- Reason : Email is already registered.
- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E15

Test case 14

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address -
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Email field is empty
- Valid Classes Covered: E2, E6, E19, E21, E23, E25, E27
- Invalid Classes Covered: E16

Test case 15

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : asbhadbh

- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : contact number contain characters
- Valid Classes Covered: E2, E6,E7, E21, E23, E25, E27
- Invalid Classes Covered: E17

Test case 16

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daaiict.ac.in
- Contact Number :
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : contact number field is empty
- Valid Classes Covered: E2, E6,E7, E21, E23, E25, E27
- Invalid Classes Covered: E18

Test case 17

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar

- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : 786287534978941
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Length of contact number is > 10
- Valid Classes Covered: E2, E6,E7, E21, E23, E25, E27
- Invalid Classes Covered: E20

Test case 18

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2022
- Branch - Information and Communication Technology
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Admission year is from past
- Valid Classes Covered: E2, E6,E7, E19, E23, E25, E27
- Invalid Classes Covered: E22

Test case 19

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2024
- Branch -
- Gender - Male
- Graduation - UG
- Expected Output : Invalid
- Reason : Branch is not selected
- Valid Classes Covered: E2, E6,E7, E19, E21, E25, E27
- Invalid Classes Covered: E24

Test case 20

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender -
- Graduation - UG
- Expected Output : Invalid
- Reason : Gender is not selected
- Valid Classes Covered: E2, E6,E7, E19, E21, E23, E27

- Invalid Classes Covered: E26

Test case 21

- First name - Mihir
- Last Name - Prajapati
- Middle Name - Dineshkumar
- Date Of Birth - 08/11/2004
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Admission Year - 2024
- Branch - Information and Communication Technology
- Gender - Male
- Graduation -
- Expected Output : Invalid
- Reason : Graduation is not selected
- Valid Classes Covered: E2, E6,E7, E19, E21, E23, E25
- Invalid Classes Covered: E28

Create Examiner

Equivalence class partitioning :

First name , Middle name & Last name

- E1 : Contain numbers or space or Special characters.
(Invalid)
- E2 : Name contains only alphabets and length is from 1 to 30
(Valid)
- E3 : Length > 30 (Invalid)
- E4 : Length == 0/Empty field (Invalid)

Username

- E5 : Contain characters or numbers or Special characters
with length 1 to 30. (Valid)
- E6 : Length > 30 (Invalid)
- E7 : Length == 0/Empty field (Invalid)

Email Validation

- E8 : contains “@” between characters and numbers than ‘
and after this contains characters or numbers(Valid)(ex.
“valid@valid.valid”)
- E9 : Missing “@” (invalid). (ex. “extra.com”)
- E10 : Missing characters or number before “@” (e.g.,
“@domain.com”, invalid).
- E11 : Missing characters or number after “@” (e.g., “extra@”,
invalid).

- E12 : After using “@” use other special characters except “.”(Invalid) (ex. invalid@invali\$.com)
- E13 : Before using “@” use special characters(Valid)(ex.V_@valid.com)
- E14 : After using “@” don’t use “.”(Invalid)(ex. “ok@invalid”)
- E15 : Missing characters and numbers after “.” (Invalid) (ex. “ok@invalid.”)
- E16 : Already Email is registered.(Invalid)
- E17 : Email field is empty.(Invalid)

Contact Number

- E18 : Contains characters(Invalid)
- E19 : Empty field (Invalid)
- E20 : Contains a 10 digit number. (Valid)
- E21 : length of field > 10 (Invalid)

Date of Birth

- E22 : A DOB that is in the future. (invalid)
- E23 : A DOB is not from the future . (Valid)

Gender

- E24 : Gender is selected(Valid)
- E25 : Gender is not selected(Invalid)

Boundary Value Analysis:

Test case 1

- First name - Mihir

- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Valid
- Reason : All field are valid
- Classes Covered : E2 ,E5,E8, E20, E23, E24

Test case 2

- First name - Mihir12
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : First name contains number.
- Valid Classes Covered: E5,E8, E20, E23, E24
- Invalid Classes Covered: E1

Test case 3

- First name - Mihir
- Username - MDP@_1328

- Middle Name -
DineshkumarDineshkumardineshkumarprajapati
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : Middle name field length is greater than 30
- Valid Classes Covered: E5,E8, E20, E23, E24
- Invalid Classes Covered: E3

Test case 4

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name -
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : Last name is empty
- Valid Classes Covered: E5,E8, E20, E23, E24
- Invalid Classes Covered: E4

