

T&T LABORATORY MANUAL

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Assignment-1

Runtime Polymorphism

Prelude

Runtime polymorphism is achieved by two techniques in java and they are Dynamic method dispatch and Dynamic method look up.

Dynamic method dispatch	Dynamic method Look up.
<ol style="list-style-type: none">1. Super class reference variable is used and that takes different sub class objects at different time.2. A call to method is resolved at run time depending upon what type object is assigned to super class reference variable.	<ol style="list-style-type: none">1. Interface reference variable is used and that takes different objects at different time.2. A call to method is resolved at run time depending upon what type object is assigned to interface reference variable.

Assignment-1

Program No	Program
1	Implement a Figure class having data members dim1 and dim2 and also a method find_area(). Two other classes Triangle and Rectangle are derived from Figure. Implement an application class where the area of Triangle and Rectangle object is calculated using Dynamic method dispatch technique
2	Implement an interface Area which consists of a method find_area(). Two classes Triangle and Rectangle implements the interface Area. Include two data members dim1 and dim2 for each class and appropriate constructors. Implement an

	application class where the area of Triangle and Rectangle object is calculated using Dynamic method Look up technique
3	Implement a Figure class Bank having data members balance and interest_rate and also a method find_Simple_Interest(int Years). Two other classes Bank1 and Bank2 are derived from Bank. Each bank has its own interest rate(10% for Bank1 and 15% for Bank2) Implement an application class where the simple interest of each bank is calculated for a particular balance amount using Dyamic method dispatch technique
4	Design an interface Loan having a method float find_Simple_Interrest(int year). Two banks Bank1 and Bank2 implements PersonalLoan to offer loan to their customers and each bank has its own interest rate(10% for Bank1 and 15% for Bank2). Each bank class has it's own static variable named as interest_rate. Write down the necessary java code to exhibit run time polymorphism
5

Assignment-2

Event Handling

Prelude

Event handling is the core of any window based programming. In java , it is based on Delegation Event Model. This model consists of three types of objects or components. They are as follows:

Source : It generates an event and sends it one or more listener for processing. A source must register a listener to receive the event by using the method `public void addTypeListener(TypeListener x)`.

Event : A state change in a source is called is an event.

Listener : A listener must implement methods to process the event.

Event Handling is implemented in 4 ways and they are as follows

1. Using single class
2. Using Adapter class
3. Using Inner class
4. Using Anonymous Inner class

Assignment-2

Program No	Program
1	Implement an applet which handles all types of mouse event (mouse clicked, mouse entered, mouse exited, mouse pressed and mouse realeased) . For example, when the mouse pointer is entered in the applet window, the message “ MOUSE ENTERED” will be displayed in the status bar. Similarly for other mouse events , appropriate message has to be displayed. The same program has to be implemented by all the four ways.
2

Assignment-3

First Android App

Prelude

Steps for First Android Application(Window platform)

1) Step-1:

[Creating First Android Application]

- a) Open Android Studio.
- b) Create a new project
Click on File→New→New Project
- c) Give a name to your Android Application and click next
- d) Select the version of Android for which you are going to create Application and click next.
- e) Select Empty Activity and click next.
- f) Give a name to the first Activity and click Finish.

2) Step-2:

[Start Emulator/AVD(Android Virtual Device) Manager]

- a) Click on ADV Manage icon on Tool Bar.
- b) Select a virtual device and click on start button.
You can create new virtual device by clicking on **Create Virtual device** button.

3) Step-3:

[Run Your First Application]

- a) Click on Run App Button on Tool Bar.
or
Right click on the java code then choose Run Activity.
- b) Then select the virtual device and click ok.

First Android Application(Unix platform)

1. Step-1:

[Update the Linux OS]

Open terminal (Press Alt + Ctrl + T).

Use the Following Command to Update the Linux OS.

\$ sudo apt-get update.

Close the terminal.

2. Step-2:

[Creating First Android Application]

3. Open Android Studio.

4. Create a new project

Click on File→New→New Project

5. Give a name to your Android Application and click next

6. Select the version of Android for which you are going to create Application and click next.

7. Select Empty Activity and click next.

8. Give a name to the first Activity and click Finish.

9. Step-3:

[Start Emulator/AVD(Android Virtual Device) Manager]

10. Click on ADV Manage icon on Tool Bar.

11. Select a virtual device and click on start button.

You can create new virtual device by clicking on **Create Virtual device** button.

12. Step-4:

[Run Your First Application]

13. Click on Run App Button on Tool Bar.

or

Right click on the java code then choose Run Activity.

14. Then select the virtual device and click ok.

Assignment-3

Program No	Program
1	Develop an Android application to display a message as “Welcome to Android Program” using the layout file(main_activity.xml).
2	Develop an Android application to display the student information as Roll No, name, branch using the layout file(main_activity.xml).

Assignment-4

Text & View

Prelude

Assignment-4

Program No	Program
1	Develop an Android application to add one TextView as “Name”, one EditText where we can enter the name and one Button named as “Click to Show” in layout. Here the name can be displayed by using Toast method. Also set the Font color, Font size, style etc.
2	Develop an Android application to add two TextView components as “First Number” and “ Second Number”, two EditText components for entering that two numbers and one Button as “Add” to display the addition of two numbers. (using Toast method)

Assignment-5

Layout Views with components

Prelude

Assignment-5

Program No	Program
1	<p>Develop an Android application to add three TextView components as “First Number” , “ Second Number”, and “Sum”, three EditText components for entering two numbers and third one for showing the sum result, and one Button as “Add” to display the addition of two numbers in Sum text box using</p> <ul style="list-style-type: none">a) Linear Layoutb) Relative Layout
2	<p>Develop an Android application to implement a Registration page like Google Account having First Name, Last Name, User Name, Password, Confirm Password and Register button using Relative Layout.</p>

Assignment-6

Life cycle methods of Activity

Assignment-6

Program No	Program
1	Design a digital calculator using various android widgets
2	Design an android app to display the life cycle methods of Activity.

Assignment-7

Android camera and phone call

Assignment-7

Program No	Program
1	Design an android app to capture the photo using android camera
2	Design an android app where the mobile no of the receiver will be provided that automatically switches the application to contact list and displays the calling window.

Assignment-8

Intent

Assignment-8

Program No	Program
1	Design an android app where a sign in form is displayed using intent. If the user provides correct login and password, it displays WELCOME otherwise it displays ERROR.
2	Design an android app where the explicit intent is used.

Assignment-9

ListView & Dialog Box

Assignment-9

Program No	Program
1	Design an android app to display items using ListView.
2	Design an android app to display an alert dialog box containing the message.

Assignment-10

Use of Context Menu

Assignment-10

Program No	Program
1	Design an android app using context menu and the menu items are adding and removing images.
2	Design an android app using context menu with operation cut, copy, paste and clear.