DOUBLE_D

PROGRAMMING HANDBOOK

Java code

```
class class_name
{
  public static void main(String[] args)
    { //code goes here }
}
```

Naming conventions

```
Class --> Pascal casing
Method/function --> Pascal casing
Variable & arguments --> Camel casing
Package --> Lower casing
Constant --> Upper casing
Namespace --> Pascal casing
Interfaces --> I prefix
```

Output

```
class tt
{
          public static void main(String[] args)
          {
              String a = "Hello world";
              System.out.println(a);
          }
}
```

Input

```
import java.util.Scanner;
class tt
{
          public static void main(String[] args)
          {
              Scanner sc = new Scanner(System.in);
              String input = sc.nextLine();
              System.out.println(input);
          }
}
```

Comments

```
//Single line comment
/*Multi line comment*/
```

Variable

```
int a = 15;
double b = 15.0;
char c = 'D';
bool d = true;
string e = "Hi";
```

Variable scope

Global variable

```
import java.util.Scanner;
public class tt
{
          String a = "Hello world";
          public static void main(String[] args)
          {
             tt obj = new tt();
             System.out.println(obj.a);
          }
}
```

Global variable

```
import java.util.Segment;
public class tt
{
          String a = "Hello world";
          public static void myfun()
          {
             tt obj = new tt();
             System.out.println(obj.a);
          }
          public static void main(String[] args)
          {
             myfun();
          }
}
```

Local variable

```
import java.util.Scanner;
class tt
{
          public static void myfun()
          {
             String a = "Hello world";
             System.out.println(a);
          }

          public static void main(String[] args)
          {
             myfun();
          }
}
```

Constant

```
final variable_type constant_name = constant_value
final float pi =3.14;
```

Data types (primitive)

```
INTEGER: byte(8bit), short(16bit), int(32bit), long(64bit)
DECIMAL: float(32bit), double(64bit) OTHER: boolean(1bit),
char(unicode)
```

Primitive Operators

```
Assignment operator: "="
Binary operator: "+ - * / %"
Unary operator: "+ - ++ --"
Boolean not operator: "!"
Boolean binary: "== != > >= < <="
Boolean binary only: && ||
Bitwise operator:~ & ^ | << >> >>>
Ternary operators: bool true false
```

None-Primitive type

```
String, Array, Class, Interface
```

Widening(implicit) casting

Smaller to larger type

```
int myint = 9;
double mydouble = myint;
System.out.println(mydouble); //9.0
System.out.println(myint); //9
```

Narrowing(explicit) casting

Larger to smaller

```
double mydouble = 9.7;
int myint = (int) mydouble;
System.out.println(mydouble); //9.7
System.out.println(myint); //9
```

Conversions

```
int x = Integer.parseInt("999");
float y = Float.parseFloat("9.9");
String abc = Integer.toString(12);
String xyz = Float.toString(0.54);
```

import java.util.Scanner;

```
Scanner s =new Scanner(System.in);
String username = s.nextLine();
System.out.println(username);

nextBoolean(), nextByte(), nextDouble(), nextFloat(),
nextInt(), nextLong(), nextShort()
```

if, else if, else statement

```
if(condition){statements}
else if(condition){statement}
else{statement}
```

For loop

```
for(int i=0; i<10; i++)
{
    System.out.println(i)
}
```


DILANGA D AMARASINGHE
PROGRAMMER
COMPUTER SCIENCE
EASTERN UNIVERSITY - SRI LANKA

E-Mail : doubledamarasinghe@gmail.com
GITHUB : https://github.com/DoubleDAmarasinghe
WhatsApp : +960 96 95 658
LinkedIn : @ Dilanga D Amarasinghe

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While loop

```
int i=0;
while(i<10)
{
    System.out.println(i);
    i++;
}
```

Do while loop

```
int i=0;
do
{
    System.out.println(i);
    I++;
}
while(i<10);
```

Switch statement

```
int x = 3;
switch (x)
{
    case 1:
     System.out.println(“A”);
     breake;

    case 2:
     System.out.println(“B”);
     breake;

    case 3:
     System.out.println(“C”);
     breake;

    default:
     System.out.println(“D”)
}
```

Try catch

```
public class MyClass {
  public static void main(String[ ] args) {
    try {
      int[] myNumbers = {1, 2, 3};
      System.out.println(myNumbers[10]);
    } catch (Exception e) {
      System.out.println("Something went wrong.");
    }
  }
}
```