Test case 5

- First name - Mihir
- Username - MDP@_13283445646565654@kjdkjgkjrferkferk
- Middle Name - Dineshkumar

- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : username has length greater than 30
- Valid Classes Covered: E2,E8, E20, E23, E24
- Invalid Classes Covered: E6

Test case 6

- First name - Mihir
- Username -
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : Username is empty
- Valid Classes Covered: E2,E8, E20, E23, E24
- Invalid Classes Covered: E7

Test case 7

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210daiict.ac.in

- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : Missing "@" in email
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E9

Test case 8

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - @daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : Missing characters or number before "@"
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E10

Test case 9

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004

- Gender - Male
- Expected Output : Invalid
- Reason : Missing characters or number after "@" in email.
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E11

Test case 10

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - [202201210@daiict\\$.ac.in](mailto:202201210@daiict$.ac.in)
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : special character present after "@" in email
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E12

Test case 11

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - [202201210\\$\\$@daiict.ac.in](mailto:202201210$$@daiict.ac.in)
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male

- Expected Output : Valid
- Reason : All field are valid
- Classes Covered : E2 ,E5,E8, E13,E20, E23, E24

Test case 12

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : There is no “.” followed by @ in email
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E14

Test case 13

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - [202201210@daiict.](mailto:202201210@daiict)
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid

- Reason : There is no number of characters after “.”
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E15

Test case 14

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in (email is already registered)
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : Email is already registered
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E16

Test case 15

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address -
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender - Male

- Expected Output : Invalid
- Reason : Email field is empty
- Valid Classes Covered: E2,E5, E20, E23, E24
- Invalid Classes Covered: E17

Test case 16

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862kjhdsjk
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : contact number contains character.
- Valid Classes Covered: E2,E5, E8, E23, E24
- Invalid Classes Covered: E18

Test case 17

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number :
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid

- Reason : contact number is empty
- Valid Classes Covered: E2,E5, E8, E23, E24
- Invalid Classes Covered: E19

Test case 18

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349545
- Date Of Birth - 08/11/2004
- Gender - Male
- Expected Output : Invalid
- Reason : contact number has length greater than 10.
- Valid Classes Covered: E2,E5, E8, E23, E24
- Invalid Classes Covered: E21

Test case 19

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2050
- Gender - Male
- Expected Output : Invalid

- Reason : Date of birth is from the future.
- Valid Classes Covered: E2,E5, E8, E20, E24
- Invalid Classes Covered: E22

Test case 20

- First name - Mihir
- Username - MDP@_1328
- Middle Name - Dineshkumar
- Last Name - Prajapati
- Email address - 202201210@daiict.ac.in
- Contact Number : 7862875349
- Date Of Birth - 08/11/2004
- Gender -
- Expected Output : Invalid
- Reason : Gender is not selected.
- Valid Classes Covered: E2,E5, E8, E20, E23
- Invalid Classes Covered: E25

Forget password

Equivalence class partitioning :

Email

- E1 : email is already registered(Valid)
- E2 : email is not already registered(Invalid)
- E3 : email is empty(Invalid)

Boundary Value Analysis:

Email	Expected output	Reason	Classes Covered
202201210@daiict.ac.in	Valid	Email is already registered	E1
	Invalid	Email field is empty	E3
202501210@daiict.ac.in	Invalid	Email is not registered	E2

OTP verification

Equivalence class partitioning :

OTP

- E1 : Match with sent OTP(Valid)
- E2 : Not match with sent OTP(Invalid)
- E3 : Empty field (Invalid)

New Password

- E4 : length of password < 8 (Invalid)
- E5 : length of password > 30 (Invalid)
- E6 : Missing lowercase letter (Invalid)
- E7 : Missing uppercase letter (Invalid)
- E8 : Missing number (Invalid)
- E9 : Missing special character (Invalid)
- E10 : Field is empty(Invalid)
- E11 : contains length from 8 to 30,at least one uppercase letter,at least one lowercase letter,at least one number and at least one special character(Valid)

Confirm password

- E12 : Match with New password field(Valid)
- E13 : Does not match with new password field(Invalid)

Boundary Value Analysis:

