Day05.C

Structured Programming (2)
Conditions and Loops

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1   Conditional Statements

1.1   relational operators

```
:::::::::::::::
t1.c
:::::::::::::::
#include <stdio.h>

int main(void) {
    int a =10;
    float x =3.14;

    printf(" a = %d \n", a);
    printf("(a > 1) = %d \n", (a>1) );
    printf("(a < 1) = %d \n", (a<1) );

    printf(" x = %f \n", x);
    printf("(x > 1) = %d \n", (x>1) );
    printf("(x < 1) = %d \n", (x<1) );

    if (0) printf("0 is true \n");
    else   printf("0 is false \n");

    if (1) printf("1 is true \n");
    else   printf("1 is false \n");

    if (-999) printf("-999 is true \n");
    else   printf("-999 is false \n");

    if (3.14999) printf("3.14999 is true \n");
    else      printf("3.14999 is false \n");

}


:::::::::::::::
t1.out
:::::::::::::::
 a = 10
(a > 1) = 1
(a < 1) = 0
 x = 3.140000
(x > 1) = 1
(x < 1) = 0
0 is false
1 is true
-999 is true
3.14999 is true
```

2 Loop Statements

2.1 for, while, do...while

```
:::::::::::::::
t2.c
:::::::::::::::
#include <stdio.h>

int main(void) {
  int i, S;


  S= 0;
  for (i=0; i<10; ++i) {
   S += (i+1);
   printf("i=%d S=%d \n", i,S);
  }
  printf("1. **** S=%d \n", S);




  S=0;
  i=0;
  while (i<10) {
   i++;
   S += i;
   printf("i=%d S=%d \n", i,S);
  }
  printf("2. **** S=%d \n", S);



  S=0;
  i=0;
  do { i++;
   S += i;
   printf("i=%d S=%d \n", i,S);
  } while (i<10);
  printf("3. **** S=%d \n", S);


   printf("--------------------\n");

  S= 0;
  for (i=1; i<=10; ++i) {
   S += i;
   printf("i=%d S=%d \n", i,S);
  }
  printf("4. **** S=%d \n", S);
```

```
  S=0;
  i=1;
  while (i<=10) {
   S += i;
   printf("i=%d S=%d \n", i,S);
   i++;
  }
  printf("5. **** S=%d \n", S);



  S=0;
  i=1;
  do {
   S += i;
   printf("i=%d S=%d \n", i,S);
   i++;
  } while (i<=10);
  printf("6. **** S=%d \n", S);

}

::::::::::::::
t2.out
::::::::::::::
i=0 S=1
i=1 S=3
i=2 S=6
i=3 S=10
i=4 S=15
i=5 S=21
i=6 S=28
i=7 S=36
i=8 S=45
i=9 S=55
1. **** S=55
i=1 S=1
i=2 S=3
i=3 S=6
i=4 S=10
i=5 S=15
i=6 S=21
i=7 S=28
i=8 S=36
i=9 S=45
i=10 S=55
```

```
2. **** S=55
i=1 S=1
i=2 S=3
i=3 S=6
i=4 S=10
i=5 S=15
i=6 S=21
i=7 S=28
i=8 S=36
i=9 S=45
i=10 S=55
3. **** S=55
--------------------
i=1 S=1
i=2 S=3
i=3 S=6
i=4 S=10
i=5 S=15
i=6 S=21
i=7 S=28
i=8 S=36
i=9 S=45
i=10 S=55
4. **** S=55
i=1 S=1
i=2 S=3
i=3 S=6
i=4 S=10
i=5 S=15
i=6 S=21
i=7 S=28
i=8 S=36
i=9 S=45
i=10 S=55
5. **** S=55
i=1 S=1
i=2 S=3
i=3 S=6
i=4 S=10
i=5 S=15
i=6 S=21
i=7 S=28
i=8 S=36
i=9 S=45
i=10 S=55
6. **** S=55
```