Arrays

```
int [] x = new int [10]; //ten 0s
int [][] x = new int [5][5];
//5 by 5 matrix
int [] x = {1,2,3,4,5};
x.length; // 5
int [][] x = {1,2},{3,4,5,};
//ragged array
String [] y = new String [10]; //ten nulls
```

Keywords

abstract	continue	for	new	switch
assert***	default	goto*	package	synchronized
boolean	do	if	private	this
break	double	implements		protected
byte	else	import	public	throws
case	enum****	instanceof		return
catch	extends	int	short	try
char	final	interface	static	void
class	finally	long	strictfp**	volatile
const*	float	native	super	while
throw	transient			

* not used
** added in 1.2
*** added in 1.4
**** added in 5.0

Functions/Methods

Static declarations

```
public static int myFun(){smt}
private static double myFun(){smt}
static void myFun(){smt}
```

Instance declarations

```
public void myFun(){smt}
private int myFun(){smt}
```

Call a Function/Method

```
public static void main(String[] args)
{
    myFun();
}
```

Class

```
Class Myclass;
```

Object

```
public class Myclass
{
    Int x = 5;

    Public static void main(String[] args)
   {
     Myclass myobj = new Myclass()
     System.out.println(myobj.x);
   }
}
```

Interface

```
interface My_Interface
{
  void my_fun();
}
class My_Class
{
  public void my_fun()
   {
         System.out.println("Hello World");
   }
  public static void main(String[] args)
   {
         My_Class obj = new My_Class();
         obj.my_fun();
   }
}
```

Inheritance

Single-level inheritance

```
class My_class1
{
    public void my_fun1()
    {
         System.out.println("Hello world");
    }
}
class My_class2 extends My_class1
{
    public void my_fun2()
    {
         System.out.println("Again Hello world");
    }
    public static void main(String[] args)
    {
         My_class2 obj = new My_class2();
         obj.my_fun1();
         obj.my_fun2();
    }
}
```


DILANGA D AMARASINGHE
PROGRAMMER
COMPUTER SCIENCE
EASTERN UNIVERSITY - SRI LANKA

E-Mail : doubledamarasinghe@gmail.com
GITHUB : https://github.com/DoubleDAmarasinghe
WhatsApp : +960 96 95 658
LinkedIn : @ Dilanga D Amarasinghe

Multi-level inheritance

```
class My_class1
{
    public void my_fun1()
    {
         System.out.println("Hello world");
    }
}
class My_class2 extends My_class1
{
    public void my_fun2()
    {
         System.out.println("Again Hello world");
    }
}
class My_class3 extends My_class2
{
    public void my_fun3()
    {
         System.out.println("Again Again Hello world");
    }
    public static void main(String[] args)
    {
         My_class3 obj = new My_class3();
         obj.my_fun1();
         obj.my_fun2();
         obj.my_fun3();
    }
}
```

Multiple inheritance

```
interface My_class1
{
    void my_fun1();
}
interface My_class2
{
    void my_fun2();
}
class My_class3 implements My_class2, My_class1
{
    public void my_fun1()
    {
         System.out.println("Hello world");
    }
    public void my_fun2()
    {
         System.out.println("Again Hello world");
    }
    public void my_fun3()
    {
         System.out.println("Again Again Hello world");
    }
    public static void main(String[] args)
    {
         My_class3 obj = new My_class3();
         obj.my_fun1();
         obj.my_fun2();
         obj.my_fun3();
    }
}
```

Hierarchical inheritance

```
class My_Class1
{
    void my_fun1()
    {
         System.out.println("Hello world1");
    }
}
class My_Class2 extends My_Class1
{
    void my_fun2()
    {
         System.out.println("Hello world2");
    }
}
class My_Class3 extends My_Class1
{
    void my_fun3()
    {
         System.out.println("Hello world3");
    }
}
class My_Class4 extends My_Class1
{
    void my_fun4()
    {
         System.out.println("Hello world4");
    }
    public static void main(String[] args)
    {
         My_Class1 obj1 = new My_Class1();
         My_Class2 obj2 = new My_Class2();
         My_Class3 obj3 = new My_Class3();
         My_Class4 obj4 = new My_Class4();
         obj1.my_fun1();
         obj2.my_fun2();
         obj3.my_fun3();
         obj4.my_fun4();
    }
}
```

