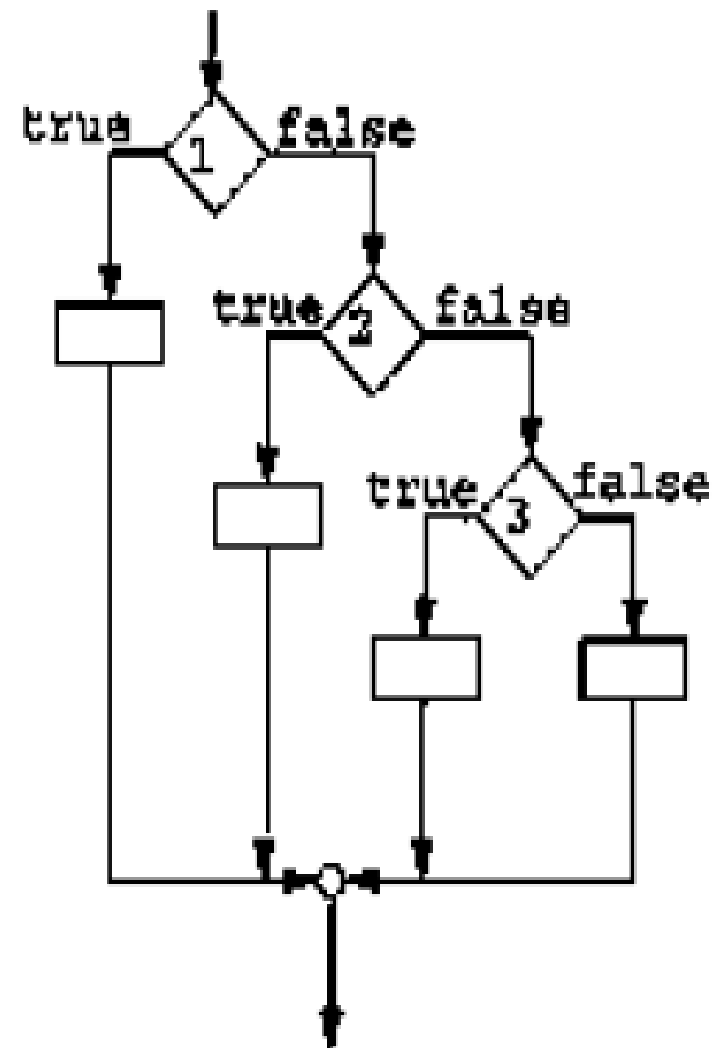


CSE 1201 "Structured Programming Language"

Decision Making and Branching

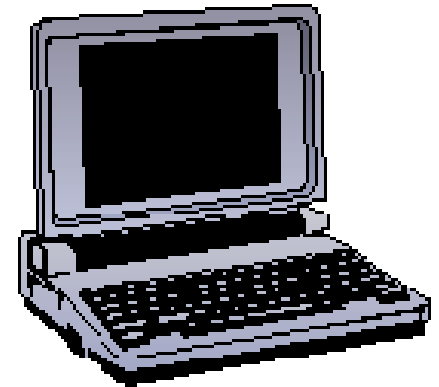
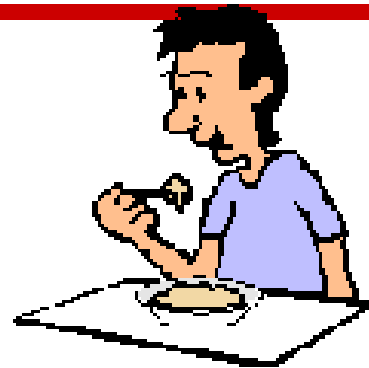
If-else-if statement

```
if (condition 1 satisfied){  
    <do Q>  
}  
else if (condition 2 satisfied){  
    <do R>  
}  
else if (condition 3 satisfied){  
    <do S>  
}  
else{  
    <do T>  
}
```



If-else-if

```
if <1PM or 6PM>{  
  <eat>  
}  
else if <Tuesday or Friday>{  
  <study structured programming>  
}  
else{  
  <sleep>  
}
```



Example 5.5

An electric power distribution company charges its domestic consumers as follows:

<i>Consumption Units</i>	<i>Rate of Charge</i>
0 - 200	Rs. 0.50 per unit
201 - 400	Rs. 100 plus Rs.0.65 per unit excess of 200
401 - 600	Rs. 230 plus Rs.0.80 per unit excess of 400
601 and above	Rs. 390 plus Rs.1.00 per unit excess of 600

The program in Fig.5.10 reads the customer number and power consumed and prints the amount to be paid by the customer.

Program

```

main()
{
    int units, custnum;
    float charges;

    printf("Enter CUSTOMER NO. and UNITS consumed\n");
    scanf("%d %d", &custnum, &units);
    if (units <= 200)
        charges = 0.5 * units;
    else if (units <= 400)
        charges = 100 + 0.65 * (units - 200);
    else if (units <= 600)
        charges = 230 + 0.8 * (units - 400);
    else
        charges = 390 + (units - 600);

    printf("\n\nCustomer No: %d: Charges = %.2f\n",
        custnum, charges);
}

```

Output

Enter CUSTOMER NO. and UNITS consumed 101 150

Customer No:101 Charges = 75.00

Enter CUSTOMER NO. and UNITS consumed 202 225

Customer No:202 Charges = 116.25

Enter CUSTOMER NO. and UNITS consumed 303 375

Customer No:303 Charges = 213.75

Enter CUSTOMER NO. and UNITS consumed 404 520

Customer No:404 Charges = 326.00

Enter CUSTOMER NO. and UNITS consumed 505 625

Customer No:505 Charges = 415.00

Fig. 5.10 Illustration of else..if ladder

The Calculator

```
1      #include<stdio.h>
2
3      int main()
4      {
5      char op;
6
7      int x=1,y=2;
8
9      scanf ("%c",&op) ;
10
11     if (op =='+')
12
13     printf ("x+y= %d",x+y) ;
14
15     else if (op=='-')
16
17     printf ("x-y=%d",x-y) ;
18
19     else printf ("invalid operator") ;
20
21     }
```

Nested if Statements

- Nested means that one complete statement is inside another

```
if <condition 1 exists>{  
    if <condition 2 exists>{  
        if <condition 3 exists>{  
            <do A>  
        }  
        <do B>  
    }  
    <do C>  
}
```

Nested if Example

```
if (member)
{
    if (age < 18)
    {
        fee = fee * 0.5;
    }
    if (age >=18)
        fee = fee * 0.8;
}
```

```
if (member)
{
    if (age < 18)
    {
        fee = fee * 0.5;
    }
}
if (age >=18)
    fee = fee * 0.8;
```