

main.cpp

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1 /*****
2 * PROGRAMMER : Ali Eshghi & Julian Lasting
3 * STUDENT ID : 1112261 & 1097778
4 * CLASS      : CS1B
5 * SECTION    : MW 7:30pm
6 * LAB 14     : Farmer's Pete livestock(inheritance class)
7 * DUE DATE   : 13 December 2019
8 *****/
9
10 #include "MyHeader.h"
11 #include "ClassHeader.h"
12
13 /*****
14 * Lab 12
15 * -----
16 * This program uses the class and initializes the objects of the class using
17 * methods. then based on the user's choice the objects' values can be changed
18 * or get reinitialized to the first values.
19 * -----
20 * INPUT : firstMenuOption -> The first choice that initializes the objects
21 *                menuChoice -> choice of the user to change the age or value,
22 *                newAge      -> change the value of the object age of the class
23 *                newValue    -> change the value of the object value of the class
24 *                -----
25 * PROCESS: Initializing objects
26 *                Getting the first choice for the first menu
27 *                Getting the choice for the main menu
28 *                changing the age
29 *                changing the value
30 *                -----
31 * OUTPUT : the values of the object variables of the class
32 *****/
33
34 int main()
35 {
36     /*****
37     * CONSTANTS
38     * -----
39     * OUTPUT - USED FOR CLASS HEADING
40     * -----
41     * PROGRAMMER : Programmer's Name
42     * CLASS      : Student's Course
43     * SECTION    : Class Days and Time
44     * LAB_NUM    : Lab Number (specific to this lab)
45     * LAB_NAME   : Title of the Assignment
46     *****/
47     const string PROGRAMMER = "Ali Eshghi and Amirarsalan Valipour";
48     const string CLASS      = "CS1B";
49     const string SECTION    = "MW: 7:30p - 9:50p";
50     const int LAB_NUM = 12;
51     const string LAB_NAME  = "Intro to OOP";
52
53     /*****
54     * VARIABLES *
55     *****/
56 }
```

main.cpp

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56      *****/
57
58      Menu      startOption; //IN - choice of the first menu
59      int       menuOption;  //IN - choice of the main menu
60      int       animalOption; //IN - choice of which animal
61
62
63      bool      checkInp;    //PROCESS - input checking
64
65      char      initSure;
66
67      string     sheepName;
68      string     pigName;
69
70      Menu      menuChoice;
71
72      Animal     animal;
73      Sheep      sheep;
74      Pig        pig;
75
76
77
78      /*****
79      *   PROCESS   *
80      *****/
81      //this function will print header to the screen
82      PrintHeader();
83
84
85
86
87      //This function gets the user choice for the first menu to initialize or
88      //exit the program
89      startOption = FirstMenu();
90
91      switch(startOption)
92      {
93      case InitAnimal: menuChoice = InitAnimal;
94                      InitializeSheep(animal, sheep);
95                      InitializePig(animal, pig);
96
97      break;
98      case Exit: menuChoice = Exit;
99      break;
100     }
101
102     //while loop for the main menu untill the choice 0 is entered
103     while(menuChoice != Exit)
104     {
105         //this function will get the user's choice for the main menu
106         menuOption = MainMenu();
107
108         switch(menuOption)
109         {
110             case 1: menuChoice = InitSheep;
```

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111     break;
112
113     case 2: menuChoice = InitPig;
114     break;
115
116     case 3: menuChoice = ChangeAge;
117     break;
118
119     case 4: menuChoice = Display;
120     break;
121
122     default: menuChoice = Exit;
123 }
124
125 //if statement for the first option
126 if(menuChoice == InitSheep)
127 {
128     checkInp = false;
129
130     do
131     {
132         //INPUT – asks user if they are sure for reinitialization
133
134
135         cout << "Are you sure you want to reinitialize Sheeps (Y/N)?";
136         cin.get(initSure);
137
138
139         //CHECKS FOR THE CHAR INPUT
140
141         if (toupper(initSure) != 'Y' && toupper(initSure) != 'N')
142         {
143             cin.clear();
144             cin.ignore(numeric_limits<streamsize>::max(), '\n');
145
146             cout << endl;
147             cout << "**** "<< initSure
148                 << " is an invalid entry      ****" << endl;
149             cout << "**** Please input Y or N ****";
150             cout << endl << endl;
151
152             checkInp = false;
153
154         }
155
156         else
157         {
158
159             cin.ignore(numeric_limits<streamsize>::max(), '\n');
160             checkInp = true;
161
162         }
163     }
164     while(!checkInp);
165

