

PROGRAMMING LANGUAGES 1

Conditional Statements



IF STATEMENT

Perform certain action if condition is true

```
if (condition)  
    statement;
```

AREA OF CIRCLE

```
int main()
{
    double r;
    cout << "Enter radius: ";
    cin >> r;
    if(r < 0) {
        cout << "Error: radius cannot be negative";
        return -1; // Return error code (not 0)
    }
    cout << 3.14 * r * r;
}
```

IF ELSE

Perform certain action if condition is true. Otherwise, perform another action

```
If (condition)
    statement 1;
else
    statement 2;
```

PRINT MAX

```
int main()
{
    int x, y;
    cout << "Enter two numbers: ";
    cin >> x >> y;
    if(x > y)          // if x is greater than y
        cout << x;    // then, print x
    else                // otherwise (y >= x),
        cout << y;    // print y
}
```

IF ELSE-IF ELSE

```
If(condition 1)
    statement 1;
else if(condition 2)
    statement 2;
:
else
    statement n;
```

AREA OF SHAPES

```
int main()
{
    char shape; double area;
    cout << "Select your shape [(c)ircle, (r)ectangle, (s)quare]:";
    cin >> shape;
```

AREA OF SHAPES

```
if(shape == 'c' || shape == 'C') {  
    // User selected circle  
    double r;  
    cout << "Enter radius: ";  
    cin >> r;  
    area = 3.14 * r * r;  
}
```

AREA OF SHAPES

```
else if (shape == 'r' || shape == 'R') {  
    // User selected rectangle  
    double w, l;  
    cout << "Enter width & length: ";  
    cin >> w >> l;  
    area = l * w;  
}
```

AREA OF SHAPES

```
else if (shape == 's' || shape == 'S') {  
    // User selected square  
    double l;  
    cout << "Enter side length: ";  
    cin >> l;  
    area = l * l;  
}
```

AREA OF SHAPES

```
    else {  
        // User entered wrong selection  
        cerr << "Error: Selection not valid";  
        return -1; // error code returned (not 0)  
    }  
    cout << " Area: " << area << endl;  
    return 0;  
}
```

SWITCH STATEMENT

```
switch (variable)
{
    case value1 : // if (variable == value1)
        statement 1;
        break;
    case value2 : // if (variable == value2)
        statement 2;
        break;
    ;
    default:
}
```

AREA OF SHAPES - REVISITED

```
int main()
{
    char shape; double area;
    cout << "Select your shape [(c)ircle, (r)ectangle, (s)quare]:";
    cin >> shape;
```

AREA OF SHAPES

```
switch(shape) {  
    case 'c':  
    case 'C':  
        // User selected circle  
        double r;  
        cout << "Enter radius: ";  
        cin >> r;  
        area = 3.14 * r * r;  
        break;    // End of case
```

AREA OF SHAPES

```
case 'r':  
case 'R':  
    // User selected rectangle  
    double w, l;  
    cout << "Enter width & length: ";  
    cin >> w >> l;  
    area = l * w;  
    break;
```

AREA OF SHAPES

```
case 's':  
case 'S':  
    // User selected square  
    double l;  
    cout << "Enter side length: ";  
    cin >> l;  
    area = l * l;  
    break;
```

AREA OF SHAPES

```
    default:
        // User entered wrong selection
        cerr << "Error: Selection not valid";
        return -1; // error code
    } // End of switch statement
    cout << " Area: " << area << endl;
    return 0;
} // End of main function
```

SUMMARY

- If statement
- Switch statement