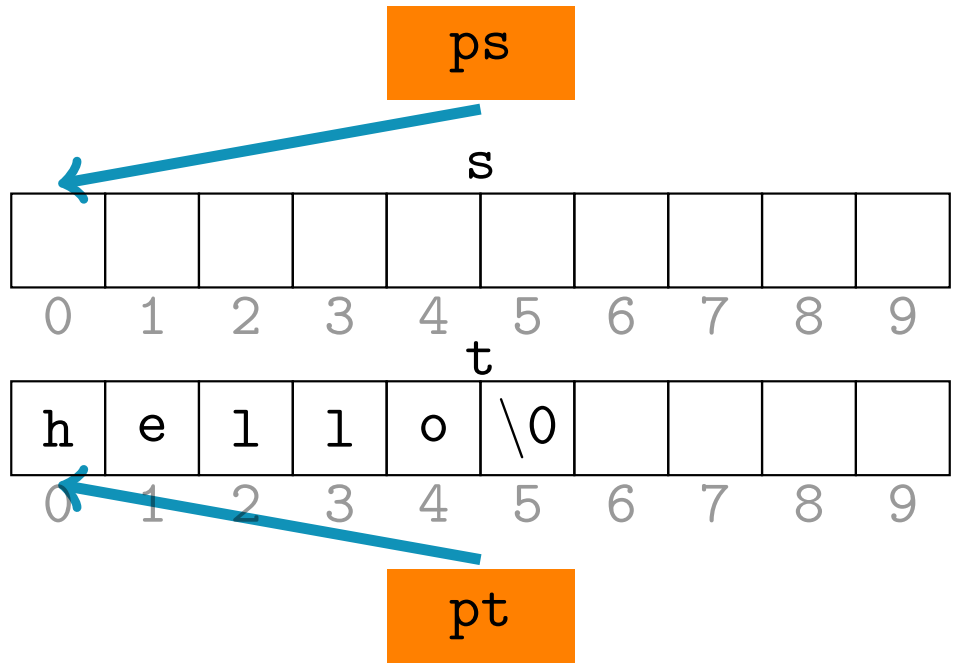
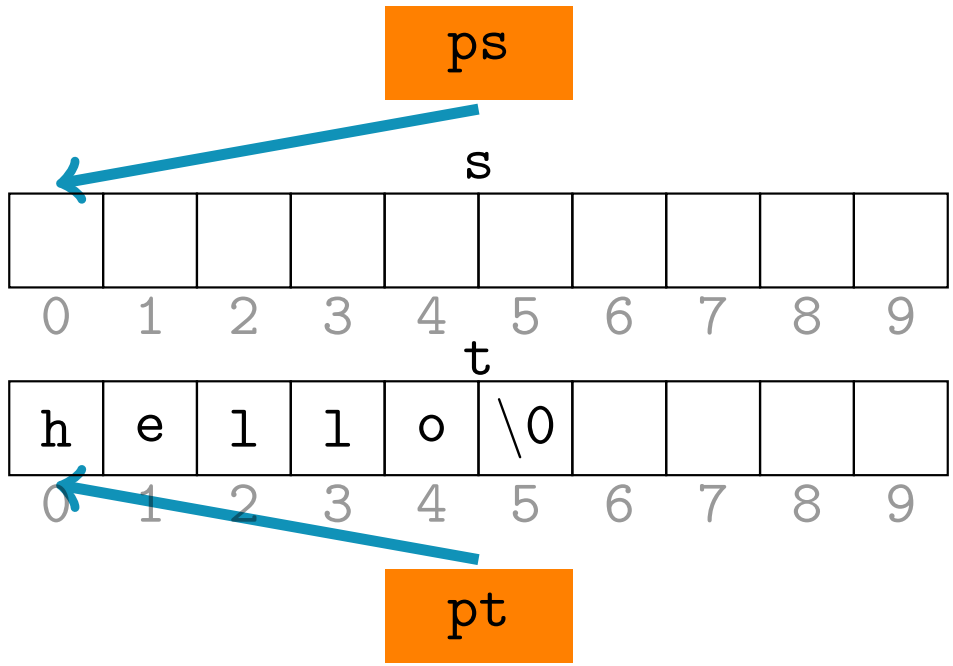
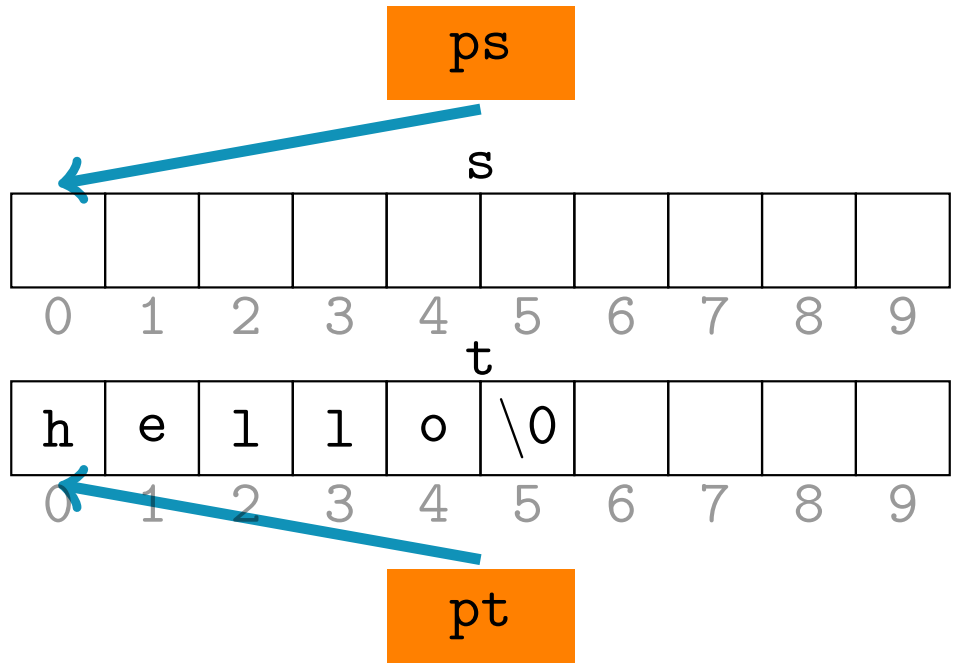
```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt */
while (*ps++ = *pt++);
```



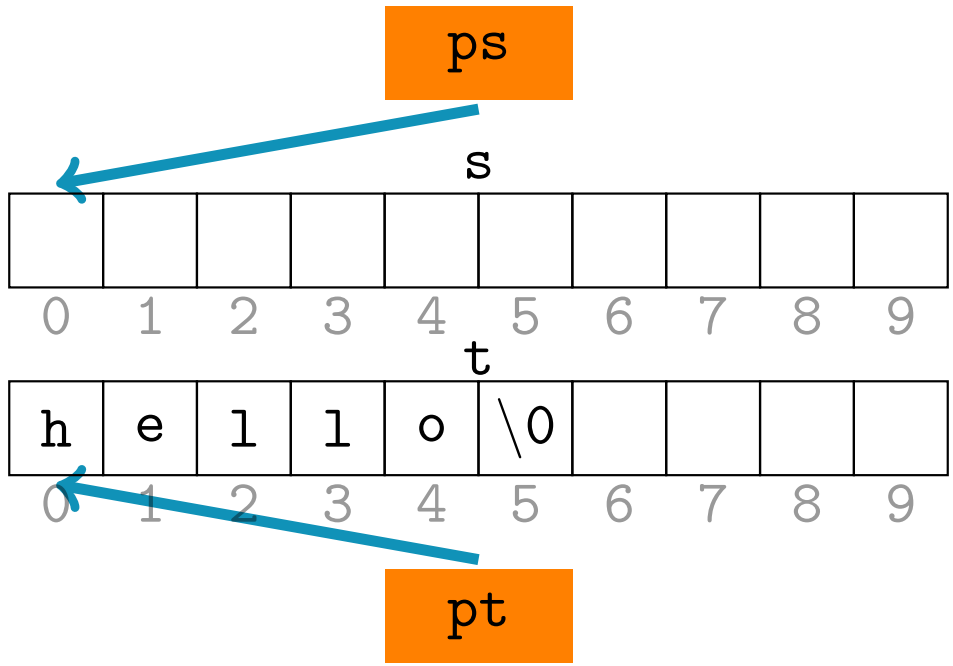
```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++ */