DILANGA D AMARASINGHE
PROGRAMMER
COMPUTER SCIENCE
EASTERN UNIVERSITY - SRI LANKA

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Hybrid inheritance

```
class My_Class1
{
    public void my_fun1()
    {
         System.out.println("Hello world1");
    }
}
interface My_Interface1
{
    public void my_fun2();
}
interface My_Interface2
{
    public void my_fun3();
}
class My_Class2 extends My_Class1 implements My_Interface1,
My_Interface2
{
    public void my_fun2()
    {
         System.out.println("Hell world2");
    }
    public void my_fun3()
    {
         System.out.println("Hello world3");
    }
    public void my_fun4()
    {
         System.out.println("Hello world4");
    }
    public static void main(String[] args)
    {
         My_Class2 obj = new My_Class2();
         obj.my_fun1();
         obj.my_fun2();
         obj.my_fun3();
         obj.my_fun4();
    }
}
```

Imports in GUI

```
java.awt.Color;
java.awt.Font;
java.awt.event.ActionEvent;
java.awt.event.ActionListener;
java.awt.event.KeyEvent;
java.awt.event.KeyListener;
java.sql.*;
java.util.Random;
javax.swing.BorderFactory;
javax.swing.border.Border;
javax.swing.*;
javax.swing.table.DefaultTableModel;
```

Java inheritance

```
public class Window extends JFrame{}
```

Creating objects

```
JFrame f1 = new JFrame();
JPanel p1 = new JPanel();
JButton b1 = new JButton(“Exit”);
JLabel l1 = new JLabel(“Name”);
JTextArea t1 = new JTextArea();
JTextField tf1 = new JTextField();
JRadioButton r1 = new JRadioButton(“Male”);
JComboBox c1 = new ComboBox(“Maried”);

Random rand = new Random();

DefaultTableModel model = new DefaultTableModel();
JTable jt = new JTable(model);

Font f1= new Font("Arial", Font.BOLD, 36);

Border b1 = BorderFactory.createLineBorder(Color.black, 2);

Color clr = new Color(0,255,0);

JMenuBar jmb = new JMenuBar();
JMenu jm = new JMenu("File");
JMenuItem jmi1 = new JMenuItem("Exit");

JOptionPane jp = new JOptionPane();
```

Constructor

```
public ItemSeller(){}
```

Frame attributes (Methods)

```
frame1.setSize(1360,720);
frame1.setTitle("Item_Seller");
frame1.setLayout(null);
frame1.setLocationRelativeTo(null);
frame1.setVisible(true);
frame1.setDefaultCloseOperation(EXIT_ON_CLOSE);
frame1.setResizable(false);
```

Panel attributes (Methods)

```
mainpanel.setSize(1360,720);
mainpanel.setLayout(null);
mainpanel.setVisible(true);
mainpanel.setBackground(new Color(25,130,146));
```

Label attributes (Methods)

```
ammount.setLocation(365,425);
ammount.setSize(600,100);
ammount.setFont(amunt);
ammount.setForeground(Color.white);
```

Text area attributes (Methods)

```
jtxitem.setSize(200,30);
jtxitem.setLocation(120,135);
jtxitem.setBorder(brd);
jtxitem.setFont(itempanelfont);
```

Set JTable null

```
model.setRowCount(0);
```

Table attributes (Methods)

```
jt.setLocation(370,110);
jt.setSize(720,300);
jt.setBorder(brdjt);
jt.setModel(model);
jt.setFont(itempanelfont);
```

Model attributes (Methods)

```
model.addColumn("A");
model.addColumn("B");
model.addColumn("C");
model.addColumn("D");
```


DILANGA D AMARASINGHE
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COMPUTER SCIENCE
EASTERN UNIVERSITY - SRI LANKA

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Button attributes (Methods)

```
delete.setSize(200,30);
delete.setLocation(25,135);
delete.setBorder(brd);
delete.setFont(itempanelfont);
delete.addActionListener(new ActionListener()
    {
       public void actionPerformed(ActionEvent arg0)
        { jtx.setText(null);
          jtxitem.requestFocus();
        }
    });
```

Set shortcut key for button

```
reset.setMnemonic('z');
```

Text field attributes (Methods)

```
jtxitem.setSize(200,30);
jtxitem.setLocation(120,135);
jtxitem.setBorder(brd);
jtxitem.setFont(itempanelfont);
jtxitem.addKeyListener(new KeyListener()
{
    @Override
    public void keyPressed(KeyEvent evt)
      {
          int a = evt.getKeyCode();
          if (a==10) //enter key
           {
            jtxqty.requestFocus();
           }
          int b = evt.getKeyCode();
          if (b==KeyEvent.VK_SPACE) //space key
           {
            jtxpay.requestFocus();
           }
      }
    @Override
    public void keyReleased(KeyEvent arg0) {}

    @Override
    public void keyTyped(KeyEvent arg0) {}
});
```

