Switch Calculator 1

```
switch(n){
    case 10:
        System.out.println((a+b));
        break;
    case 20:
        System.out.println((a-b));
        break;
    case 30:
        System.out.println((a*b));
        break;
    case 40:
        if(b != 0){
        System.out.println((a%b));
        }
        else{
            System.out.println("Error: Integer modulo by zero");
        }
        break;
    case 50:
        if(b != 0){
        System.out.println((a/b));
        }
        else{
            System.out.println("Error: Division by zero");
        }
        break;
    default:
        System.out.println("Enter a valid number");
        break;
}
```

N = 50

a = 5

b = 0

switch(50)

n=10 , n=20 , n=30

n = 40

n = 50

if (0 != 0)F

[0==0]

0/0 → error

```
switch(n)
  case 1:
     Syso("Monday");
        break;

  case 2:
     Syso("Tuesday");
  .
  :

case 7:
     Syso("Sunday");
        break;
```

Characters (char)

→ 'a', '1', 'D', '%', ' '

→ Surrounded by ' '

→ char ch = 'a';

(String) Strings

→ collection of characters.

→ Surrounded by " ";

→ String s = "Raja";

→ In-built function

String s = "Mansi Sharma";
0 1 2 3 4 5 6 7 8 9 10 11

Indexing always starts from 0.

length = 12

s.length(); → function to find length.

int len = s.length(); → 11|12

String str = " Jyotirmay ";

0 1 2 3 4 5 6 7 8

char ch = str.charAt(index);

str name

str.charAt(0) → J

charAt(8) → y

(2) → ' '

s.charAt(5) → 'o'

str.charAt(12) → error [index out of bound]

```java
class HelloWorld {
    public static void main(String[] args) {
        String s = "Mansi Sharma";
        String str = "Jyotirmay";

        int len = s.length();
        int len2 = str.length();
      //  char ch = str.charAt(6);

        System.out.println(len);
        System.out.println(len2);

        System.out.println(str.charAt(6));
        System.out.println(str.charAt(0));
        System.out.println(str.charAt(8));
        System.out.println(s.charAt(5));
        System.out.println(s.charAt(11));
        System.out.println(str.charAt(15));
    }
}
```

Output

Clear

```
java -cp /tmp/IhB6dwCKaB/HelloWorld
12
9
m
J
y

a
ERROR!
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String
    index out of range: 15
    at java.base/java.lang.StringLatin1.charAt(StringLatin1.java:47)
    at java.base/java.lang.String.charAt(String.java:693)
    at HelloWorld.main(HelloWorld.java:21)

=== Code Exited With Errors ===
```

Characters

char ch = S.next().charAt(0);

Strings

"Ranveer Singh"
① ②

1) String str = S.next(); → // Ranveer

2) String str = S.nextLine(); → // Ranveer Singh.

next() → one word

nextLine() → line

next()

```
// Use this editor to write, compile and run yo
import java.util.Scanner;

class HelloWorld {
    public static void main(String[] args) {

        Scanner s = new Scanner(System.in);
       // String str = s.next();
        String str1 = s.nextLine();

       // System.out.println(str);
        System.out.println(str1);
    }
}
```

```
Output

java -cp /tmp/08No
ranveer singh
ranveer
```

nextLine()

```
Output

java -cp /tmp/1qG6V
ranveer singh
ranveer singh
```

Male or Female

```
Scanner s = new Scanner(System.in);
char ch = s.next().charAt(0);

if(ch == 'M' || ch == 'm'){
    System.out.println("You are a male");
}
else if(ch == 'F' || ch == 'f'){
    System.out.println("You are a female");
}
else{
    System.out.println("Type again");
}
```

ASCII values → unique id assigned to each character.

'A' → 65 'a' → 97

'B' → 66 'b' → 98

'C' → 67 'c' → 99

⋮ ⋮

'Z' → 90 'z' → 122

```
if (A > B){
        ||
}
```

65 > 66 F

return false;

```
cook@pop-os:~$ ascii -d
   0 NUL     16 DLE     32        48 0     64 @     80 P     96 `    112 p
   1 SOH     17 DC1     33 !      49 1     65 A     81 Q     97 a    113 q
   2 STX     18 DC2     34 "      50 2     66 B     82 R     98 b    114 r
   3 ETX     19 DC3     35 #      51 3     67 C     83 S     99 c    115 s
   4 EOT     20 DC4     36 $      52 4     68 D     84 T    100 d    116 t
   5 ENQ     21 NAK     37 %      53 5     69 E     85 U    101 e    117 u
   6 ACK     22 SYN     38 &      54 6     70 F     86 V    102 f    118 v
   7 BEL     23 ETB     39 '      55 7     71 G     87 W    103 g    119 w
   8 BS      24 CAN     40 (      56 8     72 H     88 X    104 h    120 x
   9 HT      25 EM      41 )      57 9     73 I     89 Y    105 i    121 y
  10 LF      26 SUB     42 *      58 :     74 J     90 Z    106 j    122 z
  11 VT      27 ESC     43 +      59 ;     75 K     91 [    107 k    123 {
  12 FF      28 FS      44 ,      60 <     76 L     92 \    108 l    124 |
  13 CR      29 GS      45 -      61 =     77 M     93 ]    109 m    125 }
  14 SO      30 RS      46 .      62 >     78 N     94 ^    110 n    126 ~
  15 SI      31 US      47 /      63 ?     79 O     95 _    111 o    127 DEL
```