OTP	New password	Confirm Password	Expected Output	Reason	Classes Covered
1234	Mihir@123	Mihir@123	Valid	All fields are valid	E1,E11, E12
23	Mihir@123	Mihir@123	Invalid	OTP is not math with sent OTP	E2
	Mihir@123	Mihir@123	Invalid	OTP field is empty	E3
1234	Mi@8	Mi@8	Invalid	New password length less than 8	E4
1234	Mihir@123 Mihir@123 Mihir@123 Mihir@123	Mihir@123 Mihir@123 Mihir@123 Mihir@123	Invalid	New password length greater than 30	E5
1234	MIHIR@123	MIHIR@123	Invalid	Password is not contain lowercase letter	E6
1234	mihir@123	mihir@123	Invalid	Password is not contain uppercase letter	E7
1234	Mihir@mihi r	Mihir@mihir	Invalid	Password is not contain number	E8
1234	Mihir123	Mihir123	Invalid	Password is	E9

				not contain special character	
1234			Invalid	Password is empty	E10
1234	Mihir@123	Mihir@223	Invalid	Confirm Password is not matched with New password	E13

Reset password

Equivalence class partitioning :

Current password

- E1 : match with current password(Valid)
- E2 :Not match with current password (Invalid)
- E3 : Empty field (Invalid)

New Password

- E4 : length of password < 8 (Invalid)
- E5 : length of password > 30 (Invalid)
- E6 : Missing lowercase letter (Invalid)
- E7 : Missing uppercase letter (Invalid)
- E8 : Missing number (Invalid)
- E9 : Missing special character (Invalid)
- E10 : Field is empty(Invalid)
- E11 : Contains length from 8 to 30,at least one uppercase letter,at least one lowercase letter,at least one number and at least one special character(Valid)

Confirm password

- E12 : Match with New password field(Valid)
- E13 : Does not match with new password field(Invalid)

Boundary Value Analysis:

Current Password	New password	Confirm Password	Expected Output	Reason	Classes Covered
Admin@810	Admin@811	Admin@811	Valid	All fields are valid	E1,E11, E12
Admin@910	Admin@811	Admin@811	Invalid	Current password is incorrect.	E2
	Admin@811	Admin@811	Invalid	Current password field is empty.	E3
Admin@810	Ad@811	Ad@811	Invalid	New password length less than 8	E4
Admin@810	Admin@811 Admin@811 Admin@811 Admin@811	Admin@811 Admin@811 Admin@811 Admin@811	Invalid	New password length greater than 30	E5
Admin@810	ADMIN@811	ADMIN@811	Invalid	New Password is not contain lowercase letter	E6
Admin@810	admin@811	admin@811	Invalid	New Password is not contain uppcase	E7

				letter	
Admin@810	Admin@adm	Admin@adm	Invalid	New Password is not contain number	E8
Admin@810	Admin8811	Admin8811	Invalid	New Password is not contain special character	E9
Admin@810			Invalid	New Password is empty	E10
Admin@810	Admin@811	Admin@888	Invalid	Confirm Password is not matched with New password	E13

Create Exam:

Equivalence Classes for Create Exam:

Exam Title

E1: Exam Title is between 5 and 50 characters (**Valid**).

E2: Exam Title is less than 5 characters or empty (**Invalid**).

E3: Exam Title exceeds 50 characters (**Invalid**).

Exam Type

E4 : Exam type is selected (**Valid**).

E5:Exam type is not selected (**invalid**).

Batch

E6: Batch is a valid 4-digit year (**Valid**).

E7: Batch is not a 4-digit year or is empty (**Invalid**).

Subject

E8: Subject length is between 5 and 50 characters (**Valid**).

E9: Subject length is less than 5 characters or empty or only numbers (**Invalid**).

E10: Subject length exceeds 50 characters (**Invalid**).

Select Branch

E11: Branch is selected (**Valid**).

E12: Branch is not selected (**Invalid**).

Semester

E13: Semester is a valid integer between 1 and 8 (**Valid**).

E14: Semester is not a valid integer, exceeds the range, or is empty (**Invalid**).

Status

E15: Status is selected from the predefined dropdown (**Valid**).

E16: Status is not selected or is left empty (**Invalid**).

