

BITS Pilani Hyderabad Campus

1st Semester 2023-24 (BITS F232: FDSD) Lab sheet 1

Practice the following programs:

Q.1 Input/ Output:

```
1  #include <cstdlib>
2  #include <iostream>
3  int main( ) {
4  int x , y;
5  std::cout << "Please enter two numbers: ";
6  std::cin >> x >> y;
7  int sum = x + y;
8  std::cout << "Sum = " << sum << std::endl;
9  return EXIT_SUCCESS;
10 }
```

Please enter two numbers: 34 67
Sum = 101

Q.2 Arrays and functions:

```
1  #include <cstdlib>
2  #include <iostream>
3  using namespace std;
4  bool testSum (int a[ ], int n );
5
6  int main( ) {
7  int a [ 6 ] = {4, 4, 7, 5, 5, 2};
8  bool result = testSum (a, 6);
9
10  if (result)
11  cout << "Sum of all the nos. is even\n";
12  else
13  cout << " Sum of all the nos. is odd\n";
14  return EXIT_SUCCESS;
15  }
16
17  bool testSum ( int a[ ], int n) {
18  int sum = 0;
19  for ( int i = 0 ; i < n ; i++ ) sum += a[ i ];
20  return (sum % 2 ) == 0;
21  }
```

Sum of all the nos. is odd

Q.3 Public access modifiers in C++

```
main.cpp
1  #include<iostream>
2  using namespace std;
3
4  class Circle
5  {
6      public:
7          double radius;
8
9          double compute_area()
10         {
11             return 3.14*radius*radius;
12         }
13
14 };
15
16 int main()
17 {
18     Circle obj;
19
20     obj.radius = 7.2;
21
22     cout << "Radius is: " << obj.radius << "\n";
23     cout << "Area is: " << obj.compute_area();
24     return 0;
25 }
```

Radius is: 7.2
Area is: 162.778

...Program finished with exit code 0
Press ENTER to exit console.

Task:

Modify this program to print additionally the circumference of the circle. Also, add another class that can compute the area and circumference of a rectangle. Make it a menu driven program where the user can choose either one (circle or rectangle) to work with.

Q.4 Private access modifiers in C++

```
main.cpp
2  using namespace std;
3
4  class Circle
5  {
6      private:
7          double radius;
8      public:
9          void compute_area(double r)
10         {
11             radius = r;
12
13             double area = 3.14*radius*radius;
14
15             cout << "Radius is: " << radius << endl;
16             cout << "Area is: " << area;
17         }
18
19 };
20
21 int main()
22 {
23     Circle obj;
24
25     obj.compute_area(7.2);
26
27
28     return 0;
29 }
```

```
Radius is: 7.2
Area is: 162.778

...Program finished with exit code 0
Press ENTER to exit console.
```

Task: Write a program by creating an 'Employee' class having the following functions and print the final salary.

- 1: getInfo() which takes the salary, number of hours of work per day of employee as parameters
- 2: AddSal() which adds Rs.2000 to the salary of the employee if it is less than Rs.30000.
- 3: AddWork() which adds Rs. 100 to the salary of the employee if the number of hours of work per day is more than 8 hours.

Refs: cplusplus.com/doc/tutorial/
