Input Validation:	Inpu	t	Va	lid	a	tio	0	:
-------------------	------	---	----	-----	---	-----	---	---

### Digits -> Unioner that the Armialist combo har island for Annotations for Validation no mother to reduce

- @ Not Noll -> Ensures that the annotated field is not noll.
- @ Not Empty -> Ensures that the annotated field is not noll and its Size/length is greater than zero (For Collections, it is volumn a carray spand strings).
- @NotBlank -> Ensurer that the annotated string is not null and is Trimmed length is greater than zero.
- @ Size > Validate sthat the annotated element's size falls within the Specified range.
- @ Max -> Ensures that the annotated element is a number with a 16 nd value no greater than the specified maximum.
- @ Email -> Validates that the Annotated slving is a Valid email address.
- @ Pattern -> Validates that the Annotated String matches the specified
- @ Positive > Ensures that the Annotated element is a Positive number (greater than Zero).
- @ Positive Orzero > Ensures that the Annotated element is a positive number (greater than zero) Or zero. 20 and of
- @ Negative -> Ensures that the Annotated element is a negative number,
- @ Negative Orzero → Ensures that the Annotated element is a negative (or) zero number. @ Past -> Ensures that the annotated date (ov) Calender value is in the Past.
- @ Past Or Present -> Ensures that the Annotated date (or) Calendar value is in the Past or Present.
- @ Future -> Ensures that the Annotated date (or) Calendar value is in the tolore.

@ Future OrPresent > Ensures that the Annotated date or Calendar value is in the totore (or) Present. @Digits -> Ensures that the Annotated number has up to a Specified number of integer and fraction digits. @ Decimalmin -> Ensures that the Annotated element is a number with a value no less than the specified minimum, allowing size (length is great ning points and collections) @ Decimal Max > Ensures that the Annotated element is a number with a value no greater than the specified maximum. allowing for decimal points bearing Assert True → Ensures that the Annotated boolean field his knock = seiz 
 Assert True → Ensures that the Annotated boolean field his knock = seiz 
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 Seizert True → Ensures that the Annotated boolean field his field his knock = seiz 
 Seizert True → Ensures that the Annotated boolean field his fie @ Assert False > Ensures that the Annotated boolean field is false. @ Valid → Validates the Associated object reconsively capplies bean Validation @ Email -> Validates that the Annotated objects balated at tout adapted address Handling Validation Exceptions in the test took a Validation of the Annolyse of the Manual Property of the Manual 1. Method Argument Not Valid Exception is Thrown by the @valid Validation. 2. You can get a list of all the ervors from the binding Result vote this 3. You can use this list to return some useful error messages by the Elegative - Losuves that the Annotated element is a necessional TAA I icquire Orzero -> brown that the Arnotaked element is a negative for less non pour box Flast -> Ensures that the appropried date (or) calender value is in the fact. Past Ci Basent - Ensures that the Annototed date (a) Calendar volumes in the Post or Present. whicher -> busines that the Annototed dots loss Calendar volue is in the

## Exception Handling in Spring Boot MVC

# Benefits of Exceptions Handling:-

- 1. Prevent application Crashes
- 2. Provide user-triendly error response.
- 3. Facilitate debugging and Maintenance.
- 4. Ensure consistent error handling Across the Application.

e Kisponse Body Adiver & Objech

## Handling txceptions:-

1. Use @ExceptionHandler to handle specific exceptions in Controller.

@Exception Handler (No Such Element Exception. class)

Public Response Entity & Strings handle Employee Not found (Nosoch Element Exception)

return new Response Entity => ("Employee not tound", HILDStatus. NOT\_FOOND);

- -> it will only handle the Exception in the Employee Controller.
- 2. Use @Rest-Controller Advice for global exception handling.
- 3 Return Appropriate HTTP status codes and Error messages.
- 4. Use Custom error response class to provide structed error details.

-it is not Mondalow, it helps the compiler cately 

Public Response Endity & Api Errors handle Resource Not Found (Resource Not Found Exception)

Api Error api Error = Api Error builders) status (HHPStatus. NOT-FOUND)

4

·message (exception.getMessage()) · build ();

return new Response FAHTY 2> (api Error, HHPStatus. INTERNAL\_SERVER\_ERROR);

-> This Exceptions handles by the Over All Application.

## Transforming API Response

- 1. Extend your class with @ResponseBodyAdivce 2 Object > to define the Custom return type.
- 2. Use @Rest Controller Adivce for global API Response transformation.
- 3. Return appropriate HTTP status codes and error messages.
- 4. You can also return the timestamp of the API response.