Boundary value analysis for Create Exam :

Test Case 1

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem1
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** Valid
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E1,E4,E6,E8,E11,E13,E15
- **Invalid Classes Covered:** None

Test Case 2

- **Exam Title:** empty
- **Exam Type:** Insem1
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:** Exam title not be empty
- **Valid Classes Covered:** E4,E6,E8,E11,E13,E15

- **Invalid Classes Covered:** E2

Test Case 3

- **Exam Title:** (35 characters Title)
- **Exam Type:** Insem1
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:** Exam title must be less or equal than 50 characters
- **Valid Classes Covered:** E4,E6,E8,E11,E13,E15
- **Invalid Classes Covered:** E3

Test Case 4

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** insem1
- **Batch:**2024
- **Subject:** "Mathematics" (11 characters)
- **Branch :**MNC
- **Status:**Published
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E1,E4,E6,E8,E11,E13,E15
- **Invalid Classes Covered:** None

Test Case 5

- **Exam Title:** "Math Exam" (12 characters)

- **Exam Type:** :(Not Selected)
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** insem2
- **Reason:** Exam type must be selected
- **Valid Classes Covered:** E1,E6,E8,E11,E13,E15
- **Invalid Classes Covered:** E5

Test Case 6

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem2
- **Batch:**22222
- **Subject:** "Mathematics" (11 characters)
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:** Batch is must be for digit number
- **Valid Classes Covered:** E1,E4,E8,E11,E13,E15
- **Invalid Classes Covered:** E7

Test Case 7

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem1
- **Batch:**empty or characters
- **Subject:** "Mathematics" (11 characters)
- **Branch :**!CT

- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:** Batch is must be for digit number
- **Valid Classes Covered:** E1,E4,E8,E11,E13,E15
- **Invalid Classes Covered:** E7

Test Case 8

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem2
- **Batch:**2022
- **Subject:** empty
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:**subject name not be empty.
- **Valid Classes Covered:** E1,E4,E6,E11,E13,E15
- **Invalid Classes Covered:** E9

Test Case 9

- **Exam Title:** empty
- **Exam Type:** Insem1
- **Batch:**2022
- **Subject:** (subject Title with 55 characters)
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:**subject name not exceeded 50.

- **Valid Classes Covered:** E4,E6,E11,E13,E15
- **Invalid Classes Covered:** E2

Test Case 10

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem2
- **Batch:**2022
- **Subject:** empty
- **Branch :**!CT
- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:**subject name empty.
- **Valid Classes Covered:** E1,E4,E6,E11,E13,E15
- **Invalid Classes Covered:** E9

Test Case 11

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem2
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :(**(Not Selected)
- **semester:**5
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E1,E4,E6,E8,E13,E15
- **Invalid Classes Covered:** E12

Test Case 12

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem1
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :**ICT
- **semester:**5
- **Status:**Pending
- **Expected Output:** valid
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E1,E4,E6,E8,E13,E15
- **Invalid Classes Covered:** None

Test Case 13

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem2
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :** ICT
- **semester:**empty
- **Status:**Pending
- **Expected Output:** Invalid
- **Reason:**semester not be empty
- **Valid Classes Covered:** E1,E4,E6,E8,E11,E15
- **Invalid Classes Covered:** E14

Test Case 14

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** Insem1
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)

- **Branch :**ICT
- **Status:**Not selected
- **Expected Output:** Invalid
- **Reason:** Status must be selected
- **Valid Classes Covered:** E1,E4,E6,E8,E11,E13
- **Invalid Classes Covered:** E16

Test Case 15

- **Exam Title:** "New Exam" (12 characters)
- **Exam Type:** Insem2
- **Batch:**2022
- **Subject:** "Mathematics" (11 characters)
- **Branch :**ICT
- **Status:**Pending
- **Reason:**All input field are valid
- **Expected Output:** valid
- **Valid Classes Covered:** E1,E4,E6,E8,E11,E13,E15
- **Invalid Classes Covered:** None

Test Case 16

- **Exam Title:** "Math Exam" (12 characters)
- **Exam Type:** EndSem
- **Batch:**2024
- **Subject:** "Mathematics" (11 characters)
- **Branch :**MNC
- **Status:**Published
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E1,E4,E6,E8,E11,E13,E15
- **Invalid Classes Covered:** None

Equivalence Classes for Timing Details in Create Exam :

Exam Duration Constraints:

- **E1:** Update Exam Duration is less than 10 minutes (**Invalid**).
- **E2:** Update Exam Duration is greater than 10 minutes (**Valid**).
- **E3:** Update Exam Duration empty(**Invalid**).

Exam Date Constraints:

- **E4:** Update Exam Date is before the start exam or empty (**Invalid**).
- **E5:** Exam date is after the current date (**Valid**).

Exam Time:

- **E6:** Exam time is empty (**Invalid**).
- **E7:** Exam time is not empty (**valid**).

