

AMERICAN INTERNATIONAL UNIVERSITY BANGLADESH
FACULTY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE
C++ PROBLEMS

1. Write a C Program to Store Information (ID and marks) of five Students Using Structure and find out the average mark of these class.

Sample I/O:

```
Enter the ID of student: 1
Enter marks of student: 20
Enter the ID of student: 2
Enter marks of student: 22
Enter the ID of student: 3
Enter marks of student: 12
Enter the ID of student: 4
Enter marks of student: 16
Enter the ID of student: 5
Enter marks of student: 21
```

Average mark: 18.2

2. Write a C Program to Add Two Complex Numbers using structure.

```
struct complex
```

```
{
```

```
    float real;
```

```
    float imaginary;
```

```
};
```

```
int main()
```

```
{
```

```
    struct complex n1, n2;
```

```
    struct complex temp;
```

```
    // take input of n1 and n2 and keep the summation in temp
```

```
}
```

Sample Input	Sample Output
Enter the real part of first complex number: 1 Enter the imaginary part of first complex number: 2 Enter the real part of first complex number: 2 Enter the imaginary part of first complex number: 3	Output: 3.00+5.00i

3. Create a Class called box which will have three private variables (length, height and width of the box) and public methods to do the following works:
 - i. setvalues(): This method will ask for the user inputs for height, width and length of the box
 - ii. area(): this method will calculate the area of the box
 - iii. getarea(): this method will return the area to the main function

```
class box{
float height, length, width;
public:
void setvalues( );
void area( );
float getarea( );
};
```

4. A line consists of two points. The length is given by:

$$\sqrt{(x1 - x2)^2 + (y1 - y2)^2}$$

Create a class of line and ask the user to give the co-ordinates of the line and find the distance of the two points.

```
class line{
double x1, y1, x2, y2;
public:
void setvalues(double a, double b, double c, double d);
double length();
};
```