# Directions

1. Complete the following programs. Pages 585, Question 7, 8, 9, 10
2. Screenshot the running programs. Include enough output to show the program works in it’s entirety.
3. Submit screenshots/copies of the code.
   1. Partial credit can be had if you made a valiant effort.
4. Submit to Brightspace.

Part 1: Complete Chapter 14 Programming Exercises starting on page 585; provide a snippet of the code and of the output screen when creating a main method:

**Question 7:**

import javax.swing.\*;  
import java.awt.\*;  
import java.awt.event.MouseEvent;  
import java.awt.event.MouseListener;  
import java.util.ArrayList;  
  
public class JCapitals implements MouseListener {  
  
 private JList jlist;  
 private JPanel panel;  
 private JLabel label;  
  
 public JCapitals() {  
  
 //Frame  
 JFrame frame = new JFrame("Countries");  
 frame.setLayout(new FlowLayout(FlowLayout.*CENTER*));  
 frame.setSize(1000, 750);  
 frame.setDefaultCloseOperation(WindowConstants.*EXIT\_ON\_CLOSE*);  
 frame.setVisible(true);  
  
 //Array List  
  
 ArrayList<String> list = new ArrayList<>();  
  
 list.add("USA");  
 list.add("Canada");  
 list.add("Mexico");  
 list.add("Germany");  
 list.add("France");  
 list.add("Spain");  
 list.add("Russia");  
  
  
 //Adding components  
 jlist = new JList(list.toArray());  
 jlist.addMouseListener(this);  
 label = new JLabel("Capital >>> ");  
 panel = new JPanel();  
 panel.add(jlist);  
 panel.add(label);  
 frame.add(panel);  
  
 }  
  
 public static void main(String[] args) {  
 new JCapitals();  
 }  
  
 @Override  
 public void mouseClicked(MouseEvent e) {  
  
 }  
  
 @Override  
 public void mousePressed(MouseEvent e) {  
  
 }  
  
 @Override  
 public void mouseReleased(MouseEvent e) {  
  
  
 if (jlist.getSelectedValue() == "USA") {  
 label.setText("Capital >>> Washington D.C.");  
 } else if (jlist.getSelectedValue() == "Canada") {  
 label.setText("Capital >>> Ottowa");  
 } else if (jlist.getSelectedValue() == "Mexico") {  
 label.setText("Capital >>> Mexico City");  
 } else if (jlist.getSelectedValue() =="Germany") {  
 label.setText("Capital >>> Berlin");  
 } else if (jlist.getSelectedValue() == "France") {  
 label.setText("Capital >>> Paris");  
 } else if (jlist.getSelectedValue() == "Spain") {  
 label.setText("Capital >>> Madrid");  
 } else if (jlist.getSelectedValue() == "Russia") {  
 label.setText("Capital >>> Moscow");  
 }  
  
  
 }  
  
 @Override  
 public void mouseEntered(MouseEvent e) {  
  
 }  
  
 @Override  
 public void mouseExited(MouseEvent e) {  
  
 }  
}

Graphical user interface, website

Description automatically generated

**Question 8:**

import javax.swing.\*;  
import java.awt.\*;  
import java.awt.event.ActionEvent;  
import java.awt.event.ActionListener;  
  
public class JInsurance implements ActionListener {  
  
 private JPanel panel,panel2;  
 private ButtonGroup g1;  
 private JCheckBox c1,c2,c3,c4;  
  
 private TextField t;  
 JInsurance(){  
  
 //Frame  
 JFrame frame = new JFrame("Insurance");  
 frame.setLayout(new FlowLayout(FlowLayout.*CENTER*));  
 frame.setSize(1000, 750);  
 frame.setDefaultCloseOperation(WindowConstants.*EXIT\_ON\_CLOSE*);  
 frame.setVisible(true);  
  
 c1 = new JCheckBox("HMO");  
 c2 = new JCheckBox("PPO");  
  
 g1 = new ButtonGroup();  
 g1.add(c1);  
 g1.add(c2);  
  
 c3 = new JCheckBox("Dental");  
 c4 = new JCheckBox("Vision");  
 t = new TextField();  
 t.setText("Price >>> ");  
  