Import data from sql database

```
jtxitem.addActionListener(new ActionListener()
{
    public void actionPerformed(ActionEvent e)
      {
        try
         {
          Class.forName("com.mysql.jdbc.Driver");
          Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost/doubled",
"rona","rona");
          Statement s=conn.createStatement();
          String sql = "select*from user where
code="+jtxitem.getText()+"";
           PreparedStatement ps = conn.prepareStatement(sql);
           ResultSet rs = ps.executeQuery();
           while(rs.next())
                {
//shows item name in item namelabel
itemname.setText(rs.getString(1));
                   //shows item price in itemprice label
itemprice.setText("Rs."+rs.getString(5));
                }
       }
         catch(Exception e1)
           {
            System.out.println(e1.getMessage());
           }
       }
 } );
```

Exit button

```
jmi1.addActionListener(new ActionListener()
{
  public void actionPerformed(ActionEvent arg0)
     {
         System.exit(0);
     }
});
```

Export data to sql database

```
jbtadd.addActionListener(new ActionListener()
{
  public void actionPerformed(ActionEvent e)
   {
     try
       {
          Class.forName("com.mysql.jdbc.Driver");
          Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost/","rona",
"rona");
          Statement s=conn.createStatement();
          s.execute("create database doubled;");
          s.execute("use doubled;");
          s.execute("create table user(name varchar(25), code
varchar(10), q varchar(100), cost decimal(10), price decimal(10),
edate varchar(100), pdate varchar(100), sup varchar(100), re
varchar(100));");
          PreparedStatement ps = conn.prepareStatement("insert into
user(name,code,q
,cost,price,edate,pdate,sup,re)values(?,?,?,?,?,?,?,?,?,?);");
          ps.setString(1,jtx1.getText());
          ps.setString(2,jtx2.getText());
          ps.setString(3,jtx3.getText());
          ps.setString(4,jtx4.getText());
          ps.setString(5,jtx5.getText());
          ps.setString(6,jtx6.getText());
          ps.setString(7,jtx7.getText());
          ps.setString(8,jtx8.getText());
          ps.setString(9,jtx9.getText());
          int x = ps.executeUpdate();
          if(x>0)
            {
              System.out.println("Work Work");
            }
           else
            {
              System.out.println("Nooo");
            }
          }
        catch(Exception e1)
          {
              System.out.println(e1.getMessage());
          }
} );
```

Add components

```
itempanel.add(itemprice);
mainpanel.add(jt);
itempanel2.add(reset);
logopanel.add(companyname);
frame1.add(mainpanel);
frame1.setJMenuBar(jmb);
jmb.add(jm);
jm.add(jmi1);
```

Main method and creating object

```
public static void main(String[]args)
  {
    ItemSeller obj = new ItemSeller();
  }
```

Optionpane massage

```
jp.showMessageDialog(frame1,"Item
Sold!","Alert",JOptionPane.INFORMATION_MESSAGE);
```


DILANGA D AMARASINGHE
PROGRAMMER
COMPUTER SCIENCE
EASTERN UNIVERSITY - SRI LANKA

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GITHUB : https://github.com/DoubleDAmarasinghe
WhatsApp : +960 96 95 658
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Random number

Variables

```
private int low = 100;
private int high = 199;
private int result;
```

Method

```
result = rand.nextInt(high - low) + low;
jlb2.setText(Integer.toString(result));
```

Add sql data into JTable

```
jtxqty.addActionListener(new ActionListener() {
  public void actionPerformed(ActionEvent e)
    {try
      {
        Class.forName("com.mysql.jdbc.Driver");
        Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost/doubled",
"rona",
"rona");
        Statement s=conn.createStatement();
        String sql = "select*from user where
code="+jtxitem.getText()+"";
        PreparedStatement ps = conn.prepareStatement(sql);
        ResultSet rs = ps.executeQuery();
while(rs.next())
{
         //get data from database
         String a = rs.getString(1);
         String b = rs.getString(2);
         Float itemprice1 = Float.parseFloat(rs.getString(5));
         //get contains of jtxqty and convert into float
         Float itemqtys = Float.parseFloat(jtxqty.getText());
         String c = Float.toString(itemprice1*itemqtys);
         String d = jtxqty.getText();
         //adding data row from database to jtable
         model.addRow(new Object[] {b,a,c,d});
}}    catch(Exception e1)
{       System.out.println(e1.getMessage());
}} });
```

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