11/6/25

Java 8 Lambda And Stream API:

Lambda expression is a Short way to write a Method for an interface that has only one abstract method Called a functional interface

Functional Interface ( ) have followed apply alband special profile method of the

- 1. It is in Java is an interface that has only one abstract Method. 1012. It can have any number of default (or) static methods but only one abstract method.
- 3. Main Purpose of tunctional interfaces is to support lambda expressions.
- 4. Ex: Runnable interface, which has a single method tunc), is a functional interface leading you solve the solve of solve to the solve of the solve
- 5. @ Functional Interface Can be used to explicity declare an interface as a functional interface.
  - it is not Mandatory, it helps the Compiler Catch errors it the Interface does not conform to the voles of a functional interface

@ Functional Interface walkable obj= (steps, is Enabled) -> {

interface Walkable {

System.out.println("walking fast" + steps + "steps");

int walk (int steps, boolean is trabled);

veture 2\* steps;

walkable obj2= (steps, is Enabled) > 2\*skps;

a this Societion is souther by the Contact Application.

Stream:

1. it is a sequence of elements that supports various Operations to Process

data. 2. it's not a data structure but a way to process data from source like

Collections, arrays, or Volchannels for to the second epiloto

3 it work by Creating a pipeline of Operations.

4. You start with a source of data, then apply a series of insintermediate Operations (like filtering, mapping, or sorting) To transform the data, and

finally, a terminal Operation (like Collecting, Counting, or Printing) to

Produce a result.

The Main Purpose is to enable functional - style Operations on Collections. of the data copy of the shoot of anove Concise, readable and leasier) ?

6. They allow you to write Code that is more Concise, readable and leasier)

to Pavallelize.

J. They also Promote immutability, as they don't modify the Original data

Source. Source. Source anily to hosteric who MOSE another of old Telia in how to

List & String > truit = List of ("kiwi") "Banang" Apple"); Banang of the Language As Stream & String > Streams = Frois . stream (5) to oppose of the

# Streams. ForEach ((fruit) → { shout son of 2.190 squit - paige Missing & 3.0 pln (Froit) of Jes 1009 July Africa force of 100 & Stream . sorted(). map (Fruit > fruit length()) top of to U <- older without &

· for Each (froit > S.o. Pla (froit));

@ Reguest Bray. > if he bore duto as ascal, not tribut view मणी जिल्ला जेर कहें हैं हैं हैं हैं है के स्वार उपर

iscorpor all 19 1000 colors 1888 control of the respondenced of ofto response sucklasses sillosofs supposit & ralpositional landgessed in

- aldie A rollodan) 4 13300 ro milodan) w siel-ai 6 20 6 Si Rock Controller Advice -2 Used to boundle court floor globally. rathering our mistro all at

### Homework:

- I Make a list of all the annotations we have seen so far in the Spring Web Framework.
- ② Entity → Make a class as a database table > Used in JPA to tell Spring: "This class represents a table in DB".
- OService > Automatically makes it a Spring-managed bean.

  > Used to handle main logic (like calculations, DB calls).
- @ Repository > Used to talk to the database

  > Spring Automatically handles exceptions here.
- @Controller -> Used in MVC applications to handle HTTP requests and return views (HTML Pages).
  - of no > wed with Thymeleat IJSP. William war
- @ Rest Controller -> Shortcut for @ Controller + @ Response Body >Used in REST APIs to return ISON data instead of views.
- ○Automatically injects dependencies.
   → No need to manually Create objects using new.
- Request Mapping → Maps URLs to methods.
   → Can be used with GIET, POST, PUT, DELETE.
- @ Path Variable -> Used to get data from URL Path.
- @ Request Param -> Used to get data from URL query Parameters.
- Request Body → it return data as JSON, not HTML view.
   → no needed in @RestController
- @ Response Status -> Sets a Custom HTTP status Code for the response.
- Rest Controller Advice → Used to handle exceptions globally.
   → Like a global error handler.

2. Create the following REST endpoints for the Following Entity
Department  GET: Idepartments  POST: I departments
Eitle pot: /departments
- isActive - createdAt DELETE: Idepartments - createdAt DELETE: Idepartments
- CreatedAt DELETE: Idepartments/Lidy
1 11 11 1 16 1 16 1 16 1 16 1 Department Folitum
3. Write externors removed to get the second of the second
Annotations For Annotations For Annotations on the Department and Employee Entities.  4. Add the Appropriate Fields in the Department and Employee Entities.
5. Create Custom Annotation to handle a Prime number input
f. Create custom Annotation to Check it the Pamword String field.
One Upper Case, lower case, special Character.
b. minimum length is 10 characters.
Mistakes Made by My And Rectified by the AI: 10907 ) with a
1. Always Type the URL manually in Postman To Avoids hidden
The form the property Densille 1.04 Hours sering states
" " Line only because it's safer.
2. Never Press enter in the OKL bar to Hereins 3. Use Send button only because it's safer. 4. Don't paste URLs from PDFs on chats because They often include hidden
4. Don't paste ORL's from PDFS
newlines.  5. Must Water the Intellit Console Because it shows what spring Boot is doing.
in every these we went of old ond opage. So, may
work old come was we want to follow the fame flow from the
is sold find colory of grandold of about the post of burner house our end.
The state of the s
· land and confirm of the property of the state of the st
to a delight of the same of the first of the
de réduitini si lip produce rédus à 21 og 17 - c; 15

