**Course “C Programing Language”**

**Topic:** Introduction to the programming language “C”

**Homework**

**Exercise 1.**

Display one couplet of my favorite song using the escape sequences for formatting.

“Yesterday Once More”

#include <iostream>

using namespace std;

int main() {

cout << "When I was young\n";

cout << "I'd listen to the radio\n";

cout << "Waitin' for my favorite songs\n";

cout << "When they played I'd sing along\n";

cout << "It made me smile.\n";

return 0;

}

**Exercise 2.**

#include <iostream>

using namespace std;

int main() {

cout << "Every " << endl;

cout << "\thunter " << endl;

cout << "\t\ttwants" << endl;

cout << "\t\t\tto " << endl;

cout << "\t\t\t\tknow... " << endl;

return 0;

}

**Exercise 3.**

Write the advertisement for a sale and output it to the screen in that form.

#include <iostream>

int main() {

std::cout << "Welcome to our Rottweiler Puppy Sale!\n\n"

<< "Don't miss out on the opportunity to bring home a lovable Rottweiler puppy! \n\n"

<< "Breed: Rottweiler\n\n"

<< "Our puppies are raised with love and care, ready to become a cherished part of your family! \n\n"

<< "Call now to reserve your adorable Rottweiler puppy: 222-22-22 \n\n"

<< "Check out our available puppies below:\n\n"

<< "222 | 222 |\n"

<< "22 | 22 |\n"

<< "22 | 22 |\n"

<< "22 | 22 |\n"

<< "and so on...\n\n"

<< "Visit us today and find your new furry friend! \n\n"

<< "Hurry, these precious puppies won't last long! \n";

return 0;

}

**Exercise 4.**

Three resistances R1, R2, R3 are given. Calculate the value of the resistance R0 according to the formula: 1 / R0 = 1 / R1 + 1 / R2 + 1 / R3.

1/R0 = 1/R1+1/R2+1/R3

1/R0 = (R2R3+R1R3+R1R2)/R1R2R3

R0 = R1R2R3/(R2R3+R1R3+R1R2)

R0 = (2\*4\*8)/ (4\*8+2\*8+2\*4) = 64/(32+16+8) = 1.142857

#include <iostream>

using namespace std;

int main(){

float R1, R2, R3, R0;

R1 = 2;

R2 = 4;

R3 = 8;

R0 = (R1\*R2\*R3)/ ((R2\*R3)+(R1\*R3)+(R1\*R2));

cout<<"R0 is "<<R0<<endl;

return 0;

}

**Exercice\_5**

Given the length of a circle, calculate the area of a circle using the formula S = pi \* R2, and calculate the radius from the formula of the length of a circle: L = 2 \* pi \* R

#include <iostream>

using namespace std;

int main(){

float S, R2, L, pi, R;

pi = 3.14;

S = pi \* R2;

R = L/2\*pi;

cout<<"Area of a circle is"<<S<<endl;

cout<<"Radius is"<<R<<endl;

return 0;

}

**Exercise\_6**

Calculate the traveled distance for the rectilinear uniformly accelerated motion using a formula S = v \* t + (a \* t2) / 2, where v - speed, t - time, and a - acceleration.

#include <iostream>

using namespace std;

int main(){

// S traveled Distance, v Speed, t time, and a acceleation.

float S, v, t, a;

S = v\*t+(a\*t\*t)/2;

return 0;

}

**Exercice\_7**

The user enters from the keyboard a distance to the airport and the time which he needs to get to the airport. Calculate at what speed he needs to go.

#include <iostream>

using namespace std;

int main(){

// d is distance, t is time, v is speed.

float d, t, v;

cout<<"input time";

cin>>t;

cout<<"input speed";

cin>>v;

d= v/t;

cout<<"The Distance to the airport is "<<d<< endl;

return 0;

}

**Exercise\_8**

The user enters from the keyboard a time of the commencement and completion of the call (hours, minutes and seconds). Calculate a cost of calls, if the cost of one minute is 30 cents.

#include <iostream>

using namespace std;

int main() {

int starthour, startminute, startsecond;

int endhour, endminute, endssecond;

cout << "start hour ";

cin >> starthour;

cout << "start minute ";

cin >> startminute;

cout << "start second ";

cin >> startsecond;

cout << "End hour ";

cin >> endhour;

cout << "End minute ";

cin >> endminute;

cout << "End second ";

cin >> endssecond;

// convert hour and second to minuute

starthour = starthour \* 60; // (1h=60mn)

startsecond = startsecond / 60; // (60s=1mnn)

endhour = endhour \* 60;

endssecond = endssecond / 60;

// calculated the call time

double spendtime;

spendtime = endhour - starthour + endminute - startminute + endssecond - startsecond;

// calculation a cost of calls(1 minute is 30 cent)

double cost\_of\_call;

cost\_of\_call = spendtime \* 30/100; //(1minute is 30 cent)

cout << "The cost of call is: $" << cost\_of\_call << endl;

return 0;

}

**Exercise\_9**.

The user enters from the keyboard a distance, gasoline consumption per 100 km and a cost of three kinds of gasoline. Display a comparative table with a cost of travel using different types of gasoline.

#include<iostream>

using namespace std;

int main() {

double distance, consumption\_per\_100Km, gasolin\_consumption;

cout << "your distance is :";

cin >> distance;

cout << "consumption per Km is :";

cin >> consumption\_per\_100Km;

// gasoline consumtion

gasolin\_consumption = distance \* consumption\_per\_100Km / 100;

// calculated the cost type of gasolin (total energy $2.5/L, PPT $2.45/L, Tela $2.40/L)

double total\_energy, PTT, Tela;

total\_energy = gasolin\_consumption \* 2.5;

PTT = gasolin\_consumption \* 2.45;

Tela = gasolin\_consumption \* 2.40;

//Display the Table;

cout << "\nComparative Table With the cost of traveling\n";

cout << "...................................................\n";

cout << " Type of gasolin | Travel Cost of " << distance << endl << "\n";

cout << "...................................................\n";

cout << " Total Energy | $" << total\_energy << endl;

cout << " PTT | $" << PTT << endl;

cout << " Tela | $" << Tela << endl;

cout << "...................................................\n";

return 0;

}