Ilia State University - ილიას სახელმწიფო უნივერსიტეტი

Object Oriented Programming Homework 1 Solutions

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Task Number 1

```
#include <iostream>
using namespace std;

struct phone //Creating a structure for phone number.
{
  int areacode;
  int exchange;
  int number;
};


int main()
{
  phone phone1 = {555,983,923};
  phone phone2;

  cout << "Enter your Area Code Please" << endl;
  cin >> phone2.areacode;

  cout << "Enter your Exchange Code Please" << endl;
  cin >> phone2.exchange;

  cout << "Enter your Phone Number Please" << endl;
  cin >> phone2.number;

  cout << "My Phone Number is: (" << phone1.areacode << ")" << phone1.exchange << "-" <<
phone1.number << endl;

  cout << "Your Phone Number is: (" << phone2.areacode << ")" << phone2.exchange << "-" <<
phone2.number << endl;

  return 0;
}
```

Task Number 2

```
#include <iostream>
using namespace std;

struct coordinates
{
int xaxis;
int yaxis;
};

int main()
{
coordinates point1;
coordinates point2;
coordinates point3;

cout << "Input X-axis for Point 1: ";
cin >> point1.xaxis;

cout << "Input Y-axis for Point 1: ";
cin >> point1.yaxis;

cout << "Input X-axis for Point 2: ";
cin >> point2.xaxis;

cout << "Input Y-axis for Point 2: ";
cin >> point2.yaxis;

point3.xaxis = point1.xaxis + point2.xaxis;
point3.yaxis = point1.yaxis + point2.yaxis;

cout << "Coordinates of Point 3 are: " << point3.xaxis << " & " <<point3.yaxis << endl;

return 0;
}
```

Task Number 3

```
#include <iostream>
using namespace std;

struct measurements
{
int feet;
float inches;
};

struct volume
{
measurements length;
measurements width;
measurements height;
};

int main()
{
volume room;

room.length.feet = 15;
room.length.inches = 7.0;
room.width.feet = 9;
room.width.inches = 2.0;
room.height.feet = 8;
room.height.inches - 0.0;

float l = room.length.feet + room.length.inches/12;
float w = room.width.feet + room.width.inches/12;
float h = room.height.feet + room.height.inches/12;

cout << "The volume of the desired room is calculated to be: " << l*w*h << " cubic feet.";

return 0;
}
```

Task Number 4

```
#include <iostream>
using namespace std;

struct employee
{
int number;
float compensation;
};

int main()
{

employee person1;
employee person2;
employee person3;

cout << " Please Enter the Employee ID of Employee 1: ";
cin >> person1.number;

cout << "Please Enter the Compensation of Employee 1 : ";
cin >> person1.compensation;

cout << " Please Enter the Employee ID of Employee 2: ";
cin >> person2.number;

cout << "Please Enter the Compensation of Employee 2 : ";
cin >> person2.compensation;

cout << " Please Enter the Employee ID of Employee 3: ";
cin >> person3.number;

cout << "Please Enter the Compensation of Employee 3 : ";
cin >> person3.compensation;

cout << "The ID number of Employee 1 is " << person1.number << ". Their compensation is " <<
person1.compensation << " GEL." << endl;

cout << "The ID number of Employee 2 is " << person2.number << ". Their compensation is " <<
person2.compensation << " GEL." << endl;

cout << "The ID number of Employee 3 is " << person3.number << ". Their compensation is " <<
person3.compensation << " GEL." << endl;

return 0;
}
```

Task Number 5

```
#include <iostream>
using namespace std;

struct date
{
int month;
int date;
int year;
};

int main()
{

date date1;

cout << "Please Enter the Month in (MM): ";
cin >> date1.month;

cout << "Please Enter the Date in (DD): ";
cin >> date1.date;

cout << "Please Enter the Year in (YYYY) : ";
cin >> date1.year;

cout << "The Entered Date is " << date1.month << "/" << date1.date << "/" << date1.year << endl;

return 0;
}
```

Task Number 6

```
#include <iostream>
using namespace std;

struct times
{
int hours;
int minutes;
int seconds;
};

int main()
{

times tm;

cout << "Please Enter Hours in (HH): ";
cin >> tm.hours;

cout << "Please Enter Minutes in (MM): ";
cin >> tm.minutes;

cout << "Please Enter Seconds in (SS): ";
cin >> tm.seconds;

long totalseconds = tm.hours*3600 + tm.minutes*60 + tm.seconds;

cout << "The Entered Time in seconds is: " << totalseconds << endl;

return 0;
}
```

Task Number 7

```
#include <iostream>
using namespace std;

int main()
{
int year;

cout << "Please Enter a Year to check if it's a Leap Year: ";
cin >> year;

if ( year % 400 == 0)
{
cout << year <<" is a leap year. February has 29 days in " << year << endl;
}

if ( year % 100 != 0 and year % 4 == 0)
{
cout << year <<" is a leap year. February has 29 days in " << year << endl;
}

else
{
cout << year <<" is not a leap year. February has 28 days in " << year << endl;
}

return 0;
}
```

Task Number 8

```
#include <iostream>
using namespace std;

struct timediff
{
int hours;
int minutes;
int seconds;
};
int main()
{
timediff time1;
timediff time2;
cout << "Start Time" << endl;
cout << "----------" << endl;

cout << "Enter Hours in (HH): ";
cin >> time1.hours;

cout << "Enter Minutes in (MM): ";
cin >> time1.minutes;

cout << "Enter Seconds in (SS): ";
cin >> time1.seconds;

cout << "Stop Time" << endl;
cout << "---------" << endl;

cout << "Enter Hours in (HH): ";
cin >> time2.hours;

cout << "Enter Minutes in (MM): ";
cin >> time2.minutes;

cout << "Enter Seconds in (SS): ";
cin >> time2.seconds;

int hr = time1.hours - time2.hours;
int min = time1.minutes - time2.minutes;
int sec = time1.seconds - time2.seconds;

cout << "Time Difference: " << time1.hours << ":" << time1.minutes << ":" << time1.seconds << "
- " << time2.hours << ":" << time2.minutes << ":" << time2.seconds << " = " << hr << ":" << min
<< ":" << sec << endl;

cout << "In case the timestamp is negative for all, this indicates a time difference of over 24 hours
plus the calculated time as above." << endl;

return 0;
}
```