while (*ps++ = *pt++);
```



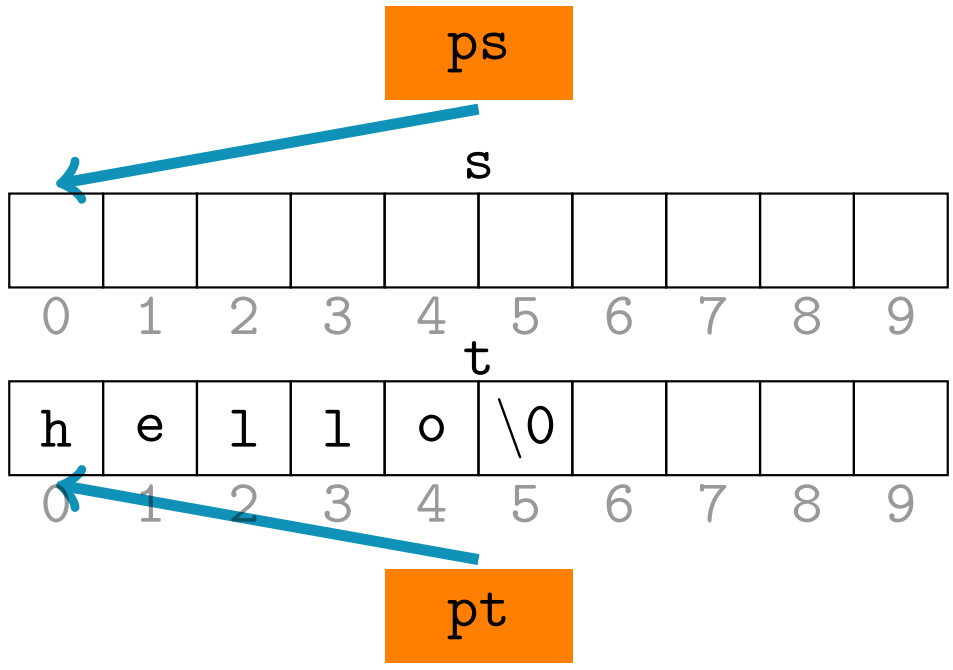
```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++ */
while (*ps++ = *pt++);
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition?  */
while (*ps++ = *pt++);
```