 c1.addActionListener(this);  
 c2.addActionListener(this);  
 c3.addActionListener(this);  
 c4.addActionListener(this);  
  
 panel = new JPanel();  
 panel.add(c1);  
 panel.add(c2);  
 panel2 = new JPanel();  
 panel2.add(c3);  
 panel2.add(c4);  
 panel2.add(t);  
  
 panel.setLayout(new BoxLayout(panel,BoxLayout.*X\_AXIS*));  
 panel2.setLayout(new BoxLayout(panel2,BoxLayout.*X\_AXIS*));  
  
  
 frame.add(panel);  
 frame.add(panel2);  
  
 }  
  
 public static void main(String[] args) {  
 new JInsurance();  
 }  
  
  
 @Override  
 public void actionPerformed(ActionEvent e) {  
 int price =0;  
  
 if(c1.isSelected())  
 price+=200;  
 else if(c2.isSelected())  
 price+=600;  
  
 if(c3.isSelected())  
 price+=75;  
  
 if(c4.isSelected())  
 price+=20;  
  
 t.setText("Price >>> " + price);  
 }  
}

Graphical user interface, text, application

Description automatically generated

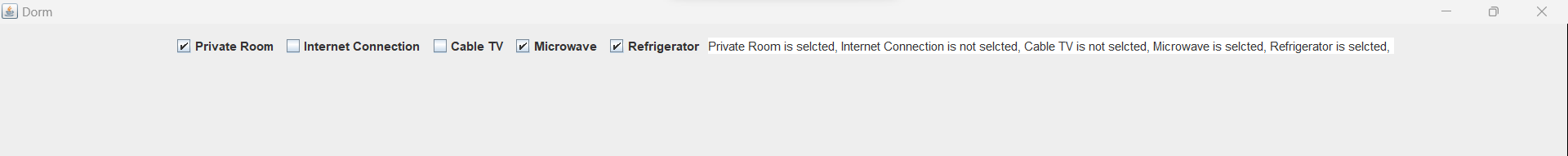
**Question 9:**

1. import javax.swing.\*;  
   import java.awt.\*;  
   import java.awt.event.ActionEvent;  
   import java.awt.event.ActionListener;  
   import java.awt.event.TextEvent;  
     
   public class JDorm implements ActionListener {  
    private JPanel panel;  
    private JCheckBox c1,c2,c3,c4,c5;  
    private TextArea t;  
    JDorm()  
    {  
    //Frame  
    JFrame frame = new JFrame("Dorm");  
    frame.setLayout(new FlowLayout(FlowLayout.*CENTER*));  
    frame.setSize(1000, 750);  
    frame.setDefaultCloseOperation(WindowConstants.*EXIT\_ON\_CLOSE*);  
    frame.setVisible(true);  
     
    //Checkboxes  
     
    c1 = new JCheckBox("Private Room");  
    c2 = new JCheckBox("Internet Connection");  
    c3 = new JCheckBox("Cable TV");  
    c4 = new JCheckBox("Microwave");  
    c5 = new JCheckBox("Refrigerator");  
    c1.addActionListener(this);  
    c2.addActionListener(this);  
    c3.addActionListener(this);  
    c4.addActionListener(this);  
    c5.addActionListener(this);  
     
     
    //Panel  
    panel = new JPanel();  
    panel.add(c1);  
    panel.add(c2);  
    panel.add(c3);  
    panel.add(c4);  
    panel.add(c5);  
     
     
    //Text Area  
    t = new TextArea();  
    t.setText("Not selected >>> Private Room, Internet Connection, Cable TV, Microwave, Refrigerator");  
    panel.add(t);  
     