Boundary value analysis for Timing Details in Create Exam:

Test case 1

- **Update Exam Duration:** 120 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Valid
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E2, E5, E7
- **Invalid Classes Covered:** None

Test case 2

- **Update Exam Duration:** 2 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Exam time is not less than 10 minutes
- **Valid Classes Covered:** E5, E7
- **Invalid Class Covered :**E1

Test case 3

- **Update Exam Duration:** empty
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Exam time is not more than 480 minutes
- **Valid Classes Covered:**E5, E7
- **Invalid Class Covered :**E3

Test case 4

- **Update Exam Duration:** 50 minutes
- **Update Exam Date:** "2000-12-15"
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Exam date is not past date
- **Valid Classes Covered:**E2, E7
- **Invalid Class Covered :**E4

Test case 5

- **Update Exam Duration:** 50 minutes
- **Update Exam Date:** empty
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Exam date is not empty
- **Valid Classes Covered:**E2, E7
- **Invalid Class Covered :**E4

Test case 6

- **Update Exam Duration:** 50 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** empty
- **Expected Output:** Invalid
- **Reason:** Exam time is not empty
- **Valid Classes Covered:**E2, E5
- **Invalid Class Covered :**E6

Test case 7

- **Update Exam Duration:** 15 minutes

- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 PM"
- **Expected Output:** Valid
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E2, E5, E7
- **Invalid Classes Covered:** None

Equivalence Classes for Add question in Create Exam :

Question Text:

- **E1:** Question text is empty (**Invalid**).
- **E2:** Question text is not empty(**Valid**).

Select Mark:

- **E3:** Points are less than 1 or empty (**Invalid**).
- **E4:** Points are greater than or equal to 1(**Valid**).

Select No. of Options :

- **E5:** No. of Options are less than 2 or empty (**Invalid**).
- **E6:** No. of Options are greater than or equal to 2.(**Valid**)

Option Text:

- **E7:** Option text is empty (**Invalid**).
- **E8:** Option text length is between 1 and 500 characters (**Valid**).
- **E9:** Option text length exceeds 500 characters.(**Invalid**)
- **E10:** Two or more options are the same. (**Invalid**)

Answer:

- **E11:** Answer is selected.(**valid**)
- **E12:** Answer is not selected.(**invalid**)

Difficulty Selection:

- **E13:** Difficulty selected.(**Valid**)
- **E14:** Difficulty Not selected.(**Invalid**)

Boundary value analysis for Add Question in Create Exam :

Test case 1

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** 12
- **No. of Options:** 2
- **Options:** Option 1: "555" , Option 2: "58"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Selected (Option 1).
- **Expected Output:** valid
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E2,E4,E6,E8,E11,E13
- **Invalid Classes covered:** None

Test case 2

- **Question Text:** empty
- **Marks:** 12
- **No. of Options:** 2
- **Difficulty Selection:** Selected ("Easy").
- **Answer:** Selected (Option 1).
- **Expected Output:** Invalid
- **Reason:** Question text is not to be empty
- **Valid Classes Covered:** E4,E6,E8,E11,E13
- **Invalid Classes covered:** E1

Test case 3

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** -1
- **No. of Options:** 2

- **Options:** Option 1: "555" , Option 2: "58"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Selected (Option 1).
- **Expected Output:** Invalid
- **Reason:** Mark can not be negative
- **Valid Classes Covered:** E2,E6,E8,E11,E13
- **Invalid Classes covered:** E3

Test case 4

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** empty
- **No. of Options:** 2
- **Options:** Option 1: "555" , Option 2:"55"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Selected (Option 1).
- **Expected Output:** Invalid
- **Reason:** : Mark can not be empty
- **Valid Classes Covered:** E2,E6,E8,E11,E13
- **Invalid Classes covered:** E3

Test case 5

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** 2
- **No. of Options:** empty
- **Options:** Option 1: "555" , Option 2: "554"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Selected (Option 1).
- **Expected Output:** Invalid
- **Reason:** : numbers of question not be empty

- **Valid Classes Covered:** E2,E4,E8,E11,E13
- **Invalid Classes covered:** E5

Test case 6

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** 12
- **No. of Options:** 2
- **Options:** Option 1: empty, Option 2:"5"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Selected (Option 1).
- **Expected Output:** Invalid
- **Reason:** : Option1 not be empty
- **Valid Classes Covered:** E2,E4,E6,E11,E13
- **Invalid Classes covered:** E7