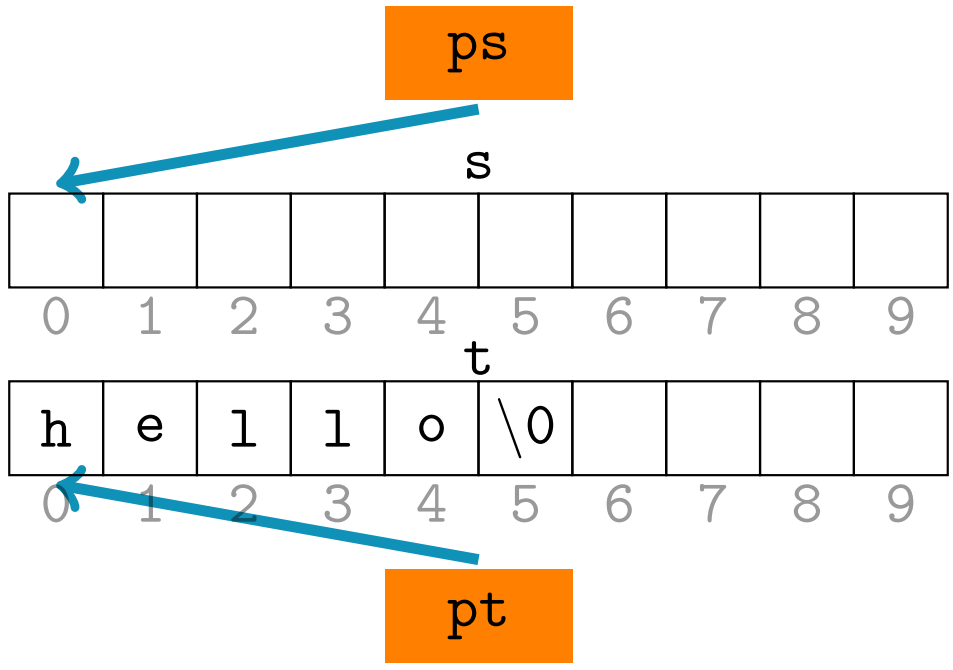


```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



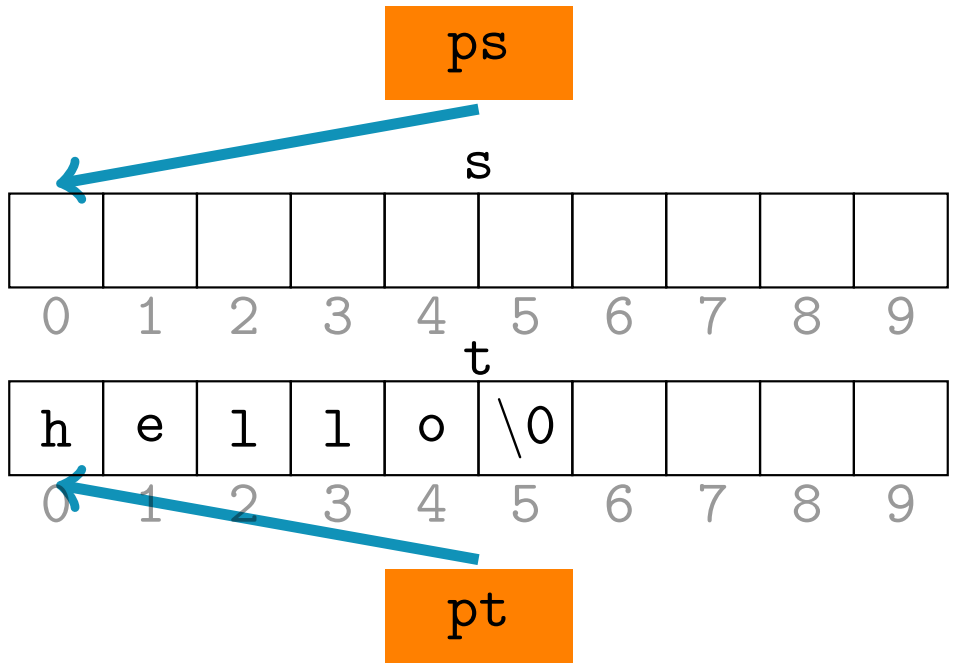

```
int a, b;
```

```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



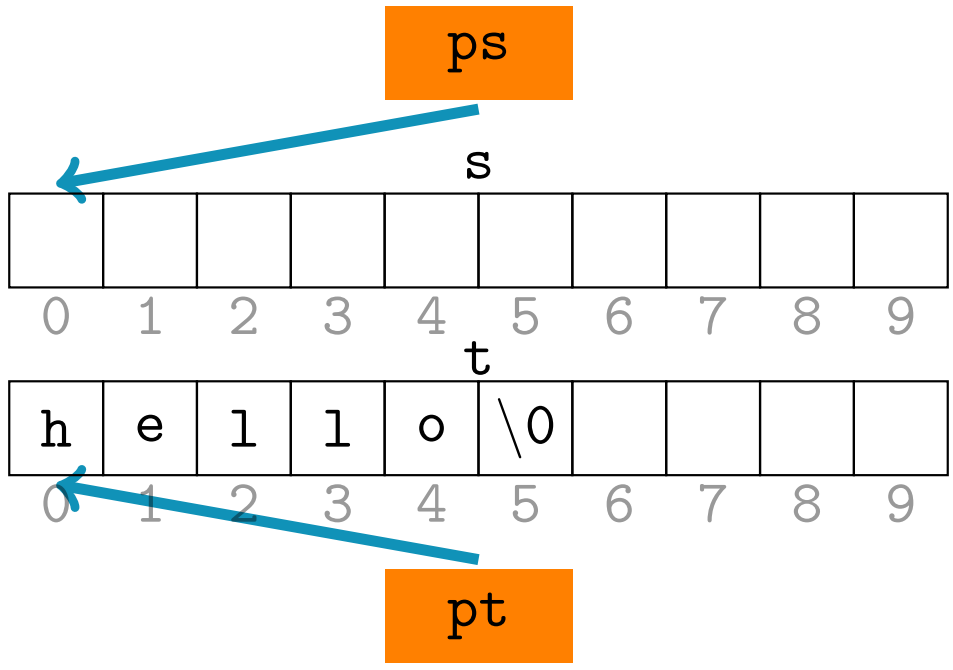

```
int a, b;
b = 10;
```