    //Adding panel  
    frame.add(panel);  
    }  
     
    public static void main(String[] args) {  
    new JDorm();  
    }  
     
    @Override  
    public void actionPerformed(ActionEvent e) {  
     
    if(c1.isSelected())  
    t.append("\nPrivate Room was selected");  
    else if(!c1.isSelected())  
    t.append("\nPrivate Room was deselected");  
     
    if(c2.isSelected())  
    t.append("\nInternet Connection was selected");  
    else if(!c2.isSelected())  
    t.append("\nInternet Connection was deselected");  
     
    if(c3.isSelected())  
    t.append("\nCable TV was selected");  
    else if(!c3.isSelected())  
    t.append("\nCable TV was deselected");  
     
    if(c4.isSelected())  
    t.append("\nMicrowave was selected");  
    else if(!c4.isSelected())  
    t.append("\nMicrowave was deselected");  
     
    if(c5.isSelected())  
    t.append("\nRefrigerator was selected");  
    else if(!c5.isSelected())  
    t.append("\nRefrigerator was deselected");  
    }  
   }

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Description automatically generated with medium confidence

import javax.swing.\*;  
import java.awt.\*;  
import java.awt.event.ActionEvent;  
import java.awt.event.ActionListener;  
  
public class JDorm2 implements ActionListener {  
 private JPanel panel;  
 private JCheckBox c1,c2,c3,c4,c5;  
 private JTextArea t;  
 JDorm2()  
 {  
 //Frame  
 JFrame frame = new JFrame("Dorm");  
 frame.setLayout(new FlowLayout(FlowLayout.*CENTER*));  
 frame.setSize(1000, 750);  
 frame.setDefaultCloseOperation(WindowConstants.*EXIT\_ON\_CLOSE*);  
 frame.setVisible(true);  
  
 //Checkboxes  
  
 c1 = new JCheckBox("Private Room");  
 c2 = new JCheckBox("Internet Connection");  
 c3 = new JCheckBox("Cable TV");  
 c4 = new JCheckBox("Microwave");  
 c5 = new JCheckBox("Refrigerator");  
 c1.addActionListener(this);  
 c2.addActionListener(this);  
 c3.addActionListener(this);  
 c4.addActionListener(this);  
 c5.addActionListener(this);  
  
 //Panel  
 panel = new JPanel();  
 panel.add(c1);  
 panel.add(c2);  
 panel.add(c3);  
 panel.add(c4);  
 panel.add(c5);  
  
 //Text Area  
 t = new JTextArea("None Selected");  
 panel.add(t);  
  
 //Adding panel  
 frame.add(panel);  
 }  
  
 public static void main(String[] args) {  
 new JDorm2();  
 }  
  
 @Override  
 public void actionPerformed(ActionEvent e) {  
 String word ="";  
  
 if(c1.isSelected())  
 word+="Private Room is selcted, ";  
 else if(!c1.isSelected())  
 word+="Private Room is not selcted, ";  
  
 if(c2.isSelected())  
 word+="Internet Connection is selcted, ";  
 else if(!c2.isSelected())  
 word+="Internet Connection is not selcted, ";  
  
 if(c3.isSelected())  
 word+="Cable TV is selcted, ";  
 else if(!c3.isSelected())  
 word+="Cable TV is not selcted, ";  
  
 if(c4.isSelected())  
 word+="Microwave is selcted, ";  
 else if(!c4.isSelected())  
 word+="Microwave is not selcted, ";  
  
 if(c5.isSelected())  
 word+="Refrigerator is selcted, ";  
 else if(!c5.isSelected())  
 word+="Refrigerator is not selcted, ";  
  
 t.setText(word);  
 }  
}

**Question 10:**

import javax.swing.\*;  
import java.awt.\*;  
import java.awt.event.ActionEvent;  
import java.awt.event.ActionListener;  
  
public class JPhotoFrame implements ActionListener  
{  
 private JCheckBox c1,c2,c3,c4,c5;  
 private JPanel p1,p2;  
 private JLabel total;  
  
 JPhotoFrame(){  
 //Frame  
 JFrame frame = new JFrame("Dorm");  
 frame.setLayout(new FlowLayout(FlowLayout.*CENTER*));  
 frame.setSize(1000, 750);  
 frame.setDefaultCloseOperation(WindowConstants.*EXIT\_ON\_CLOSE*);  
 frame.setVisible(true);  
  
 //Boxes  
 c1 = new JCheckBox("One person >>> $40");  
 c2 = new JCheckBox("Two or more people >>> $75");  
 c3 = new JCheckBox("Add a pet >>> $95");  
 c4 = new JCheckBox("In Studio >>> No Added Cost");  
 c5 = new JCheckBox("On Sight >>> $90");  
  
 c1.addActionListener(this);  
 c2.addActionListener(this);  
 c3.addActionListener(this);  
 c5.addActionListener(this);  
  
