

Assignment 1.

Q1. Write a program to define an enumerated data type Month with name of 12 months. Assign the first month as 1 and display the integer value assigned to the months.

```
#include <iostream>

using namespace std;

int main()
{
    enum Month
    {
        jan = 1,
        feb,
        march,
        april,
        may,
        june,
        july,
        aug,
        sept,
        oct,
        nov,
        dec
    };

    Month month;

    month = jan;
    cout << month << endl;

    month = feb;
    cout << month << endl;

    month = march;
    cout << month << endl;

    month = april;
    cout << month << endl;

    month = may;
    cout << month << endl;
```

```
month = june;
cout << month << endl;

month = july;
cout << month << endl;

month = aug;
cout << month << endl;

month = sept;
cout << month << endl;

month = oct;
cout << month << endl;

month = nov;
cout << month << endl;

month = dec;
cout << month << endl;

return 1;
}
```

Q2. Write a program using inline function to calculate the square of a number.

```
#include <iostream>

using namespace std;

inline int square(int a)
{
    return a * a;
}

int main()
{

    int num;
    cout << "Enter a number : ";
    cin >> num;
```

```
int result = square(num);
cout << "Square of " << num << "is " << result;

return 1;
}
```

Q3. Write a program to calculate volume of a cube. (vol=side*side*side)

```
#include <iostream>

using namespace std;

inline int volumeOfCube(int side)
{
    return side * side * side;
}

int main()
{
    int side;
    cout << "Enter a side of cube : ";
    cin >> side;

    int result = volumeOfCube(side);
    cout << "Volume of cube having side " << side << "is " << result;

    return 1;
}
```

Q4. Write a program using inline functions to calculate the multiplication and division of two user input numbers.

```
#include <iostream>

using namespace std;

inline float multiplication(float num1, float num2)
{
    return num1 * num2;
}
```

```
inline float divison(float num1, float num2)
{
    return num1 / num2;
}

int main()
{
    float num1, num2;
    cout << "Enter two numbers : ";
    cin >> num1 >> num2;

    cout << "Multiplication is : " << multiplication(num1, num2) << " and Division is : " <<
    divison(num1, num2);

    return 1;
}
```

Q5. Write a program to calculate simple interest using default value of $r=1.5\%$. Ask the user for principal amount and time $[SI=PTR/100]$

```
#include <iostream>

#define RATE 1.5
using namespace std;

int main()
{
    float principal, time;

    cout << "Enter Principal and Time : ";
    cin >> principal >> time;

    cout << "Simple Interest is " << (principal * time * RATE) / 100;

    return 1;
}
```

Q6. Write a program to find maximum of 2 numbers and maximum of 3 numbers using same function name, maximum().

```
#include <iostream>

using namespace std;

void maximum(int a, int b)
{
    (a > b) ? cout << a << " is maximum" : cout << b << " is maximum";
}

void maximum(int a, int b, int c)
{
    if (a > b && a > c)
        cout << a << " is maximum";
    else if (b > a && b > c)
        cout << b << " is maximum";
    else
        cout << c << " is maximum";
}

int main()
{
    maximum(1, 2);
    maximum(1, 2, 3);
    return 1;
}
```

Q7. Write a program to find the volume of 3 objects: cube, cylinder and Rectangular box using same function name, volume().

```
#include <iostream>

using namespace std;

#define PI 3.14

double volume(double length) //Volume of Cube
{
```

```
    return length * length * length;
}

double volume(double radius, double height) //Volume of Cylinder
{
    return PI * radius * radius * height;
}

double volume(double length, double breadth, double height) // Volume of Rectangular Box
{
    return length * breadth * height;
}

int main()
{
    cout << "Volume of cube : " << volume(12) << endl;
    cout << "Volume of Cylinder : " << volume(1, 10) << endl;
    cout << "Volume of Rectangular Box : " << volume(1, 2, 3);
    return 1;
}
```

Q8. Write a program to find the area of cube, cylinder and rectangle using concept of function overloading

```
#include <iostream>

using namespace std;

#define PI 3.14

double area(double length) //Area of Cube
{
    return 6 * length * length;
}

double area(double radius, int height) //Area of Cylinder
{
    return 2 * PI * radius * height;
}

double area(double length, double breadth) // Area of Rectangle
{
    return length * breadth;
}
```

```
}

int main()
{
    cout << "Area of cube : " << area(12) << endl;
    cout << "Area of Cylinder : " << area(1, 10) << endl;
    cout << "Area of Rectangular Box : " << area(10, 20);
    return 1;
}
```

Q9. Write and test the following computeSphere() function that returns the volume “v” and surface area “s” of a sphere with the given radius.

void computeSphere(float &v, float &s, float r)

```
#include <iostream>
```

```
using namespace std;
```

```
void computeSphere(float &v, float &s, float r)
```

```
{
    v = 4 / 3 * 3.14 * r * r * r;
    s = 4 * 3.14 * r * r;
}
```

```
int main()
```

```
{
    float volume, surfaceArea, radius;
    cout << "Enter radius of Sphere : ";
    cin >> radius;

    computeSphere(volume, surfaceArea, radius);

    cout << "Volume of Sphere : " << volume << endl
        << "Surface Area of Sphere : " << surfaceArea << endl;
    return 1;
}
```