```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



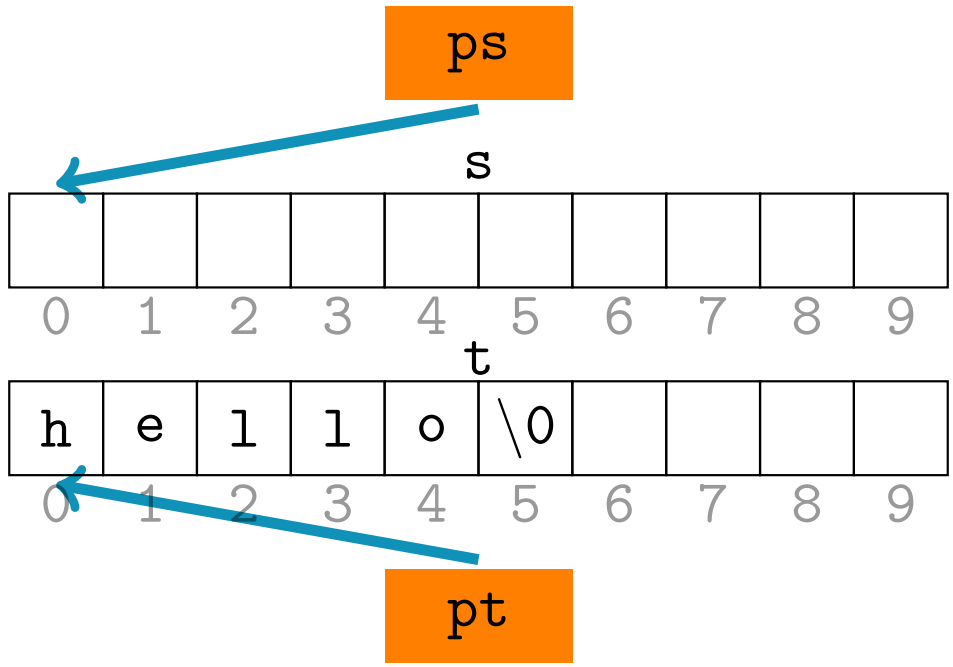

```
int a, b;
b = 10;
printf("%d", a = b);
```

```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```

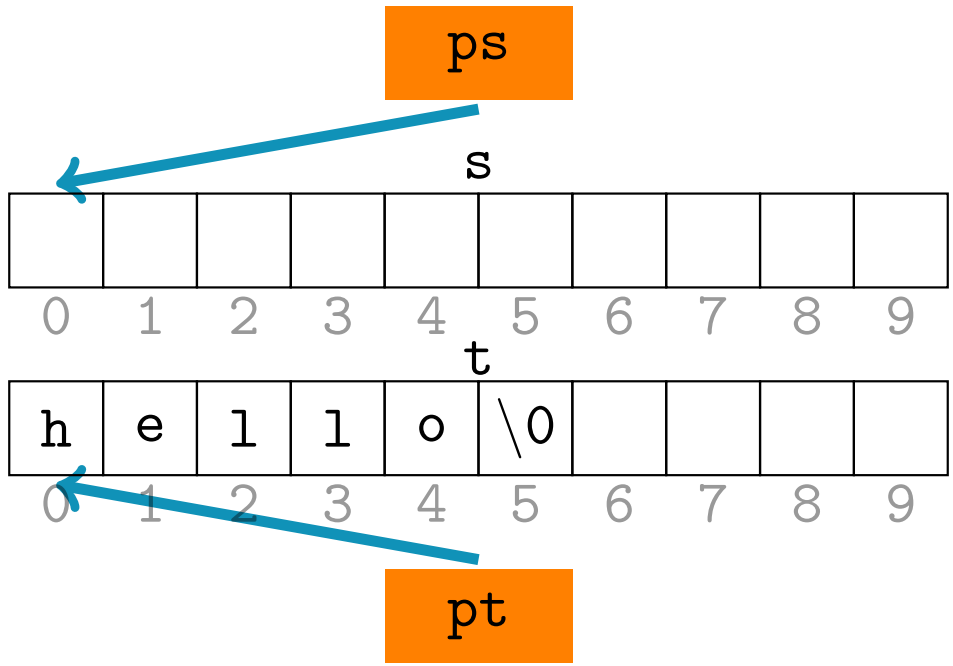



```
int a, b;
b = 10;
printf("%d", a = b); → 10
```

