**Homework 1 – CS60 Linnell**

**Arjun Kohli**

**W1579330**

**Problem 1:**

#include <iostream>

#include <fstream>

#include <string>

using namespace std;

void writeletter (string names[], int size, char letter, ofstream& out) {

cin >> names[size];

if (names[size].at(0) == letter) {

out << names[size];

}

size++;

}

int main() {

ifstream in\_stream;

ofstream out\_stream;

in\_stream.open("names.txt");

out\_stream.open("names1.txt");

if (in\_stream.fail() || out\_stream.fail()) {

cout << "Open failed" << endl;

exit(1);

}

int filesize = 0;

while (!in\_stream.eof()) {

string name = "";

in\_stream >> name;

filesize++;

}

string names[filesize];

while (!in\_stream.eof()) {

int i = 0;

while (i != filesize) {

in\_stream >> names[i];

i++;

}

}

while (!in\_stream.eof()) {

char letter = 'a';

while (letter <= 'z') {

writeletter(names, filesize, letter, out\_stream);

letter++;

}

}

in\_stream.close();

out\_stream.close();

return 0;

}

**Problem 2:**

#include <iostream>

#include <fstream>

#include <string>

using namespace std;

struct Animal {

string name;

char gender;

int age;

float price;

string type;

};

Animal Cheapest(string type, Animal a[], int size) {

int expensiveAnimal = 0;

int cheapestAnimal = 0;

for (int i = 0; i < size; i++) {

while (a[i].type == type) {

if (a[i].price > expensiveAnimal) {

expensiveAnimal = i;

}

}

int cheapestAnimal = expensiveAnimal;

for (int i = 0; i < size; i++) {

if (a[i].price < a[cheapestAnimal].price) {

cheapestAnimal = i;

}

}

}

return a[cheapestAnimal];

}

bool livetogether(Animal a, Animal b) {

if (a.type == b.type) {

return true;

}

return false;

}

int main() {

Animal a;

a.name = "Jack";

a.gender = 'M';

a.age = 10;

a.price = 100.00;

a.type = "dog";

Animal b;

b.name = "Lucy";

b.gender = 'F';

b.age = 14;

b.price = 150.00;

b.type = "dog";

bool test = livetogether(a, b)

cout << test << endl;

Animal arr[] = {a, b};

Animal cheapest = Cheapest("dog", arr, 2);

cout << cheapest.name << endl;

}

**Problem 3:**

#include <iostream>

#include <fstream>

#include <string>

using namespace std;

class Movie {

private:

string name;

string rating;

double earnings;

string get\_name() {

return name;

}

string get\_rating() {

return rating;

}

double get\_earnings() {

return earnings;

}

string set\_name(string n) {

name = n;

return name;

}

string set\_rating(string r) {

rating = r;

return rating;

}

double set\_earnings(double e) {

earnings = e;

return earnings;

}

public:

Movie();

Movie(string name\_, string rating\_, double earnings\_);

double movieShowing(int n) {

earnings = 12.00 \* n;

return earnings;

}

Movie mergeMovie(Movie m) {

Movie combined;

if (m.get\_name() == name) {

combined.get\_name() = name;

if (m.get\_rating() == "R" || rating == "R") {

combined.rating = "R";

}

else if (m.get\_rating() == "PG-13" || rating == "PG-13") {

combined.rating = "PG-13";

}

else if (m.get\_rating() == "PG" || rating == "PG") {

combined.rating = "PG";

}

else if (m.get\_rating() == "G" || rating == "G") {

combined.rating = "G";

}

combined.earnings = m.get\_earnings() + earnings;

} else {

combined.name = "Could not combine";

}

return combined;

}

};

Movie::Movie() {

name = "";

rating = "";

earnings = 0;

}

Movie::Movie(string name\_, string rating\_, double earnings\_) {

name = name\_;

rating = rating\_;

earnings = earnings\_;

}

int main() {

Movie mov("Star Wars", "PG", 1234);

cout << mov.get\_name() << endl;

cout << mov.get\_rating() << endl;

cout << mov.get\_earnings() << endl;

cout << Movie movieShowing(50) << endl;

Movie mov2("Star Wars", "R", 5678);

Movie mov3 = movie.mergeMovie(m2);

cout << mov3.get\_name() << endl;

cout << mov3.get\_rating() << endl;

cout << mov3.get\_earnings() << endl;

}

**Results**

**Problem 1:**

File name: names.txt

Tim

Jill

June

Tony

Tina

Bob

File name: names1.txt

Bob

Jill

June

Tim

Tony

Tina

**Problem 2:**

1

Jack

**Problem 3:**

Star Wars

PG

1234

600

Star Wars

R

6912