#### Madan Bhandari Memorial College

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#### **Practical Sheet**

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Title: <u>Tava FX</u> demonstration.

### Introduction:

## Java FX - Application Structure

· Stage: A stage contains all the objects of a Javafx application. It is represented by Stage class of the package javafx. stage

· Scene: A scene represents the physical contents of a Java FX application. It contains all the contents of a scene graph.

The class Scene of the package javata scene represents the scene object.

Scene Grouph and Nodes: A scene graph is a tree-like data structure representing the content of a scene.

The Node class of the Tavafx scene repre-

super class of the baratx score apact super class of all the nodes.

### Types of nodes:

i) Root Node: The Arst scene is known as Root Node.

ii) Branch Node/Parent Node: The node with child node are known as branch/parent nodes.

(11) Leaf Node: The Node without child nodes is known as leafnode

Root Node
Branch
Node Leaf Node

Leaf Node Leaf Node

Fig. Types of Nodes.

#### between Javafx and Java Swing. Comparision

- ·Java Fx
- → Modern Approach: Integrated with Tava, supports FXML for UTdesign.

  → Graphics and Animation: Uses horsolwase-accelerated graphics.
- -> Scene Graph: Node -based structure.
- -> Media Support: Built-in support for audio levideo.
- · Java Swing
- -> legacy Technology: Mature GUI toolkit.
  -> Lighweight Components.
- -> Event Hardling.
- -slayout Manager.

# Java FX Layouts:

- i) VBox -> Vertical Arrangements
- ii) HBOx -> Horizontal Arrangements
- iii) Border Pane -> Top, bottom, left, right and center regions
- iv) and Pane -> and-based dayout
- v) Flow Pane > Flowing Arrangements.

```
Gode:
Contraller java;
 package hollofn;
          )avafx.fxml, FXML;
 trogmi
 import javafx scene contral label;
  public dass Controller &
          @ FXML
            private label latel;
            public void initialize C)S
                   String java Vession = System. get Proposty ("java. Vession");
String java fx Vession : System get Proposty ("java fx vession")
                    label set Text ("Hello, Java FX"+ javo fx vossion+" InRuming
                                         on Java "tjava Vossbn+".");
              Z
Hellofx.fxml:
       <?xml vestsion ="1.0"encoding =" UTF-8"?>
       2? simpost javafx. scene-control·label?>
       2? import javofx. siene. layout. Stade Pane?>
       2Stackfune max Height = "-Infinity" mex Width = "-Infinity" minteight = "
-Infinity" min Width = "- Infinity" pref Height = "400.0" pref Width = "600.0"
         xmlns = " http:// jourfx.com/gavafx/8 mmlns:fx = "http://jourfx.com/fml
           1' fx: controller = "hello fx Controller">
            < childrens
                zlatel fx:id="Jebel" text="label"/>
             z/childson>
            2/StackPare>
```

Mainjara puckage hellofx; impost javafo-application. Application; import javafx fxml. Fxmlloader; import javato. siene. Parent; impust javofx. scene. Scene; import javafx. stuge. Stuge;
public class Main externs Applications @Overnide public void stoot (Stage primary Struje) throws Exceptins Papert root = Fxmload ex. load (get class) getresonne ( "hellofxfxml")); primary Stage. set Title ("Uka 1"); primary stuge set scene (new scene (root, 400,300)); primary Stage. show(); 29 public static void moun (Strong[] curges) lunch(asys); z

Utsav

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Hello, JavaFX 8.0.391 Running on Java 1.8.0\_391.

```
Flow Layout
Code:
package hollofr;
 import javafx. application. Application;
 import jovafx scene control Button;
 impost javafx. scene layout Flowlane;
  import jovofx. geometry. Irsets;
  import javafx. callective. Observable list,
  import javafa. stage. Stage;
  impost javatx. scene. Stene
  public down Main extends Application &
        @Overside
         public void start (Stage stage) {
         Button button 1 = new Button ("Button 1");
         Button button 2 = new Button ("Button 2");
Button button 3 = new Button ("Button 3");
          Butter butter 4 - new Butter ("Butter 4");
          FlowPare flow Pane = new Flow Panel);
          Eluwlane. set Hgap (26);
          filowlane. set Margin Chulton 1, new Insets (20,0, 20, 20));
          Observable List Wist = Flow Pane get Children ();
          dist-add All (Gutten 1, Gutten 2, button 3, butter 4);
          Scene scene = new scene (Llowfare);
          stage - setTitle ("Utsav");
          Stuge. selsione (spene);
           Stage. show ();
     public static void moun (String[] args) (
          Lunch Carys);
    29
3
```

Button1 Button2 Button3 Button4

Hbox Layout Code: puckage hellofy; import jours scene. Scene, import javafx. scene. control Butten; import jasafx. scene. control layout. HBOX; import javafx. siene. Layout. Vax; import jovofx. stage. Stage; public deux Mein exteres Application ? @Overnide public void start (Stage primerry Stage) throws Exceptor & Button (try = new Button ("Usovi) Button 0 to 2 = new Button ("Acharya Shanna"); HBOX nout = new HBOX(); Scene scene = new Sone (suut, 200, 200); soot. get Guld senc) - add All (1 tn 1, 6 tn 2) primary Stage. setScene (scene); primary Stuge · show (); public stutic void main (String [) asys) & Jaurch Casgoli 3 3

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Utsav	Acharya Sharma		

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```
Graid Layout
Code:
package hellofx;
import javafr. application. Application;
importionals. Scene Scene;
impust javafr. scene . control. Button;
imputajovata. scene. central·label;
impulsajavata. scene. contrul. Tenthield;
imputxjurafx.stage.Stage;
public class Main extords Application &
    @ Overside
       pullic void start (Stayle primary Stayle) throws Exceptions
           Label first-name = new Label ("First Name");
           Label last-name = new Label ("last Name");
           Textfield If 1=new Textfield();
           Textfield tf2=new Textfield();
            Button Submit = now Button ('Submit');
            Gridfane sout = new Graidfane();
            Scene scene = new and Scene (sout, 400, 200);
             root. and Row Co, first-name, +F1);
             root-ad) Row (1, lost-neure, tf2)
             rout-add Row (2 Submit)
             primary stage. set Scene (scene)
              pomony stage stow();
```

Public static void ment (8torg[] args) {

leunch Cargs);

,

B 1			
		_	×
First Name	Utsav		
Last Name	Acharya Sharma		
Submit			

```
Code:
package - hellofx;
impost gavafx. application. Application;
importjavofx scene Scene
import javofx. scene . Control Duttor;
import jarofx. scene. Layout. BordorPare;
import javafx. scene. Leyout. HBOX; import javafx. scene. Leyout. VBOX;
imput javafx. stage. Stage;
public class Main exteres Application ?
    @ Overside
     public void statt (Stage primary Stage) &
        Bostor Pure bostorPone = new BosterPare();
         HBUX topMonu = new HBOX();
         topmonu get Children () add All (create Button ("File"), ande
             Bullon (" Edit"), cocateButton ("View"));
         bisderPore. set Top Chip Menu);
          VBox Jeft Menu = new VBox();
          left Menu. get ahildsen () and All Coscale Button ("O"), coeate
            Button ("E"), oscale Button ("F");
           burder Pane. setLeft(Jeft Mena);
           Scene scene = new Scene (boder Pune, 300,700);
           primary Stuge. set Title ("Utsur");
           primary Stuge. set Scene (scene);
           poinory Stuge. Show ()
      provate Button coealeButton (Strolg lext)
              return new Button (text)
      public static void movin (Storing [] asgr) ?
               Jourch ( aggs)
```