Test case 7

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** 12
- **No. of Options:** 2
- **Options:** Option 1: have 600 characters, Option 2: "555"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Selected (Option 1).
- **Expected Output:** Invalid
- **Reason:** Option length not be exceeded 500 characters
- **Valid Classes Covered:** E2,E4,E6,E11,E13
- **Invalid Classes covered:** E9

Test case 8

- **Question Text:** "Value of INR to USD?" (22 characters)

- **Marks:** 12
- **No. of Options:** 2
- **Options:** Option 1: "555" , Option 2: "555"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Selected (Option 1).
- **Expected Output:** Invalid
- **Reason:** Two or more options are not the same.
- **Valid Classes Covered:** E2,E4,E6,E11,E13
- **Invalid Classes covered:** E10

Test case 9

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** 12
- **No. of Options:** 2
- **Options:** Option 1: "555", Option 2: "55"
- **Difficulty Selection:** Selected ("Easy")
- **Answer:** Not Selected
- **Expected Output:** Invalid
- **Reason:** Answer must be selected
- **Valid Classes Covered:** E2,E4,E6,E8,E13
- **Invalid Classes covered:** E12

Test case 10

- **Question Text:** "Value of INR to USD?" (22 characters)
- **Marks:** 12
- **No. of Options:** 2
- **Options:** Option 1:"555" , Option 2: "55"
- **Difficulty Selection:** Not Selected
- **Answer:** Selected (option 1)

- **Expected Output:** Invalid
- **Reason:** Difficulty not selected
- **Valid Classes Covered:** E2,E4,E6,E8,E11
- **Invalid Classes covered:** E14

Update Exam

Equivalence Classes for Update Exam:

Update Exam Title Constraints:

E1: Update Exam Title length is between 5 and 50 characters (**Valid**).

E2: Update Exam Title length is less than 5 characters or empty (**Invalid**).

E3: Update Exam Title length exceeds 50 characters (**Invalid**).

Update Exam Duration Constraints:

- **E4:** Update Exam Duration is less than 10 minutes(**Invalid**).
- **E5:** Update Exam Duration is greater than 10 (**Valid**).
- **E6:** Update Exam Duration is empty (**Invalid**).

Update Exam Date Constraints:

- **E7:** Update Exam Date is before the start exam or empty (**Invalid**).
- **E8:** Exam date is after the current date (**Valid**).

Exam Time:

- **E9:** Exam time is empty (**Invalid**).
- **E10:** Exam time is not empty (**valid**).

Boundary value analysis for Update Exam :

Test Case 1

- **Update Exam Title:** "Math Exam" (12 characters)
- **Update Exam Duration:** 120 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Valid
- **Reason:** All inputs meet valid constraints.
- **Valid Classes Covered:** E1, E5, E8, E10

Test Case 2

- **Update Exam Title:** empty
- **Update Exam Duration:** 120 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Title is not empty.
- **Valid Classes Covered:** E5, E8, E10
- **Invalid Classes Covered:** E2

Test Case 3

- **Update Exam Title:** (more than 50 characters)
- **Update Exam Duration:** 120 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Exam title characters limit exceed.
- **Valid Classes Covered:** E5, E8, E10

- **Invalid Classes Covered:** E3

Test Case 4

- **Update Exam Title:** "Math Exam" (12 characters)
- **Update Exam Duration:** 2 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Exam time is not empty.
- **Valid Classes Covered:** E1, E8, E10
- **Invalid Classes Covered:** E4

Test Case 5

- **Update Exam Title:** Title is greater than 50 characters
- **Update Exam Duration:** 50 minutes
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Less than 10 minutes is not valid.
- **Valid Classes Covered:** E5, E8, E10
- **Invalid Classes Covered:** E3

Test Case 6

- **Update Exam Title:** "Math Exam" (12 characters)
- **Update Exam Duration:** empty
- **Update Exam Date:** "2024-12-15" (Future date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** Invalid
- **Reason:** Exam Duration is not be empty

- **Valid Classes Covered:** E1, E8, E10
- **Invalid Classes Covered:** E6

Test Case 7

- **Update Exam Title:** "Math Exam" (12 characters)
- **Update Exam Duration:** 120 minutes
- **Update Exam Date:**empty
- **Exam Time:** "10:00 AM"
- **Expected Output:**invalid
- **Reason:** Exam date is not empty.
- **Valid Classes Covered:** E1, E5,E10
- **Invalid Classes Covered:** E7

