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Conditional Statements / A Selection Structure using IF

Session 5

A Selection Structure the if statement

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```
if ( condition )  
{  
    statement(s)  
}
```

Example:

```
if ( value == 0 )  
{  
    printf ("The value you entered was zero\n");  
}
```



```
if ( condition )  
{  
    statement(s)    /* the if clause */  
}  
else  
{  
    statement(s)    /* the else clause */  
}
```

Example of if - else

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```
if ( value == 0 )
{
    printf ("The value you entered was zero\n");
}
else
{
    printf ("You didn't enter a zero\n");
}
```



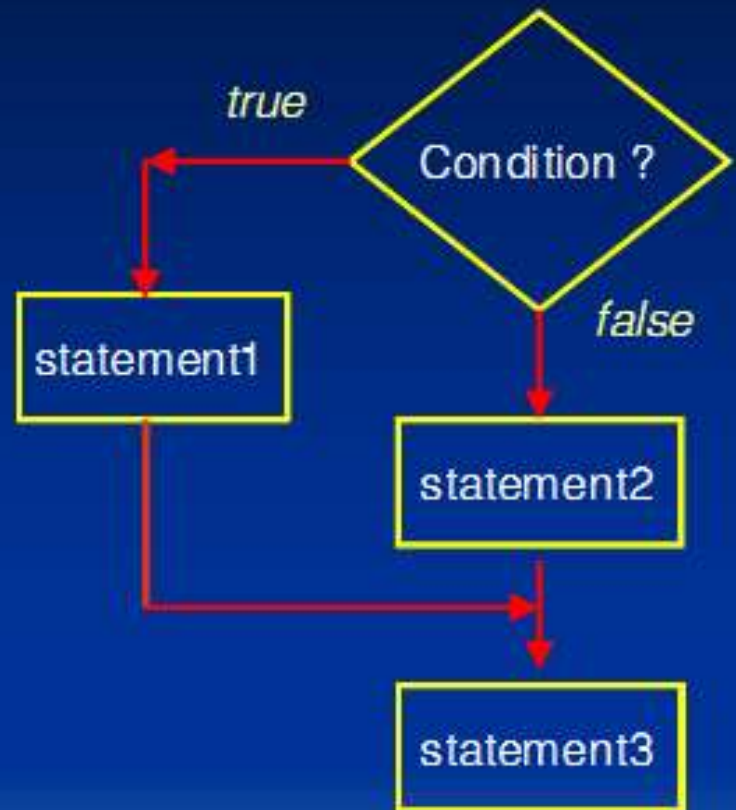
```
if (condition)
{
    statement(s)
}
else if (condition) /* there may be multiple */
{ /* else if clauses */
    statement(s)
}
else
{
    statement(s)
}
```

if Statements

```
if (Condition)
{
    statement(s);
}
```

Example:

```
if (i > 0)
{
    printf("i = %d ", i);
}
```



Caution

Adding a semicolon at the end of an `if` clause is a common mistake.

```
if ( radius >= 0 ); —— Wrong
{
    area = radius*radius*PI;
    printf ("The area for the circle
of radius %d is =%d", radius, area);
}
```

This mistake is hard to find, because it is neither a compilation error nor a runtime error, it is a logic error. This error often occurs when you use the next-line block style.



```
if ( value == 0 )
{
    printf ("The value you entered was zero\n");
}
else if ( value < 0 )
{
    printf ("%d is negative.\n", value);
}
else
{
    printf ("%d is positive.\n", value);
}
```


Gotcha - The common error of using = when we really want ==



```
int a = 2;

if (a == 1)
{
    printf ("a is one\n");
}
else if (a == 2)
{
    printf ("a is two\n");
}
else
{
    printf ("The value of a is %d\n", a);
}
```

Multiple Alternative if Statements

```
if (score >= 90)
    grade = 'A';
else
    if (score >= 80)
        grade = 'B';
    else
        if (score >= 70)
            grade = 'C';
        else
            if (score >= 60)
                grade = 'D';
            else
                grade = 'F';
```

```
if (score >= 90)
    grade = 'A';
else if (score >= 80)
    grade = 'B';
else if (score >= 70)
    grade = 'C';
else if (score >= 60)
    grade = 'D';
else
    grade = 'F';
```

Exercise 4.1

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```
1. /* Program contoh penerapan struktur
   kondisi if */
2.
3. #include<stdio.h>
4. #include<conio.h>
5. void main()
6. { clrscr();
7.   int a,b,c,max;
8.   printf("Entry bil 1 : ");
   fflush(stdin);scanf("%i",&a);
9.   printf("Entry bil 2 : ");
   fflush(stdin);scanf("%i",&b);
10.  printf("Entry bil 3 : ");
   fflush(stdin);scanf("%i",&c);
11.  if((a>b)&&(a>c))
12.     max=a;
13.  if((b>a)&&(b>c))
14.     max=b;
15.  if((c>a)&&(c>b))
16.     max=c;
17.
18.  printf("Bil terbesar : %i\n",max);
19.
20.  if(max>0)
21.     printf("Bil tsb adalah bil
   positif\n");
22.  if(max<0)
23.     printf("Bil tsb adalah bil
   negatif\n");
24.  getch();
25. }
```

Exercise 4.2

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```
1.  #include <stdio.h>
2.  #include <conio.h>
3.  void main()
4.  {   float nilai;
5.      clrscr();
6.      printf("Masukan nilai yang didapat : ");
7.      scanf("%f", &nilai); /* Masukan akan disimpan dlm var. nilai */
8.      if (nilai > 65)
9.      {
10.         printf("\n LULUS !!!\n");
11.     }
12.     else
13.     {
14.         printf("\n TIDAK LULUS !!!\n");
15.     }
16.     getch();
17. }
```

- ❖ Write a program to enter the shopping transactions and calculate discount shopping.

Input Data : Product Code, Item Name, Unit, Total Purchase, Purchase Price

Data Output : Total Price, Discount, Total Pay

Process:

1. Total Price = Amount x Price
2. Discount is only given if the total price of more than 100000 which is 10% of the total price if not then discount is 0%.
3. Total Pay = Total Price - Discounts

Sample Display Results

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MINI MARKET "SERBA ADA"

Product Code :
Product Name :
Unit :
Amount :
Purchase Price :

Total Price :
Discounts :

Total Pay :