 //Panels  
 p1 = new JPanel();  
 p2 = new JPanel();  
  
 p1.add(c1);  
 p1.add(c2);  
 p1.add(c3);  
 p1.setLayout(new BoxLayout(p1,BoxLayout.*Y\_AXIS*));  
  
 p2.add(c4);  
 p2.add(c5);  
 p2.setLayout(new BoxLayout(p2,BoxLayout.*Y\_AXIS*));  
 frame.add(p1);  
 frame.add(p2);  
  
 //Label  
  
 total = new JLabel("Total Price >>> $");  
 frame.add(total);  
 }  
  
 public static void main(String[] args) {  
 new JPhotoFrame();  
 }  
  
 @Override  
 public void actionPerformed(ActionEvent e) {  
 int price =0;  
  
 if(c1.isSelected())  
 price+=40;  
 else if(c2.isSelected())  
 price+=75;  
  
 if(c3.isSelected())  
 price+=95;  
  
 if(c5.isSelected())  
 price+=90;  
  
 total.setText("Total Price >>> $" + price);  
 }  
  
}

Chart

Description automatically generatedPart 2: complete question 3 of the Game Zone on Pg. 586. Provide a snippet of your code and a snippet of the output:

import javax.swing.\*;  
import java.awt.\*;  
import java.awt.event.ActionEvent;  
import java.awt.event.ActionListener;  
import java.util.ArrayList;  
import java.util.Random;  
  
public class LMS extends JFrame implements ActionListener {  
 private ArrayList<JCheckBox> checkBoxList;  
 private JButton button;  
 private JLabel statusLabel;  
 private int totalBoxes;  
 private int remainingBoxes;  
  
 public LMS() {  
 super("Last Man Standing Game");  
 setDefaultCloseOperation(JFrame.*EXIT\_ON\_CLOSE*);  
 setLayout(new GridLayout(0, 5, 10, 10));  
  
 checkBoxList = new ArrayList<>();  
 totalBoxes = 10;  
 remainingBoxes = totalBoxes;  
  
 for (int i = 0; i < totalBoxes; i++) {  
 JCheckBox box = new JCheckBox();  
 box.setName(String.*valueOf*(i));  
 checkBoxList.add(box);  
 add(box);  
 }  
  
 button = new JButton("Next Turn");  
 button.addActionListener(this);  
 add(button);  
  
 statusLabel = new JLabel("Remaining boxes: " + remainingBoxes);  
 add(statusLabel);  
  
 setSize(500, 200);  
 setVisible(true);  
 }  
  
 @Override  
 public void actionPerformed(ActionEvent e) {  
 int playerSelection = getPlayerSelection();  
 int computerSelection = getComputerSelection();  
 removeSelectedBoxes(playerSelection + computerSelection);  
  
 if (remainingBoxes == 1) {  
 statusLabel.setText("You win!");  
 button.setEnabled(false);  
 } else {  
 statusLabel.setText("Remaining boxes: " + remainingBoxes);  
 }  
 }  
  
 private int getPlayerSelection() {  
 int selectedBoxes = 0;  
  
 for (JCheckBox box : checkBoxList) {  
 if (box.isSelected()) {  
 selectedBoxes++;  
 }  
 }  
  
 return selectedBoxes;  
 }  
  
 private int getComputerSelection() {  
 Random random = new Random();  
 int maxBoxes = Math.*min*(3, remainingBoxes - 1);  
 return random.nextInt(maxBoxes) + 1;  
 }  
  
 private void removeSelectedBoxes(int count) {  
 int removedBoxes = 0;  
  
 for (JCheckBox box : checkBoxList) {  
 if (box.isSelected() && removedBoxes < count) {  
 box.setSelected(false);  
 box.setEnabled(false);  
 remainingBoxes--;  
 removedBoxes++;  
 }  
 }  
 }  
  
 public static void main(String[] args) {  
 LMS game = new LMS();  
 }  
}

A picture containing chart

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