Lab 3

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Question1:

Code:

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

int getArea(int x){
   return x * x;
}
int getArea(int x, int y){
   return x * y;
}
double getArea(double x){
   return 3.14 * x * x;
}
int main(){
   int side, length, breadth;
   double radius;
   cout << "Enter side of square : ";
   cin >> side;
   cout << "Enter length and breadth of rectangle : ";
   cin >> length >> breadth;
   cout << "Enter radius of circle : ";
   cin >> radius;
   cout << "Area of square : " << getArea(side) << endl;
   cout << "Area of rectangle : " << getArea(length, breadth) << endl;
   cout << "Area of circle : " << getArea(radius) << endl;
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs> cd "c:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4\" ; if ($?) { g++ 1.cpp -o 1 } ; if ($?) { .\1 }
Enter side of square : 13
Enter length and breadth of rectangle : 20 15
Enter radius of circle : 5
Area of square : 169
Area of rectangle : 300
Area of circle : 78.5
PS C:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4>
```

Question2:

Code:

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

class Sample
{
   float area;
   public:
   Sample(){
      area = 0;
   }
   Sample(int a, int b){
      cout << "Enter Lenght and breadth of rectangle : ";
      cin >> a >> b;
      area  = a * b;
   }
   Sample(int a){
      cout << "Enter side of square : ";
      cin >> a;
      area = a * a;

   }
   void show(){
      cout << area << endl;
   }
};

int main(){
   int a,b,c;
   Sample c1;
   Sample c2(a, b);
   Sample c3(c);
   cout << "The area : ";
   c1.show();
   cout << "The area of rectangle : ";
   c2.show();
   cout << "The area of square : ";
   c3.show();
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs> cd "c:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4\" ; if ($?) { g++ 2.cpp -o 2 } ; if ($?) { .\2 }
Enter Lenght and breadth of rectangle : 20 15
Enter side of square : 13
The area : 0
The area of rectangle : 300
The area of square : 169
PS C:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4>
```

Question3:
Code:

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

class Student{
   string name;
   public:
   Student(){
      name = "Unknown";
   }
   Student(string s){
      cout << "Enter a name  : ";
      cin >> s;
      name = s;
   }
   void show(){
      cout <<  "Name of Student : "  << name << endl;
   }
};

int main(){
   string a, b;
   Student s1(a);
   Student s2;
   Student s3(b);
   s1.show();
   s2.show();
   s3.show();
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4> cd "c:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4\" ; if ($?) { g++ 3.cpp -o 3 } ; if ($?) { .\3 }
Enter a name  : Manoj
Enter a name  : Hello
Name of Student : Manoj
Name of Student : Unknown
Name of Student : Hello
PS C:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4>
```

Question4:
Code:

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

class Sample{
   int *p, odd = 0, even = 0;
   public:
   Sample(){
      p = new int[5];
      cout << "Enter elements of array : ";
      for(int i = 0; i < 5; i++){
         cin >> p[i];
         if(p[i] % 2 == 0){
            even++;
         }
         else{
            odd++;
         }
      }
   }
   void show(){
      cout << "Number of even numbers : " << even << endl;
      cout << "Number of odd numbers : " << odd << endl;
   }
   ~Sample(){
      delete [] p;
      cout << "Destructor done";
   }
};

int main(){
   Sample s1;
   s1.show();
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4> cd "c:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4\" ; if ($?) { g++ 4.cpp -o 4 } ; if ($?) { .\4 }
Enter elements of array : 11 22 33 44 55
Number of even numbers : 2
Number of odd numbers : 3
Destructor done
PS C:\Users\DELL\OneDrive\Desktop\Labs\DSA LAB\LAB 4>
```