Data Types

byte	8 bits	0
short	16 bits	0
int	32 bits	0
long	64 bits	0L
boolean	bit	false
char	16 bit unicode	x
float	32 bit decimal	0.0f
double	64 bit decimal	0.0d

(='w')/

```
Array : collection of values
String : immutable, arranged set of
characters
Class : Blueprint of the object
Java Script : public class Main{
                        public
static void main(string[] args){
                    }
            }
```

\(='w'=)/

```
byte[ -128 to 128 ][-2^7 to 2^7 -1]
```
byte[-128 to 128] $[-2^7$ to $2^7-1]$
short[-2^{15} to $2^{15}-1]$
int[-2^{31} to $2^{31}-1]$
long[-2^{63} to $2^{63}-1]$

Algorithm

```
An algorithm (pronounced AL-go-
rith-um) is a procedure or formula
for solving a problem.
Just like you have a recipe to cook
food that has step-by-step
instructions, in programming you
have an algorithm that has step-
by-step instructions.
Examples:
Sorting Algorithm
Swap Algorithm
Search Algorithm
Simple Algorithm to swap the values
of two variables.
Examples:
```

Algorithm (cont)

```
  int a = 4;
  int b = 3;
  int temp = a; //back up the value
of a
  a = b;
  b = temp;
Simple Algorithm to swap the values
of two items in a list.
Examples:
 public static void swap(int[]
list, int e1, int e2){
        int temp = list[e1];
        list[e1] = list[e2];
        list[e2] = temp;
 }
```

Decision Making

```
(if/else)
An if statement can be followed by
an optional else statement, which
executes when the Boolean
expression is false.
Examples:
if(Boolean_expression 1){
   //Executes when the Boolean
expression 1 is true
}else if(Boolean_expression 2){
   //Executes when the Boolean
expression 2 is true
}else if(Boolean_expression 3){
   //Executes when the Boolean
expression 3 is true
}else {
   //Executes when the none of the
above conditions is true.
}
(Switch)
A switch statement allows a
variable to be tested for equality
against a list of values. Each
value is called a case, and the
variable being switched on is
checked for each case.
```

Decision Making (cont)

```
Examples:
switch(expression){
    case value :
        //Statements
        break; //optional
    case value :
        //Statements
        break; //optional
    //You can have any number of
case statements.
    default : //Optional
        //Statements
}
```

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