Test Case 8

- **Update Exam Title:** "Math Exam" (12 characters)
- **Update Exam Duration:** 120 minutes
- **Update Exam Date:** "2009-12-15" (Past date)
- **Exam Time:** "10:00 AM"
- **Expected Output:** invalid
- **Reason:** Exam date is not Past date.
- **Valid Classes Covered:** E1, E5,E10
- **Invalid Classes Covered:** E7

Test Case 9

- **Update Exam Title:** "Math Exam" (12 characters)
- **Update Exam Duration:** 120 minutes
- **Update Exam Date:** "2024-12-15"
- **Exam Time:** (Empty)
- **Expected Output:** inValid

- **Reason:** Exam time is not empty.
- **Valid Classes Covered:** E1, E5, E11
- **Invalid Classes Covered:** E9

Test Case 10

- **Update Exam Title:** "Math Exam" (12 characters)
- **Update Exam Duration:** 50 minutes
- **Update Exam Date:** "2025-12-15"
- **Exam Time:** "10:00 AM"
- **Expected Output:** Valid
- **Reason:** All inputs are valid
- **Valid Classes Covered:** E1, E5, E8,E10
- **Invalid Classes Covered:** None

Test Case 11

- **Update Exam Title:** empty
- **Update Exam Duration:** 120 minutes
- **Update Exam Date:** "2024-12-15"
- **Exam Time:** "10:00 AM"
- **Expected Output:** invalid
- **Reason:** Exam title can not be empty
- **Valid Classes Covered:** E5, E8,E10
- **Invalid Classes Covered:** E2

Boundary value analysis for Add Question in Update Exam :

Question Text:

- **E16:** Question text empty (**Invalid**).
- **E17:** Question text is not empty (**valid**).

Option Text:

- **E19:** Option text is empty (**Invalid**).
- **E20:** Option text is not empty(**Valid**).
- **E21:** Two or more options are the same (**Invalid**).

Marks:

- **E22:** Marks are less than 1 or empty (**Invalid**).
- **E23:** Marks are positive integers (**Valid**).

Boundary value analysis for Add question in Update Exam:

Test Case 1

- **Question Text:** "What is the value of the Indian rupee in terms of the American dollar in 2024?" (90 characters)
- **Options:** option 1. 80 rupee and option 2. 85 rupee
- **Marks:** 12
- **Expected Output:** Valid
- **Reason:** All inputs are valid
- **Valid Classes Covered:** E17, E20, E23
- **Invalid Classes Covered:** None

Test Case 2

- **Question Text:** empty
- **Options:** option 1. 80 rupee and option 2. 85 rupee
- **Marks:** 12
- **Expected Output:** Invalid
- **Reason:** Question is not to be empty
- **Valid Classes Covered:** E20, E23
- **Invalid Classes Covered:** E16

Test Case 3

- **Question Text:** "What is the value of the Indian rupee in terms of the American dollar in 2024?" (90 characters)
- **Options:** option 1. 80 option 2. empty
- **Marks:** 12
- **Expected Output:** Invalid
- **Reason:** Option is not to be empty
- **Valid Classes Covered:** E17, E23
- **Invalid Classes Covered:** E19

Test Case 4

- **Question Text:** "What is the value of the Indian rupee in terms of the American dollar in 2024?" (90 characters)
- **Options:** option 1. 55 option 2. 55
- **Marks:** 12
- **Expected Output:** Invalid
- **Reason:** two or more option are not same
- **Valid Classes Covered:** E17, E23
- **Invalid Classes Covered:** E21

Test Case 5

- **Question Text:** "What is the value of the Indian rupee in terms of the American dollar in 2024?" (90 characters)
- **Options:** option 1. empty 2. empty
- **Marks:** 12
- **Expected Output:** Valid
- **Reason:** any of option can not be empty
- **Valid Classes Covered:** E17, E23
- **Invalid Classes Covered:** E19

Test Case 6

- **Question Text:** "What is the value of the Indian rupee in terms of the American dollar in 2024?" (90 characters)
- **Options:** option 1. 585 and option 2. 85
- **Marks:** -25
- **Expected Output:** Valid
- **Reason:** Mark can not to be negative
- **Valid Classes Covered:** E17, E20
- **Invalid Classes Covered:** E22

Test Case 7

- **Question Text:** "What is the value of the Indian rupee in terms of the American dollar in 2024?" (90 characters)
- **Options:** option 1. 5855 option 2. 85
- **Marks:** empty
- **Expected Output:** Invalid
- **Reason:** Mark can not be empty
- **Valid Classes Covered:** E17, E20
- **Invalid Classes Covered:** E22

