

Conditionals

Syntax

```
if ( /* condition */ ) {
```

```
    // block of if
```

```
    {  
    else {
```

```
    }
```

```
if ( /* condition */ ) {
```

```
    // block of if
```

```
    {  
    elseif ( /* condition */ ) {
```

```
    {  
    else {
```

```
}
```

pf () {

}

pf () {

}

pf () {

}

Q1 WAP to check whether a number is even or odd.

Method 1: → very costly

If $(n \% 2 == 0)$ → even
else → odd

Good S/W⁴

Method 2:

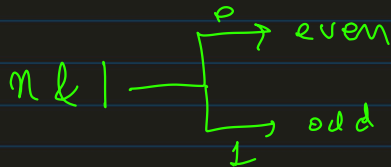
$()_{10}$	$()_2$
0	0 0 0
1	0 0 1
2	0 1 0
3	0 1 1
4	1 0 0

$10 \rightarrow 1010$ ← 0 → even
1 → odd

$10 \& 1 \rightarrow$
↓
0
even

1010
↓
0000 → 0

$$7 \& 1 \rightarrow \begin{array}{r} 111 \\ 4001 \\ \hline 001 \end{array} \rightarrow (1)$$



$\text{if}(n \& 1) \rightarrow \text{odd}$
 $\text{else} \rightarrow \text{even}$

$\left(\text{if}(n \& 1 == 0) \{ \right.$
 $\quad \text{even}$
 $\quad \text{else odd}$

Q2 WAP to take a number from user & print day corresponding to it

1 } → Monday
⋮ }
7 } → Sunday

else → Invalid day

12:55

```
if (day == 1) {  
    cout << "MONDAY" << endl;  
}  
else if (day == 2) {  
    cout << "TUESDAY" << endl;  
}  
else if (day == 3) {  
    cout << "WEDNESDAY" << endl;  
}  
else if (day == 4) {  
    cout << "THURSDAY" << endl;  
}  
else if (day == 5) {  
    cout << "FRIDAY" << endl;  
}  
else if (day == 6) {  
    cout << "SATURDAY" << endl;  
}  
else if (day == 7) {  
    cout << "SUNDAY" << endl;  
}  
else {  
    cout << "INVALID DAY";  
}  
}
```

→ We are matching a variable with different values.

In such cases, where we have to compare variable value with either a numeric value / character value, then we can use **switch statement**

```
switch (day) {
```

```
    case 1: {
```

```
    }
```

```
    case 2: {
```

```
    }
```

```
    :
```

```
    case 7: {
```

```
    }
```

```
    default: {
```

```
    }
```



```
switch (day) {
case 1: {
    cout << "Monday" << endl;
    break;
}
case 2: {
    cout << "Tuesday" << endl;
    break;
}
case 3: {
    cout << "Wednesday" << endl;
    break;
}
case 4: {
    cout << "Thursday" << endl;
    break;
}
case 5: {
    cout << "Friday" << endl;
    break;
}
case 6: {
    cout << "Saturday" << endl;
    break;
}
case 7: {
    cout << "Sunday" << endl;
    break;
}
default : {
    cout << "Invalid day" << endl;
    break;
}
}
```


Q3 WAP to take character as input & check wheather it is a digit, uppercase alphabet, lowercase alphabet, special character

0
:
:
:
9
→ digit

A
B
:
:
:
Z
→ U

a
b
:
:
:
z
→ L

|
9 ← m → special

ASCII value & their corresponding decimal value

0	NUL	16	DLE	32	SPC	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

char ch;
cin >> ch;

if (ch >= 48 && ch <= 57) {
 → digit

}
else if (ch >= 65 && ch <= 90) {
 U

}
else if (ch >= 97 && ch <= 122) {
 L

}
else → sc

```
if (ch >= '0' and ch <= '9') {  
    cout << "Digit" << endl;  
}  
else if (ch >= 'A' and ch <= 'Z') {  
    cout << "Upper Case Alphabet" << endl;  
}  
else if (ch >= 'a' and ch <= 'z') {  
    cout << "Lower Case Alphabet" << endl;  
}  
else {  
    cout << "Special Character" << endl;  
}
```