#### Gif:-

- -> Version Control System is a Tools that helps to track changes in code.
- -> Grit is a Version Control System

Tracks changes to files, like code, Overtime

- -> it is Popular, free, Open source, fast, 'Scalable-lound
  - 1. It helps to Track the history
  - 2. it helps to collaborate the Team.
  - **5**.

#### Gilthob:

-> it is a Website that allows developers to store and Manage their Code Using Guit.

ston Annelation to Check If the Romeral

1. Folder (Repo) TA sit pd bothitis bad yM pd sont entricat

Version Control:

- a biova of amondally in Postman To Avoids bidden Tit is a System that Tracks changes to tiles overtime, allowing developers to revert to previous versions, collaborate efficiently
- and manages different Code versions and place nother bases -> it Prevents data loss and ensures smooth teamwork in software

development. without git:
> For every Time we wan use old and update. So, that we alway. without git:

want old code for updation.

-> For Any Projects we want to follow the same flow.

with git:-

- we don't need to use old code to Make Any updates init because
  - it stored in a local.
- -> So, that we can updake Easy. Repo:- Repo is a folder where git is initialized.

Gilt?
Sit is a distributed version control system that Tracks changes in
> it is a distributed version control system man traces critiques in a life a distributed version control system man traces critiques in a life code, allowing multiple developers to collaborate efficiently bound distributed about the
Dea Cases of Gilt:
* Software Development doppeds do love to
* Software Development de l'actions lip / somma de anides troubende lip
* Tracking Versions
Some departed and define the remon departs of the
GilHub?  This a cloud-based plateform that hosts Git repositories, enabling  The is a cloud-based plateform that hosts Git repositories, enabling
> it is a cloud-based plateform that hosp Gif repositioner character actions the
developers to Collaborate, manage code and
git branch -d zbranch-name> -Deleter a local branch. (enty if folly branch to
Git V/s Github board lood a stable sound example. A files helps disposed lies. Git works locally to track the changes in folders and files. helps disposed lies.
Git works locally to track the changes in tolders and most cipies desperations
Organizing the code with the help of Branchers airing day lies.  Organizing the code with the help of Branchers airing day lies.  Gittub is A cloud Platetorm that hosts the local vepo online- so that
College of that hosk the local vepo online- so that
Gilthub is A cloud Materiorm mar mossing the Project and more die Anyone with the repolith can Access the Project and more die
contribute changes.
Meraling is nothing but just adding the code Present
011 100 1 said at 1 more 21 (1) (noted said at
1. git add - all ( git add) add the files to the staging area.
> This Command will all mossage
2. git Command will Commit the Changer locally.
- This Command with Ringel Name
3. git push remote Name Branch Name  3. git push remote Name Branch Name  This Command will Push the changes from local
-> This Command will be
vepo ro Branch Name. 14/6/25
9. git Pull remoteName BranchName and/100 Man of the sale and
D'aller of the show admin
Latest changes in the branch.

Gilt Branch Commands:
git branch > Lists all local branches in the Repository.
git branch - branch-name > > Creates a new branch with the Specified
9it checkout abranch-name>/ git switch abranch-name>  > Switches to the Specified branch.
git checkout -b & branch-name > / git switch = -c & branch-name >  -> Creates and switches to a new branch.  git merge & branch-name > > Merges the Specified branch into the correct branch should be a specified branch of 21990/1000 of 21990
git branch -d ≥ branch-name> -> Deleter a local branch (only if folly merged)
git branch - D & branch - name > > Force deletes a local branch
git push origindelete <branch-name> &gt; Deletes a remote branch.  git branch -m <old-name> <new-name> &gt; Renames a branch.</new-name></old-name></branch-name>
git branch Lish remote brancher and all shows a delice
Gilt Merge:-
Merging is nothing but just adding the code Present in One branch to another branch.
-> "Macter" branch will now have the code from Page 1 branch
and "Page 2" branch.  new Commit is created
Commit Repo  Commit  "B"  Commit  "B"  Commit  "B"  Commit  "B"
now, Commit "E" will Contain sould do not a send should like y
the Code of Commit "C"