Test Case 8

- **Question Text:** "What is the value of the Indian rupee in terms of the American dollar in 2024?" (90 characters)
- **Options:** option 1. 555 and option 2. 85 rupee
- **Marks:** 0
- **Expected Output:** Invalid
- **Reason:** Mark can not to zero
- **Valid Classes Covered:** E17, E20
- **Invalid Classes Covered:** E22

Create Question in Examiner

Equivalence class partitioning :

Subject Selection

- **E1** : Existing Subject is selected(**Valid**)
- **E2** : Create New Subject option selected (**Valid**)
- **E3** : Subject Not selected(**Invalid**)

Subject:

- **E4**: Subject is empty or length less than 5 characters (**Invalid**).
- **E5**: Subject length is between 5 and 50 characters (**Valid**).
- **E6**: Subject length exceeds 50 characters (**Invalid**).

Question Text:

- **E7**: Question text is empty (**Invalid**).
- **E8**: Question text is not empty(**Valid**).

Select Points:

- **E7**: Points are less than 1 or empty (**Invalid**).
- **E9**: Points are greater than or equal to 1(**Valid**).

Select No. of Options :

- **E10**: No. of Options are less than 2 or empty (**Invalid**).
- **E11**: No. of Options are greater than or equal to 2.(**Valid**)

Option Text:

- **E12**: Option text is empty (**Invalid**).
- **E13**: Option text length is not empty(**Valid**).

- **E14:** Two or more options are the same. (**Invalid**)

Answer:

- **E15:** Answer is selected.(**valid**)
- **E16:** Answer is not selected.(**invalid**)

Difficulty Selection:

- **E17:** Difficulty selected.(**Valid**)
- **E18:** Difficulty Not selected.(**Invalid**)

Boundary value analysis for Create question:

Test Case 1

Subject Selection: Existing Subject selected.

Subject: "Physics" (7 characters, valid).

Question Text: "What is gravity?" (15 characters, valid).

Options: Option 1: 9.8, Option 2: 10.

Marks: 5 (Valid).

No. of Options: 2 (Valid).

Difficulty Selection: Selected ("Medium").

Answer: Selected (Option 1).

Expected Output: Valid.

Reason: All inputs meet the valid criteria.

Valid Classes Covered: E1, E5, E8, E9, E11, E13, E15, E17.

Test Case 2

Subject Selection: Existing Subject selected.

Subject: "Math" (4 characters, invalid).

Question Text: "What is gravity?" (15 characters, valid).

Options: Option 1: 9.8, Option 2: 10.

Marks: 2 (Valid).

No. of Options: 2 (Valid).

Difficulty Selection: Selected ("Easy").

Answer: Selected (Option 1).

Expected Output: Invalid.

Reason: Subject is less than 5 characters (E4).

Invalid Classes Covered: E4.

Test Case 3

Subject Selection: Create New Subject selected.

Subject: "History of Modern Science and Technology" (41 characters, valid).

Question Text: "What is gravity?" (15 characters, valid).

Options: Option 1: 9.8, Option 2: 10.

Marks: 1 (Valid).

No. of Options: 2 (Valid).

Difficulty Selection: Not selected.

Answer: Not selected.

Expected Output: Invalid.

Reason: Question text is empty (E7) and difficulty is not selected (E18).

Invalid Classes Covered: E7, E18.

Test Case 4

Subject Selection: Create New Subject selected.

Subject: "Computer Science" (16 characters, valid).

Question Text: "What is gravity?" (15 characters, valid).

Options: Option 1: 9.8, Option 2: 9.8

Option 4: "A formula".

Marks: 10 (Valid).

No. of Options: 4 (Valid).

Difficulty Selection: Selected ("Hard").

Answer: Selected (Option 3).

Expected Output: Invalid.

Reason: Two options are the same (E14).

Invalid Classes Covered: E14.

Test Case 5

Subject Selection: No Subject selected.

Subject: (Empty, invalid).

Question Text: "What is gravity?" (15 characters, valid).

Options: Option 1: 9.8, Option 2: 10.

Marks: 0 (Invalid).

No. of Options: 1 (Invalid).

Difficulty Selection: Selected ("Medium").

Answer: Selected (Option 1).

Expected Output: Invalid.

Reason: No subject selected (E3), marks are less than 1 (E7), and options are less than 2 (E10).

Invalid Classes Covered: E3, E7, E10.