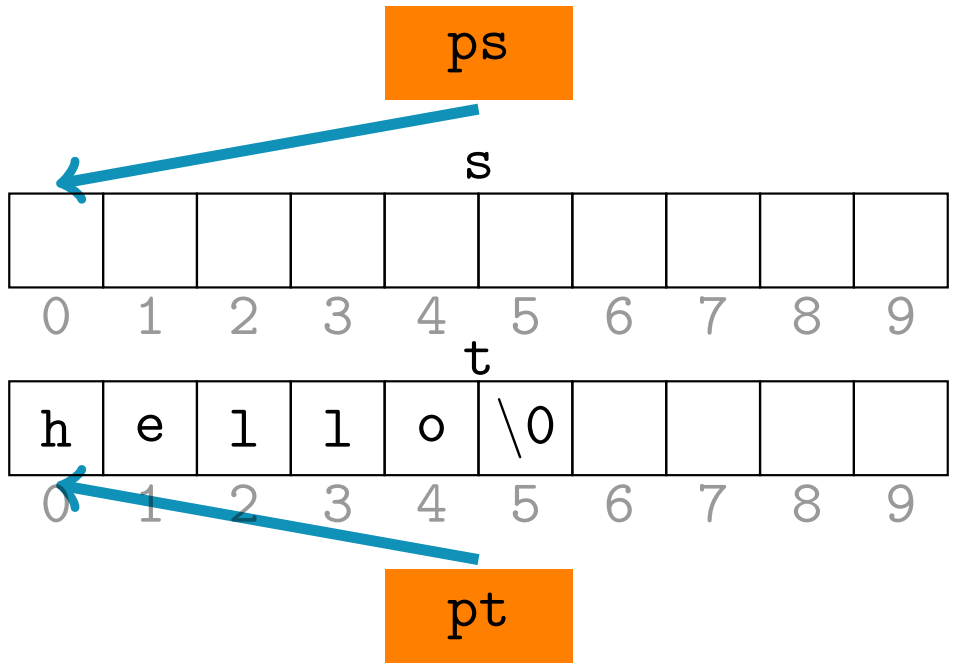
```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



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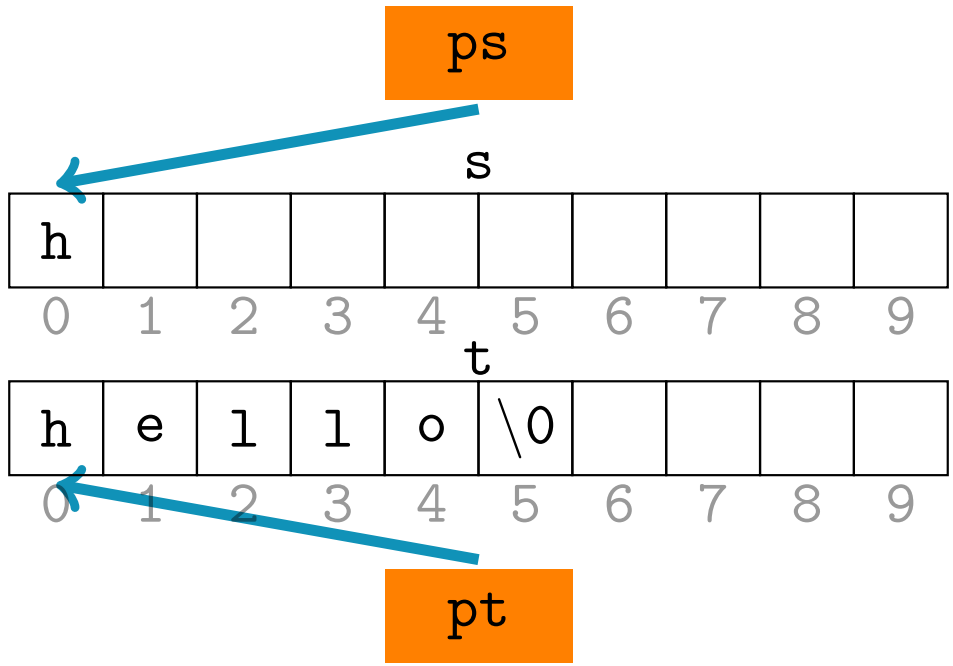
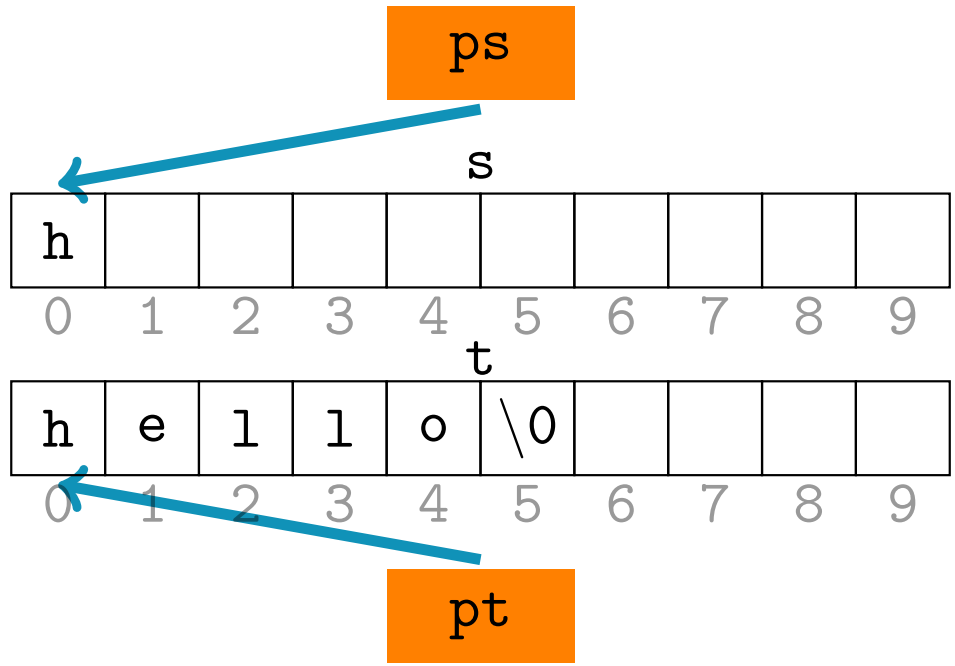
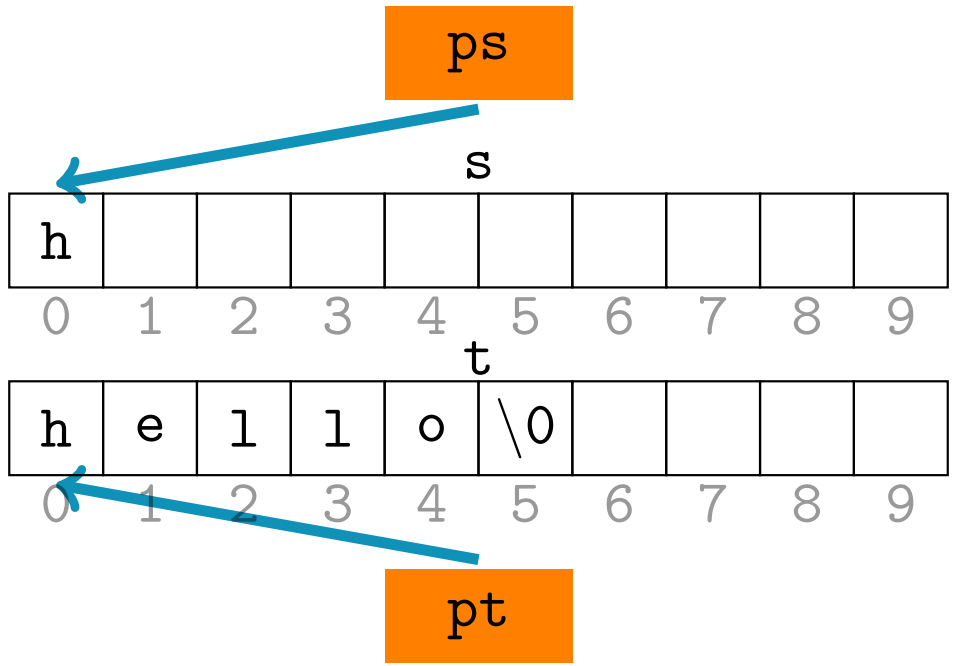
