

HIGH-LEVEL PROGRAMMING I

do-while loop

by Prasanna Ghali

Pretest Loops: `while` and `for` Statements

2

- `while` and `for` statements called *pretest* loops because statement executed only if loop condition is true

```
int i = 0;
while (i <= 20) {
    printf("%d ", i);
    i += 5;
}
```

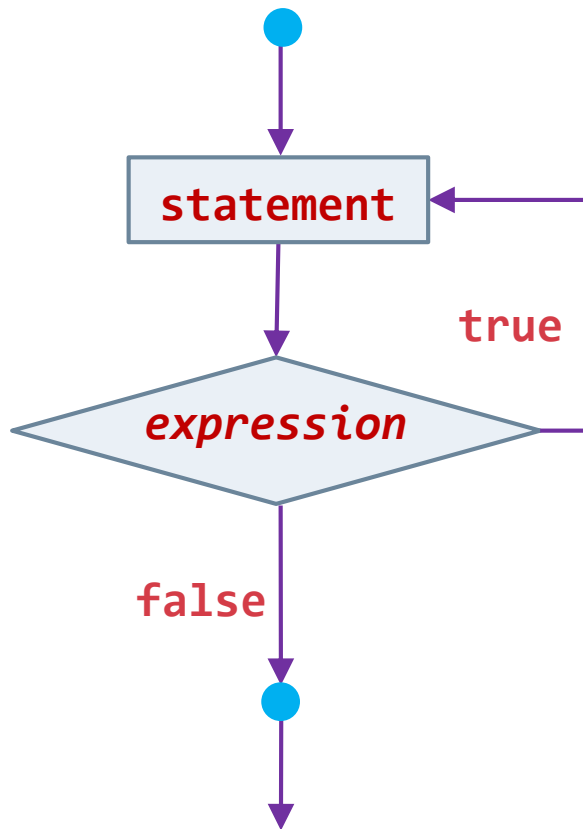
output

0 5 10 15 20

```
for (int i = 0; i <= 20; i += 5) {
    printf("%d ", i);
}
```

do...while Loop Structure

3

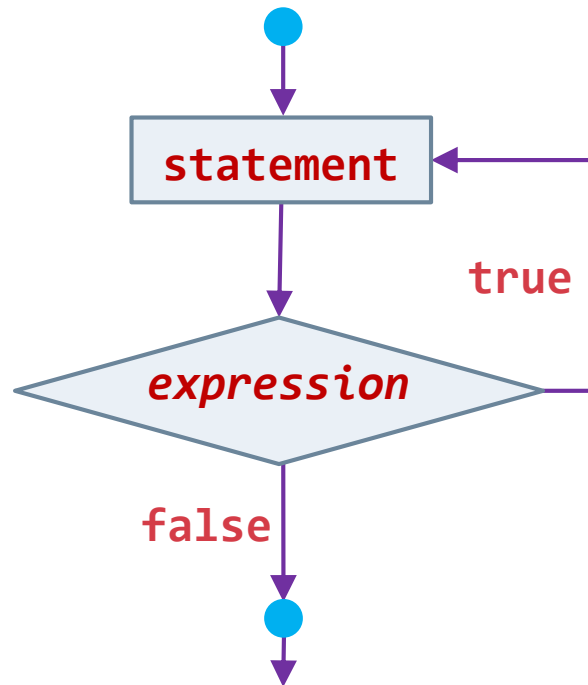


- Called *posttest* loop because condition evaluated *after* executing loop body
- Useful in scenarios where **statement** must be executed *at least once*

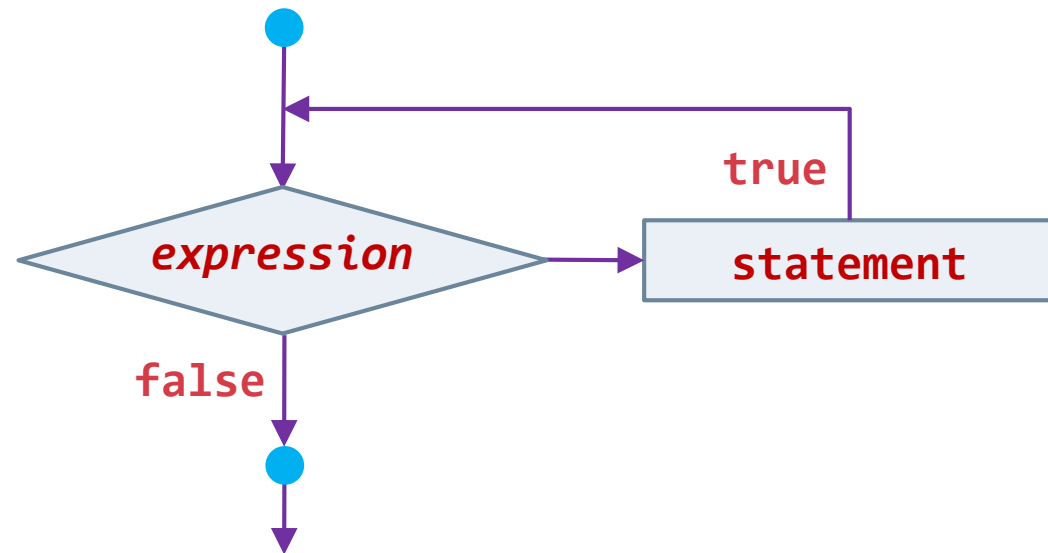
```
do  
    statement  
while(expression);
```

do...while and while:

Comparison



```
do  
    statement  
while(expression);
```



```
while(expression)  
    statement
```

do...while Loop Structure:

Example 1

5

```
int i = 0;
while (i <= 20) {
    printf("%d ", i);
    i += 5;
}
```

```
int i = 0;
do {
    printf("%d ", i);
    i += 5;
} while (i <= 20);
```

0 5 10 15 20

```
for (int i = 0; i <= 20; i += 5) {
    printf("%d ", i);
}
```

do...while Loop Structure:

Example 2

6

```
int i = 11;
while (i <= 10) {
    printf("%d ", i);
    i += 5;
}
```



```
int i = 11;
do {
    printf("%d ", i);
    i += 5;
} while (i <= 10);
```



do...while Loop Structure:

Example 3

7

- do...while is often used for input validation
- Here, user required to enter a number between 30 and 60

```
int score = 0;
do {
    printf("Enter value between 30 and 60: ");
    scanf("%d", &score);
} while (score < 30 || score > 60);
// guaranteed that score is between 30 and 60
```

do...while Loop Structure:

Example 4

8

- do...while is often used for input validation
- Here, user required to enter lowercase Latin character

```
char ch = '\0';  
do {  
    printf("Enter lowercase Latin character: ");  
    scanf("%c%c", &ch);  
} while (ch < 'a' || ch > 'z');  
// guaranteed that ch is between 'a' and 'z'
```