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Pre-Defined Packages in Java

=> Packages :-

-> A package is the group of similar type of classes or interfaces or sub-packages

-> A package is a folder which contains classes or interfaces (.class) or sub-packages

-> Advantages of packages :-

1. Packages are used to categorize the classes or interfaces which makes them easy to maintain or access
2. Packages are used to achieve modularity in our project
3. Packages are used to achieve abstraction in java
4. Packages are used to achieve security in java
5. Packages can be used to remove nameing collision

6. Packages improve shareability because we can use same package with different java applications

7. Packages are used to achieve reusability

-> Types of packages :-

1. Predefined Package (Built-in Package)
2. User Defined Package

-> How to import the packages :-

1. `import packagename.subpackage.*;`
 2. `import packagename.subpackage.ClassName/InterfaceName;`
 3. Fully Qualified `ClassName/InterfaceName`
-

=> Predefined Package (Built-in Package) :-

-> The packages which are already provided by java are known as predefined packages

-> Important types of packages in core java :-

1. java.lang
2. java.util
3. java.io
4. java.awt
5. javax.swing
6. java.sql
7. java.applet
8. java.net
9. java.rmi

=> java.lang :-

-> java.lang package contains the basic classes used in java programs

-> Classes/Interfaces/subpackages are :-

- = Object, Class, reflect (sub-package - Method, Constructor etc) etc

- = System

- = Boolean, Character, Byte, Short, Integer, Long, Float, Double

- = Exception, NullPointerException, ArithmeticException, ArrayIndexOutOfBoundsException etc.

- = String, StringBuffer, StringBuilder

- = Thread, Runnable

- = more classes and interfaces like Comparable, Cloneable...

-> How to import this package :-

```
import java.lang.*;
```


-> java.lang package is the only package which is by default imported to every java class file

=> java.util :-

-> java.util package contains the utility classes and data-structure related classes

-> Classes/Interfaces/subpackages are :-

= Scanner, Calendar, Date, Locale etc

= Collection, List, Set, Queue, ArrayList, LinkedList, Vector, TreeSet etc

= regex (subpackage) Pattern, Matcher etc

-> How to import this package :-

import java.util.*;

=> java.io :-

-> java.io package contains the input and output operations related classes or interfaces

-> Classes/Interfaces/subpackages :-

= InputStream, OutputStream, FileInputStream, FileOutputStream etc

= Reader, Writer etc

-> How to import this package :-

```
import java.io.*;
```

=> java.awt :-

-> java.awt package contains GUI based classes and interfaces

-> Classes/Interfaces/subpackages :-

= Window, Frame, Label, Button, TextField, CheckBox, etc

-> How to import this package :-

```
import java.awt.*;
```

=> javax.swing :-

-> javax.swing contains GUI based classes and interfaces

-> Classes/Interfaces/subpackages :-

= JWindow, JFrame, JTextfield, JButton etc

-> How to import this package :-

```
import javax.swing.*;
```

=> java.sql :-

-> java.sql package contains database related classes or interfaces

-> Classes/Interfaces/subpackages :-

= Driver, DriverManager, Statement, PreparedStatement, ResultSet, CallableStatement, ResultSetMetaData etc

-> How to import this package :-

```
import java.sql.*;
```

=> java.applet :-

-> java.applet package provides GUI based classes and interfaces

-> Classes/Interfaces/subpackages :-

= Frame, Button, Graphics, Textfield etc

-> How to import this package :-

```
import java.applet.*;
```

=> java.net :-

-> java.net package contains the classes and interface which are used to create Distributed Applications.

-> Main task we achieve from this package is Socket Programming

-> Classes/Interfaces/subpackages :-
= Socket, ServerSocket, URLConnection, URL, InetAddress etc

-> How to import this package :-

```
import java.net.*;
```

=> java.rmi :-

- > RMI : Remote Method Invocation
- > java.rmi package contains classes or interfaces which are used to prepare Distributed Applications on the basis of RMI
- > Classes/Interfaces/subpackages :-
 - = Remote, RemoteException, Naming, UnicastRemoteObject etc
- > How to import this package :-

```
import java.rmi.*;
```

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