Assignment 1

NED University of Engineering & Technology

Course: Object Oriented Programing

Course code: CT-251

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Department: BCIT (Second Semester)

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1. Make a class by name circle with radius as its member data. Provide constructors to initialize the objects

of the class and find the area and circumference of a circle. Also make class diagram.

Area=3.14\*radius\*radius

Circumferemce=2\*3.14\* radius

#include<iostream>

#define pi 3.14

using namespace std;

class circle

{

private:

int radius;

public:

circle(int radius=0):radius(radius)

{}

float area()

{

return pi \* radius\*radius;

}

float circumfernce()

{

return 2 \* pi\*radius;

}

};

int main()

{

circle c1(5), c2(7);

cout << c1.area()<<endl;

cout << c2.circumfernce() << endl;

system("pause");

}

2. Apply binary operator overloading concept to overload + operator to concatenate two strings.

#include<iostream>

#include<string>

using namespace std;

class str

{

private:

string st;

public:

str()

{

st = "";

}

str(string v)

{

st = v;

}

str operator + (str v)

{

str s;

s.st = st + v.st;

return s;

}

void display()

{

cout << st << endl;

}

};

int main()

{

str s1("hello"), s2(" world");

str s3 = s1 + s2;

s1.display();

s2.display();

s3.display();

system("pause");

}

3. Apply concept of function overloading to calculate area of circle and rectangle. Explain how function

overloading will help in this case.

#include<iostream>

#define pi 3.14

using namespace std;

class shape

{

public:

float area(int rad)

{

return pi \* rad\*rad;

}

float area(int len, int bregth)

{

return len \* bregth;

}

};

int main()

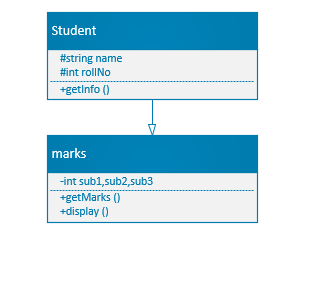
{

shape fig;

cout <<"circle"<< fig.area(9)<<endl;

cout <<"rect"<< fig.area(3, 5)<<endl;

system("pause");

}

4. Give an example case that apply concept of single level inheritance. Make class diagram to justify your case.

#include<iostream>

#include<string>

using namespace std;

class student

{

protected:

int rollNo;

string name;

public:

student(int rn=0,string n=""):rollNo(rn),name(n)

{}

void getInfo()

{

cout << "enter name";

cin >> name;

cout << "enter roll no";

cin >> rollNo;

}

};

class marks : public student

{

private:

int sub1, sub2, sub3;

public:

marks(int s1=0,int s2=0,int s3=0): sub1(s1),sub2(s2),sub3(s3)

{}

void getMarks()

{

getInfo();

cout << "enter marks for subject one";

cin >> sub1;

cout << "enter marks for subject two";

cin >> sub2;

cout << "enter marks for subject three";

cin >> sub3;

}

void display()

{

cout << "name" << name << endl;

cout << "roll no" << rollNo << endl;

cout << "marks one" << sub1 << endl;

cout << "marks two" << sub2 << endl;

cout << "marks three" << sub3 << endl;

cout << "total: " << sub1 + sub2 + sub3 << endl;

cout << "percentage: " << (sub1 + sub2 + sub3) / 3 << endl;

}

};

int main()

{

marks st1;

st1.getMarks();

st1.display();

system("pause");

}

5. Make an employee class that comprises an integer for storing the employee number and float for

employee’s compensation. Member function should allow the user to enter this data and display it. Main

function should allow user to enter data for three employees and display it.

#include<iostream>

using namespace std;

class Employee

{

private:

int empNo;

float empCompensation;

public:

Employee(int no=0, float compensation=0):empNo(no),empCompensation(compensation)

{}

void getInfo()

{

cout << "enter employee number";

cin >> empNo;

cout << "enter employee compensation";

cin >> empCompensation;

}

void display()

{

cout << "employee number: " << empNo << endl;

cout << "employee compensation: " << empCompensation << endl;

}

};

int main()

{

Employee emp1, emp2, emp3;

emp1.getInfo();

emp1.display();

emp2.getInfo();

emp2.display();

emp3.getInfo();

emp3.display();

system("pause");

}