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166
167 //if statement for reinitializing the classes to the first values
168 if(toupper(initSure) == 'Y')
169 {
170     cout << "\nInitializing the Sheeps..." << endl
171         << endl;
172
173
174
175     //the function uses the methods to initialize the animal array
176     InitializeSheep(animal, sheep);
177
178
179
180 }
181
182 else if(toupper(initSure) == 'N')
183 {
184     cout << "Sheeps have not beenre-initialized!" << endl <<endl;
185 }
186 }
187
188
189 //if statement for the second option of the menu
190 else if(menuChoice == InitPig)
191 {
192     checkInp = false;
193
194     do
195     {
196         //INPUT – asks user if they are sure for reinitialization
197
198
199         cout << "Are you sure you want to reinitialize Pigs (Y/N)?";
200         cin.get(initSure);
201
202
203         //CHECKS FOR THE CHAR INPUT
204
205         if (toupper(initSure) != 'Y' && toupper(initSure) != 'N')
206         {
207             cin.clear();
208             cin.ignore(numeric_limits<streamsize>::max(), '\n');
209
210             cout << endl;
211             cout << "**** "<< initSure
212                 << " is an invalid entry      ****" << endl;
213             cout << "**** Please input Y or N ****";
214             cout << endl << endl;
215
216             checkInp = false;
217
218
219         }
220

```

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221         else
222         {
223
224             cin.ignore(numeric_limits<streamsize>::max(), '\n');
225             checkInp = true;
226
227         }
228
229     }while(!checkInp);
230
231     //if statement for reinitializing the classes to the first values
232     if(toupper(initSure) == 'Y')
233     {
234         cout << "\nInitializing the Pigs..." << endl
235             << endl;
236
237         //the function uses the methods to initialize the animal array
238         InitializePig(animal, pig);
239
240
241     }
242
243
244     else if(toupper(initSure) == 'N')
245     {
246         cout << "Pigs have not beenre-initialized!" << endl <<endl;
247     }
248
249
250
251 }
252
253
254 //if statement for the third option of the main menu
255 else if(menuChoice == ChangeAge)
256 {
257     checkInp = false;
258
259     cout << "\nCHANGE AGE:" << endl;
260
261     //do while loop for user input for which animal type the user wants
262     //to change
263     do
264     {
265         //INPUT
266
267         cout << "Which type of animal do you have in mind" << endl;
268
269         cout << "1 - Sheep" << endl;
270         cout << "2 - Pig" << endl;
271
272         cout << "Select the animal type: ";
273
274
275         //CHECKS FOR THE CHAR INPUT

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276
277     if (!(cin >> animalOption))
278     {
279         cin.clear();
280         cin.ignore(numeric_limits<streamsize>::max(), '\n');
281
282         cout << endl;
283         cout << "**** Please input a NUMBER between 1 and 2 ****";
284         cout << endl << endl;
285
286         checkInp = false;
287     }
288
289     //CHECKS FOR THE RANGE ERROR
290
291     else if (animalOption >= 3 || animalOption <= 0 )
292     {
293
294
295         cout << endl;
296         cout << "**** The number " << animalOption
297         << " is an invalid entry ****" << endl;
298         cout << "**** Please input a number between 1 and 2 ****";
299         cout << endl << endl;
300
301         checkInp = false;
302     }
303
304     //PASS
305
306     else
307     {
308
309
310         cin.ignore(numeric_limits<streamsize>::max(), '\n');
311         checkInp = true;
312     }
313
314 }while(!checkInp);
315
316
317 //if statement to change the age for sheeps
318 if(animalOption == 1)
319 {
320
321     //Display Sheep
322     cout << endl;
323     sheep.DisplayHeaderSheep();
324     sheep.DisplaySheep();
325
326
327     cout << "\n Which Sheep would you like change: " << endl;
328     getline(cin, sheepName);
329
330     sheep.ChangeSheepAge(sheepName);

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331
332
333
334     }
335
336
337     //if statement to change the age for the pigs
338     else if (animalOption == 2)
339     {
340
341         //Display Pig
342         cout << endl;
343         pig.DisplayHeaderPig();
344         pig.DisplayPig();
345
346         cout << "\nWhich Pig would you like to changeP: " << endl;
347         getline(cin, pigName);
348
349         pig.ChangePigAge(pigName);
350
351     }
352
353
354
355
356
357
358
359     //if statement if the user wants to change value for Babe
360     else if (menuChoice == Display)
361     {
362
363         //these methods outputs the objects of the classes
364         cout << endl;
365         sheep.DisplayHeaderSheep();
366         sheep.DisplaySheep();
367
368         cout << endl;
369         pig.DisplayHeaderPig();
370         pig.DisplayPig();
371
372
373         cout << endl << endl;
374     }
375 }
376
377 //Display
378
379 }
380
381
382
383 return 0;
384 }
385

```

