```cpp
/*
Daniel Avila    February 19th 2020  Section 19
Lab 4: Classes
Description: In this lab, we implement a Class and using it to code functions within the scope of the class
*/
#include <iostream>
#include <time.h>
#include <string>
using namespace std;

//This class will act as a head of multiple functions so that the rest of the functions are sub-calls of the class
class Pet
{
    private://The class' variables that only correspond to the class' purpose
        string name;//For the pet's name
        int age=0;//For the pet's age
        int hunger=0;//For the pet's hunger
        int happiness=0;//For the pet's happiness
    public://Allows all the functions to be called in the main with the class syntax
        Pet()//This is the default construtor
        {
            hunger = rand() % 5 + 1;//number for hunger
            happiness = rand() % 5 + 1;//number for happiness
        }
        string setName()//This function is to get the pet's name
        {
            cout << "Please Enter A Name For Your Pet Orangutan: ";
            getline(cin, name);//This is used to receive the user's input
            cout << endl;
            return name;//Returns the name so that it stays with the function
        }
        void displayAttributes()//This function is for displaying the attributes
        {
            cout << "- - - - - - - - - - - - - - - - - - - - - -" << endl;
            cout << "\t--" << name << "'s stats--" << endl << endl;
            cout << name << "'s Age: " << age << endl;//Displays the age that starts at 0
            cout << name << "'s Hunger: " << hunger << endl;//Displays arandom number for it
            cout << name << "'s Happiness: " << happiness << endl;//Displays a random number for it
            cout << "- - - - - - - - - - - - - - - - - - - - -" << endl << endl;
            age = age + 1;//Age goes up one after it is called
        }
        int getAge()//Function to reference the pet's age
        {
            return age;//Gives cuurent age
        }
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46          int getHunger()//Function to reference the pet's hunger
47          {
48              return hunger;//Gives cuurent hunger
49          }
50          int getHappiness()//Function to reference the pet's happiness
51          {
52              return happiness;//Gives cuurent happiness
53          }
54          void feed()//This function will have add the hunger but deplete the
              happiness when the first option is called
55          {
56              cout << name << " dances with joy and devours pasta. (+1 Hunger)" <<
                  endl;
57              hunger = hunger + 1;
58          }
59          void play()//This function will have deplete the hunger but add the
              happiness when the second option is called
60          {
61              cout << name << " goes for a bike ride.  (+1 Happiness)" << endl;
62              happiness = happiness + 1;
63          }
64          void decreaseFeed()//This function is for decreasing the hunger of the
              pet
65          {
66              cout << name << " is looking hungry (-1 Hunger)" << endl << endl;
67              hunger = hunger - 1;//Decreases hunger by 1
68          }
69          void decreasePlay()//This function is for decreasing the happiness of the
               pet
70          {
71              cout << name << " is looking like he is about to cry (-1 Happiness)"
                  << endl << endl;
72              happiness = happiness - 1;//Decreases happiness by 1
73          }
74          void deathByAge()//Once the pet has passed away it will call this
              fucntion so that it displays the attributes
75          {
76              displayAttributes();//Calls the function above but still within scope
77              cout << name << " died of old age." << endl;
78          }
79          void deathByZero()//Function to keep the pet alive the attributes above
              zero whilst alive
80          {                   //If any of the attributes reach 0, it will die
81              if (happiness == 0 || hunger == 0 && age != 5)//As long as the
                  conditions are true
82              {                                                   //it will display
                  attributes and the pet dies
83                  displayAttributes();
84                  cout << name << " died tragically." << endl;
85              }
86          }
87          void decrease()//To make a random attribute decrase by calling when it
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            equals number 0 or 1
88          {
89              int random = rand() % 2;//Use to create a random number from 0 or 1
90              if (random == 0)
91                  decreaseFeed();//When number is 0, it will call the hunger
                      depletion function
92              if (random == 1)
93                  decreasePlay();//When number is 1, it will call the happiness
                      depletion function
94          }
95  };
96  int menu(int &choice)//Displays a menu and references the choice to the class
97  {
98      cout << "\t--Main Menu-- " << endl;
99      cout << "1. Feed" << endl;
100     cout << "2. Play" << endl;
101     cout << "Select(1 or 2): ";
102     cin >> choice; //Receives the user input and returns it
103     cout << endl;
104     return choice;//Output will be the user's choice
105 }
106 int main()
107 {
108     srand(time(0));//So that a random number gets generated
109     int choice;//Initialized variables
110     Pet Pet;//A class defintion so that it gets from the class above
111     Pet.setName();
112     do
113     {
114         Pet.displayAttributes();//To display the menu of attributes
115         menu(choice);//To display the menu of the choices to do for the user
116         if (choice == 1)//This if-else-if loop is to decide whether to do this
              function or
117         {               //the next function depending on the option of the user
118             Pet.feed();//Feed inside the class is being called
119             Pet.decrease();//Calls a random attribute to be decreased
120             Pet.deathByZero();//Checks if the attributes are above zero, if not
                  then the pet dies
121         }
122         else if (choice == 2)//When the second choice is chosen then the next
              function is done
123         {
124             Pet.play();//Play inside the class is called
125             Pet.decrease();//Calls a random attribute to be decreased
126             Pet.deathByZero();//Checks if the attributes are above zero, if not
                  then the pet dies
127         }
128         else
129         {
130             cout << "Invalid Choice!Type A Valid Input!" << endl;//To make sure a
                  valid choice is chosen
131         }
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132     } while (Pet.getAge() < 5 && Pet.getHunger() > 0 && Pet.getHappiness() >
          0);//Do-while loop is iterated as long as the age is less than 5
133     if (Pet.getAge() == 5)//When the pet's age is 5 then is dies
                //and attributes are greater than 0
134     {
135         Pet.deathByAge();//Dead function is called
136     }
137
138     system("pause>nul");
139     return 0;
140 }
```