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



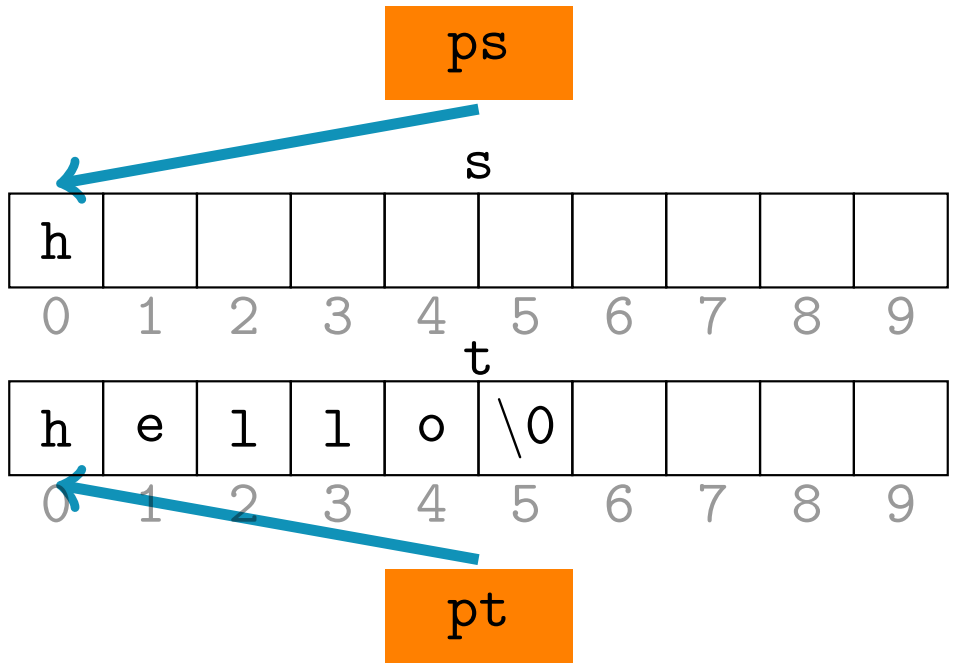
```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(*ps = *pt) */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while('h') */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