Type Casting/conversion → converting one data type to another data type

```
char ch = 'a';
int i = 2;
```

```
int a = (int x char)
      = (2 x 'a') → 2a ✗
```

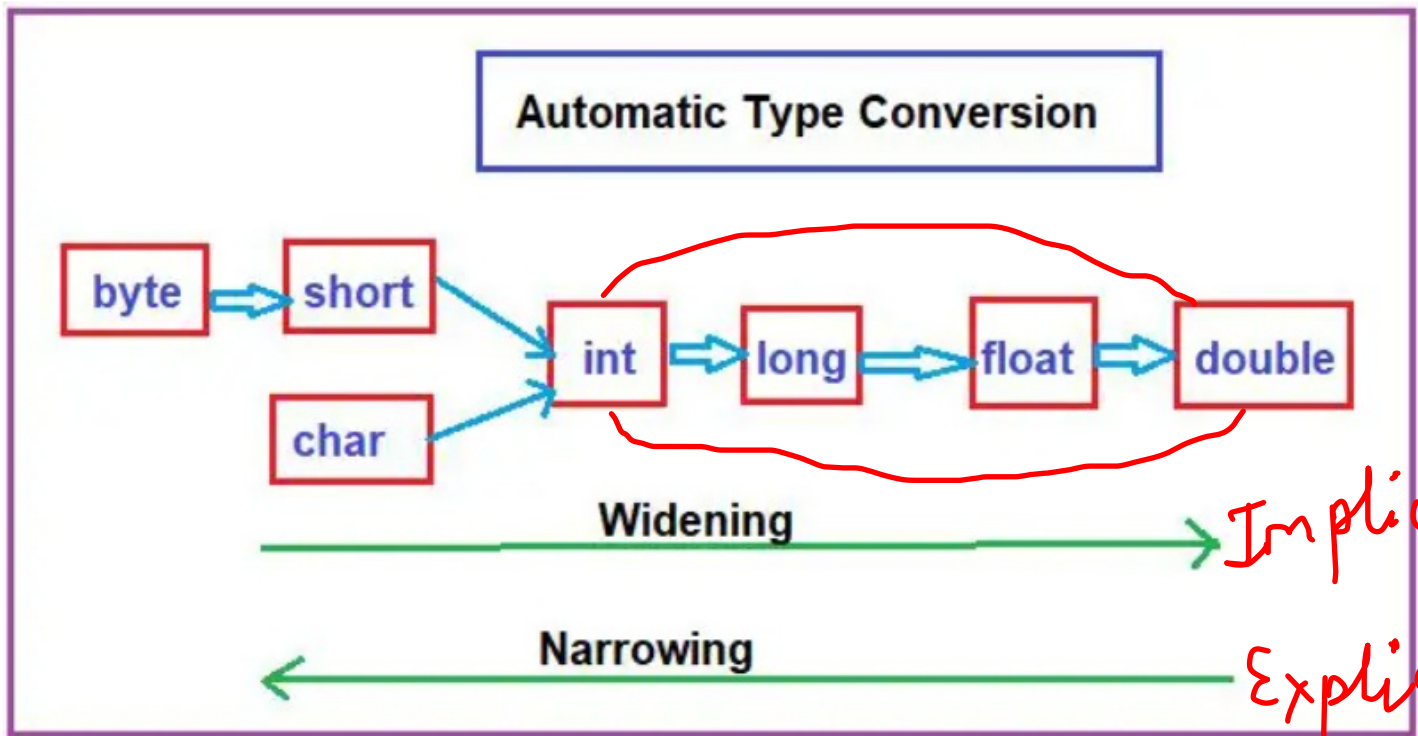
→ Implicit → automatic conversion

→ Explicit → forced conversion (done by us)

```
char ch = 'd';
int i = 2;
```

- `int n = (ch + i)` ⇒ `('d' + 2)` → I

`char c = (char) (ch + i)` → E



Implicit

Explicit

Small to high → implicit conversion (automatic)

high to small → explicit (by self).

```java
int a = 100;
long b = a; //100
float c = b; //100

System.out.println(a);  //100
System.out.println(b);  //100
System.out.println(c); //100.0
}
```

```
Output

java -cp /tmp/22na
100
100
100.0

=== Code Execution
```

→ Implicit

```
ERROR!
/tmp/ITYzwsfqOx/HelloWorld.java:9: error: incompatible types: possible lossy
    conversion from double to long
```

→ error if wrong conversion

```java
double a = 100.0;  //100.0
long b = (long) a; //100.0
int c = (int) b; //100.0

System.out.println(a);
System.out.println(b);
System.out.println(c);
}
```

```
Output

java -cp /tmp/x
100.0
100
100

=== Code Execut
```

→ explicit