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Please Enter A Name For Your Pet Orangutan: Johnny Boy

- - - - - - - - - - - - - - - - - - - - - - -
        --Johnny Boy's stats--

Johnny Boy's Age: 0
Johnny Boy's Hunger: 2
Johnny Boy's Happiness: 2
- - - - - - - - - - - - - - - - - - - - - - -

        --Main Menu--
1. Feed
2. Play
Select(1 or 2): 2

Johnny Boy goes for a bike ride.  (+1 Happiness)
Johnny Boy is looking hungry (-1 Hunger)

- - - - - - - - - - - - - - - - - - - - - - -
        --Johnny Boy's stats--

Johnny Boy's Age: 1
Johnny Boy's Hunger: 1
Johnny Boy's Happiness: 3
- - - - - - - - - - - - - - - - - - - - - - -

        --Main Menu--
1. Feed
2. Play
Select(1 or 2): 1

Johnny Boy dances with joy and devours pasta. (+1 Hunger)
Johnny Boy is looking hungry (-1 Hunger)

- - - - - - - - - - - - - - - - - - - - - - -
        --Johnny Boy's stats--

Johnny Boy's Age: 2
Johnny Boy's Hunger: 1
Johnny Boy's Happiness: 3
- - - - - - - - - - - - - - - - - - - - - - -

        --Main Menu--
1. Feed
2. Play
Select(1 or 2): 1

Johnny Boy dances with joy and devours pasta. (+1 Hunger)
Johnny Boy is looking hungry (-1 Hunger)

- - - - - - - - - - - - - - - - - - - - - - -
        --Johnny Boy's stats--

Johnny Boy's Age: 3
Johnny Boy's Hunger: 1
Johnny Boy's Happiness: 3
- - - - - - - - - - - - - - - - - - - - - - -

        --Main Menu--
1. Feed
2. Play
Select(1 or 2): 1
```

```
Johnny Boy dances with joy and devours pasta. (+1 Hunger)
Johnny Boy is looking hungry (-1 Hunger)

- - - - - - - - - - - - - - - - - - - - - - -
        --Johnny Boy's stats--

Johnny Boy's Age: 4
Johnny Boy's Hunger: 1
Johnny Boy's Happiness: 3
- - - - - - - - - - - - - - - - - - - - - - -

        --Main Menu--
1. Feed
2. Play
Select(1 or 2): 2

Johnny Boy goes for a bike ride.  (+1 Happiness)
Johnny Boy is looking like he is about to cry (-1 Happiness)

- - - - - - - - - - - - - - - - - - - - - - -
        --Johnny Boy's stats--

Johnny Boy's Age: 5
Johnny Boy's Hunger: 1
Johnny Boy's Happiness: 3
- - - - - - - - - - - - - - - - - - - - - - -

Johnny Boy died of old age.
```