Control Structures

1. Sequential
2. Selective

if statement

simple if

if (<condition>){

<statements>

}

if... else

if (<condition>){

<statements>

}

else{

<statements>

}

Nested if

if (<condition1>){

<statements1>

if (<condition2>){

<statements2>

}

else{

<statements3>

}

}

else{

<statements4>

}

else if ...

if (<condition1>){

<statements1>

}

else if (<condition2>){

<statements2>

}

else {

<statements3>

}

switch statement

1. Iterative (Looping)

#include <stdio.h>

int main()

{

printf("%7d\n", 12);

printf("%7d\n", 123);

printf("%7d\n", 1);

printf("%7d\n", 122345);

printf("%7d\n", 1267843456);

return 0;

}

#include <stdio.h>

int main(){

char product\_name[20];

int quantity;

float price, discount=0, bill\_amount, net\_amount;

printf("Product Name : ");

scanf("%s", product\_name);

printf("Price : ");

scanf("%f", &price);

printf("Quantity : ");

scanf("%d", &quantity);

bill\_amount = price \* quantity;

if (bill\_amount >= 5000)

discount = bill\_amount \* 15 / 100; // bill\_amount \* 0.15

net\_amount = bill\_amount - discount;

printf("\nBill Amount : %10.2f\n", bill\_amount);

printf("Discount(-) : %10.2f\n", discount);

printf(" ============\n");

printf(" %10.2f\n", net\_amount);

printf(" ============\n");

return 0;

}

/\*

Bill Amount : 10000.00

Discount(-) : 1500.00

==========

8500.00

==========

printf("%10.2f\n", 123.0);

printf("%10.2f\n", 12345.0);

printf("%10.2f\n", 10.0);

----------

123.00

12345.00

10.00

\*/

#include <stdio.h>

//Grade Calculator

int main(){

float score;

scanf("%f", &score);

if ( score >=0 && score <= 10){

if (score >= 9)

printf("Grade \"O\"");

else if (score >= 8)

printf("Grade \"A\"");

else if (score >= 7)

printf("Grade \"B\"");

else if (score >= 6)

printf("Grade \"C\"");

else if (score >= 5)

printf("Grade \"D\"");

else

printf("\"No\" Grade");

}

else

printf("Invalid Score!");

return 0;

}

/\*

score

9 to 10 ==> Grade "O"

8 to 8.99 ==> Grade "A"

7 to 7.99 ==> Grade "B"

6 to 6.99 ==> Grade "C"

5 to 5.99 ==> Grade "D"

<5 ==> "No" Grade

Escape sequence characters

\" ==> print "

\' ==> print '

\\ ==> print \

\n ==> new line

\t ==> tab

\v ==> vertical tab

\b ==> backspace

\r ==> carriage return

\*/

#include <stdio.h>

int main()

{

int x = 10;

if ( x = 10)

printf("Shivani is sooo cute!");

else;

printf("Anvitha is sooo cute!");

return 0;

}

#include <stdio.h>

int main()

{

int x = 10;

if ( x = 0);

printf("Shivani is sooo cute!");

printf("Anvitha is sooo cute!");

return 0;

}

#include <stdio.h>

int main(){

int x = 10;

if ( x == 0){

printf("Shivani is sooo cute!");

printf("Anvitha is sooo cute!");

}

else

printf("You are all engineers!");

return 0;

}

#include <stdio.h>

#include <math.h>

int main(){

float op1, op2, result;

char opr;

scanf("%f %c %f", &op1, &opr, &op2);

switch(opr){

case '+': // if ( opr =='+')

result = op1 + op2; break;

case '-': // if ( opr =='+')

result = op1 - op2; break;

case '\*': case 'x': case 'X': // if ( opr =='+')

result = op1 \* op2; break;

case '/': // if ( opr =='+')

result = op1 / op2; break;

case '%': // if ( opr =='+')

result = fmod(op1, op2); break;

default:

printf("Invalid Operation");

return 0;

}

printf("%g %c %g = %g", op1, opr, op2, result);

return 0;

}

/\*

switch(<expression>){

case <value1>:

<statements>

break;

case <start\_range> ... <end\_range>:

<statements>

break;

case <value2>:

<statements>

break;

...

...

case <valueN>:

<statements>

break;

default:

<statements>

}

INput :

10 + 5

Output

10 + 5 = 15

\*/