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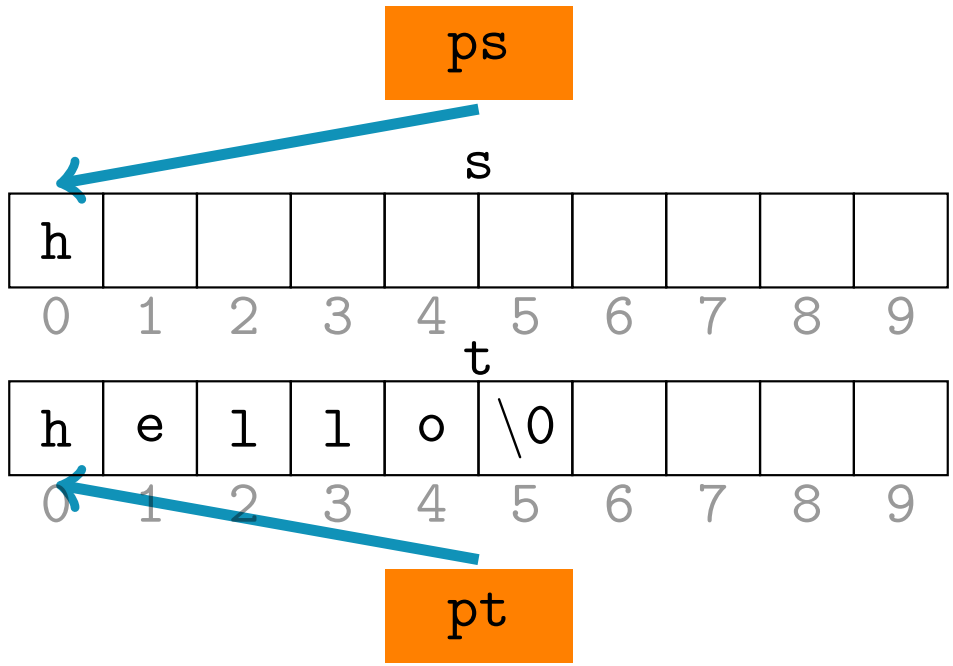
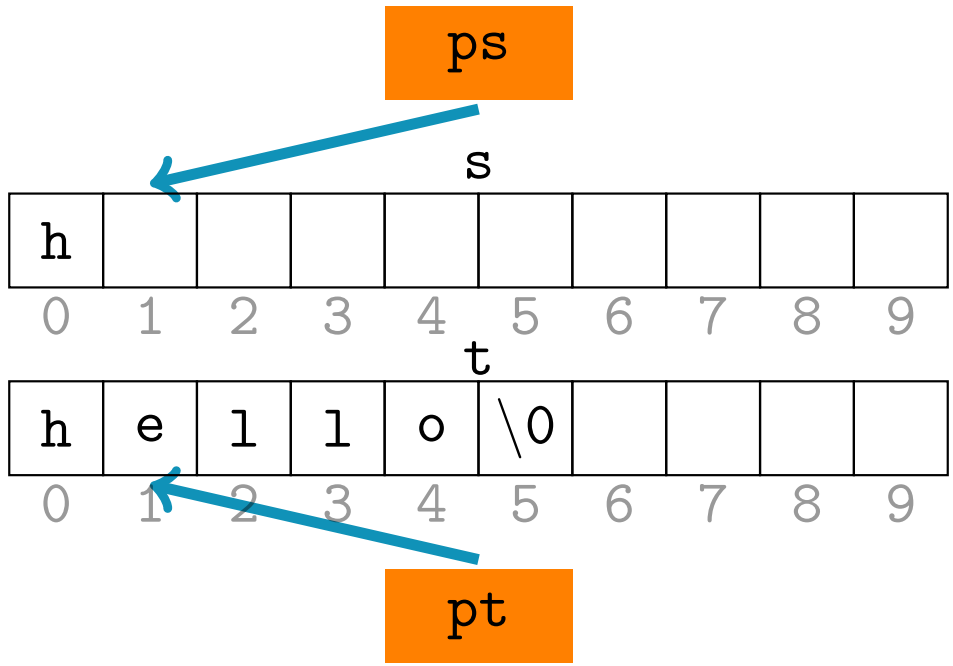
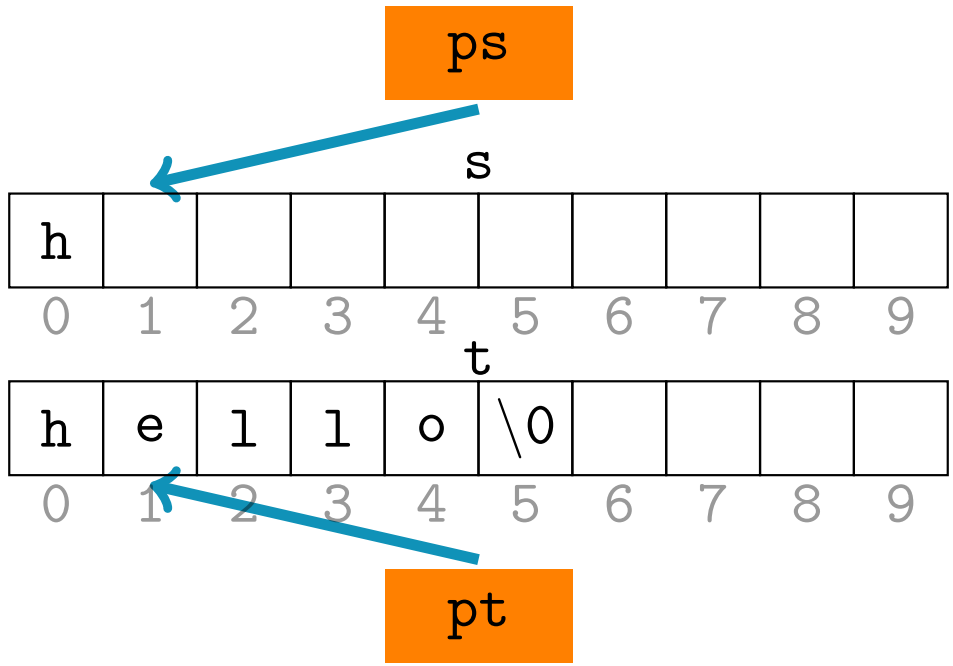


```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



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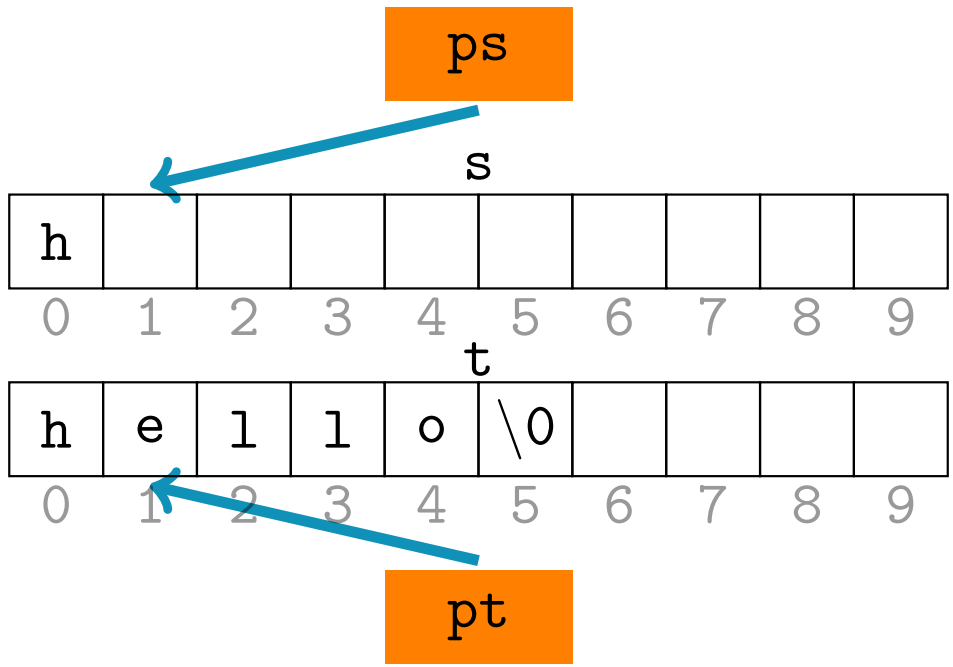
