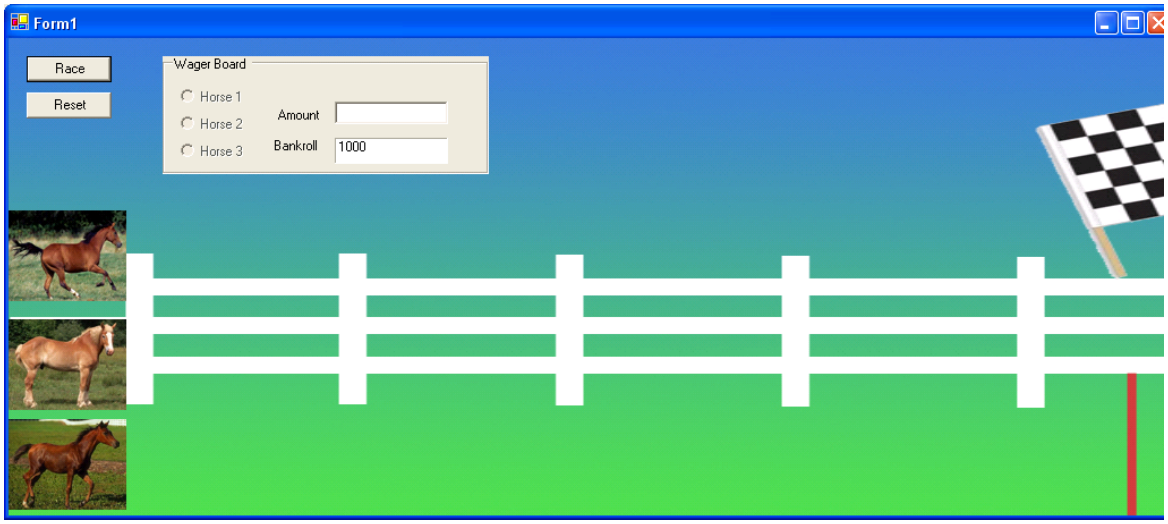
Name: **Session:**

Programming II

Lab Exercise 5.19.2022

Horserace Project

In this project you will build a horserace game with betting capabilities.



You will find some horse pictures for your 3 labels as well as the background located in \\Ada\Data Files\Programming II\Lab Exercise 6.9.2017\. You should use a Timer for every step of the simulation. You will generate a random number for each horse and the random number will determine if the horse moves ahead or not. By controlling the X-position of the label, you can control its position on the track. You may handicap your horses by controlling their probabilities. The first horse to get to the end of the track will be the winner.

1. Add three timers to your application as well as the following controls: 3 labels (to hold the horse pictures), 2 buttons (Race and Reset), a group box with 3 radio buttons, two labels, and 2 text boxes.

2. Add the following to the form as global declarations

```
bool win = false;
int winningHorse;
int wagerHorse;
int bankRoll = 1000;
int wager;
Random r = new Random();
```

3. Each horse will have its own timer. Add the following code to each timer_Tick event. Be sure to edit the code so that it reflects the specific timer.

```
int randomNumber1;
randomNumber1 = r.Next(1, 6);
switch (randomNumber1)
{
   case 1:
      lblHorse1.Left += 3;
      break;
   case 2:
      lblHorse1.Left += 3;
      break;
   case 6:
      lblHorse1.Left += 6;
      break;
}

if (lblHorse1.Left > 500)
{
   winningHorse = 1;
   win = true;
   timer1.Enabled = false;
   timer2.Enabled = false;
   timer3.Enabled = false;
   checkWin();
}
```

4. Add the following CheckWin procedure

```
private void checkWin()
{
   if (win)
   {
      switch (winningHorse)
      {
         case 1:
            if (wagerHorse == 1)
               bankRoll += wager;
            else
               bankRoll -= wager;
            lblBankRoll.Text = bankRoll.ToString("c");
            winnersCircle();
            break;
```

```
            case 2:
               if (wagerHorse == 2)
                  bankRoll += wager;
               else
                  bankRoll -= wager;
               lblBankRoll.Text = bankRoll.ToString("c");
               winnersCircle();
               break;
            case 3:
               if (wagerHorse == 3)
                  bankRoll += wager;
               else
                  bankRoll -= wager;
               lblBankRoll.Text = bankRoll.ToString("c");
               winnersCircle();
               break;
         }
      }
   }
```

5. Add the following to the Form_Load procedure

```
lblBankRoll.Text = bankRoll.ToString("c");
btnRace.Enabled = false;
txtWager.Text = "";
txtWager.Focus();
```

6. Add the following to the Race button event handler:

```
rbHorse1.Enabled = false;
rbHorse2.Enabled = false;
rbHorse3.Enabled = false;
timer1.Enabled = true;
timer2.Enabled = true;
timer3.Enabled = true;

if (rbHorse1.Checked)
{
   wagerHorse = 1;
   wager = Convert.ToInt32(txtWager.Text);
}

if (rbHorse2.Checked)
{
   wagerHorse = 2;
   wager = Convert.ToInt32(txtWager.Text);
```

```
}
if (rbHorse3.Checked)
{
   wagerHorse = 3;
   wager = Convert.ToInt32(txtWager.Text);
}
```

7. In order to not crash your program if you try to race without a wager, we will add the following event:

```
private void txtWager_TextChanged(object sender, EventArgs e)
{
   btnRace.Enabled = true;
}
```

8. Add the following code to the Reset button event handler:

```
lblHorse1.Left = 0;
lblHorse2.Left = 0;
lblHorse3.Left = 0;
rbHorse1.Enabled = true;
rbHorse2.Enabled = true;
rbHorse3.Enabled = true;
txtWager.Text = "";
txtWager.Focus();
win = false;
timer1.Enabled = false;
timer2.Enabled = false;
timer3.Enabled = false;
winningHorse = 0;
wagerHorse = 0;
btnRace.Enabled = false;
```

9. Add a second form to your project called Form2 and add a picture box to the form:

10. Add the following winnersCircle function to your form:

```
private void winnersCircle()
{
   Form2 winner = new Form2();
   switch (winningHorse)
   {
      case 1:
         winner.pbWinner.Image = lblHorse1.Image;
         winner.lblWinner.Text = "Seabisquit";
         break;
      case 2:
         winner.pbWinner.Image = lblHorse2.Image;
         winner.lblWinner.Text = "Prancer";
         break;
      case 3:
         winner.pbWinner.Image = lblHorse3.Image;
         winner.lblWinner.Text = "Seattle Slew";
         break;
   }
   winner.ShowDialog();
}
```

10. Now that you have your race working, make some interesting improvements to the game. When you have completed your project, print a copy of your interface as well as your source code and attach to this sheet to turn in.