Topic 1

```
class A {
    int x;

    public A() {
        x = 0;
    }

    public A(int x) {
        this.x = x;
    }

    public int getX() {
        return (x + 10);
    }
}

class B extends A {
    int x = 20;

    public B() {
        super(100);
    }

    public int Ax() {
        return super.x;
    }

    public int getXA() {
        return super.getX();
    }

    public int getX() {
        return (x + 10);
    }
}

public class solve {
    public static void main(String[] args) {
        B test = new B();
        System.out.println("the x of class A is ; " + test.Ax());
        System.out.println("The getx of A is : " + test.getXA());
        System.out.println("The x of class B : " + test.x);
        System.out.println("The getx of classs B : " + test.getX());
    }
}
```

Topic 2

```java
interface AI {
    public void printA();
}

interface BI {
    public void printB();
}

interface CI {
    public void printC();
}

class A implements AI {
    public void printA() {
        System.out.println("Print of class A");
    }
}

class B extends A implements BI {
    public void printB() {
        System.out.println("Print class of B");
    }
}

class C extends B implements CI {
    public void printC() {
        System.out.println("Print class of B");
    }
}

public class solve {
    public static void main(String[] args) {
        C test = new C();
        test.printA();
        test.printB();
        test.printC();
    }
}
```

Topic 3a

```java
package com.tonmoy.moneyconverter;

import java.awt.Color;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;
import java.text.DecimalFormat;
```

```
import javax.swing.*;
public class myframe extends JFrame implements ActionListener{
    JTextField txf =new JTextField();
    private static final DecimalFormat df = new DecimalFormat("0.00");
    JTextField txf2 =new JTextField();
    JLabel label = new JLabel("INPUT MONEY");
    JLabel label2 = new JLabel("OUTPUT MONEY");
    JLabel label3= new JLabel();
    String[] choice={"USD"};
    String[] choice2={"BDT"};
    JComboBox<String> combo = new JComboBox<>(choice);
    JComboBox<String> combo2 = new JComboBox<>(choice2);
    JButton b=new JButton("Convert");
    JButton b2=new JButton("Clear");
    myframe(){
        setSize(420,420);
        setTitle("MoneyConverter");
        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setLocation(650,250);
        setResizable(false);
        getContentPane().setBackground(new Color(255, 213, 128));
        txf.setBounds(30,150,100,30);
        txf2.setBounds(270,150,120,30);
        txf.setBackground(Color.cyan);
        txf2.setBackground(Color.cyan);
        label.setBounds(30,20,100,100);
        label2.setBounds(270,20,100,100);
        label.setForeground(Color.BLUE);
        label2.setForeground(Color.BLUE);
        combo.setBounds(30,90,80,30);
        combo.setBackground(Color.GREEN);
        combo2.setBackground(Color.GREEN);
        combo2.setBounds(270,90,80,30);
        b.setBounds(140, 230, 100, 30);
        b.setBackground(Color.GREEN);
        b.setForeground(Color.red);
        b2.setBounds(140, 270, 100, 30);
        b2.setBackground(Color.GREEN);
        b2.setForeground(Color.red);
        label3.setBounds(140, 20, 150, 50);
        getContentPane().setLayout(null);
        add(txf);
        add(txf2);
        add(combo);
```

```
        add(combo2);
        add(label);
        add(b);
        add(b2);
        add(label2);
        add(label3);
        b.addActionListener(this);
        b2.addActionListener(this);
        b.setActionCommand("button");
        b2.setActionCommand("Clear");
    }
    @Override
    public void actionPerformed(ActionEvent e){
        if(e.getActionCommand().equals("button")){
        String s0 = (String) combo.getSelectedItem();
        String s = (String) combo2.getSelectedItem();
        String s1=txf.getText();
            try {
                double a=Double.parseDouble(s1);
                if(s1.isEmpty()){
                    label3.setText("Empty text-field !");
                    txf2.setText(null);
                }
                else {
                    label3.setText(null);
                    switch (s) {
                        case "BDT":
                            a = a * 105.5085;
                            String s2 = df.format(a);
                            txf2.setText(s2 + " TAKA");
                            break;
                    }
                }
            } catch (NumberFormatException jj) {
                label3.setText("Not a valid double value !");
            }
        }
        else if(e.getActionCommand().equals("Clear")){
            txf.setText(null);
            txf2.setText(null);
        }
    }
}
```

```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to
change this license
 * Click
nbfs://nbhost/SystemFileSystem/Templates/Project/Maven2/JavaApp/src/main/java/${p
ackagePath}/${mainClassName}.java to edit this template
 */

package com.tonmoy.moneyconverter;
```

Topic 3b

```
/**
 *
 * @author tonmoy
 */
public class Moneyconverter {

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