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



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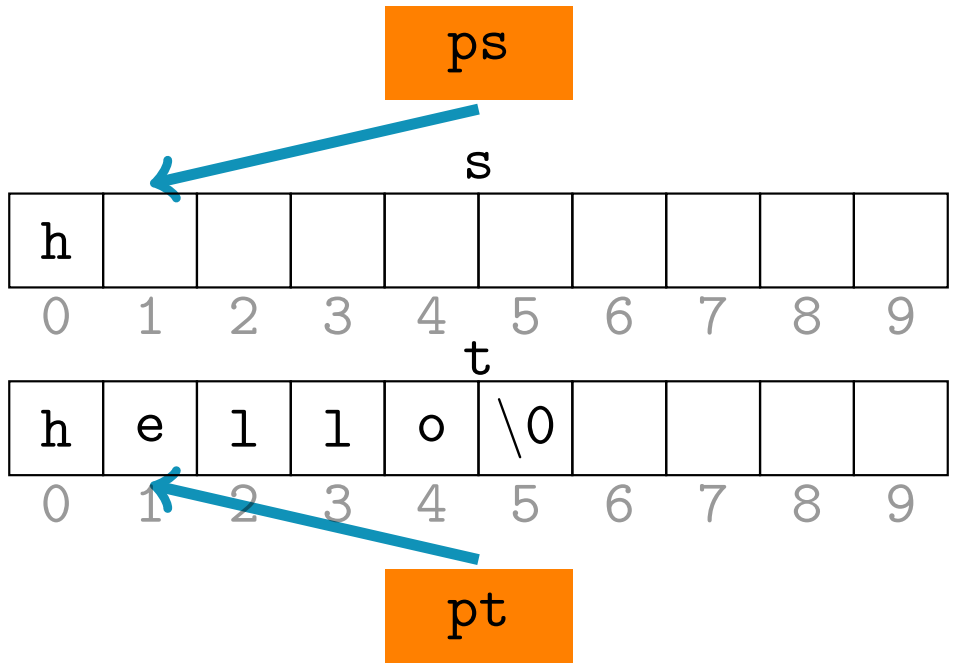
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++);
```



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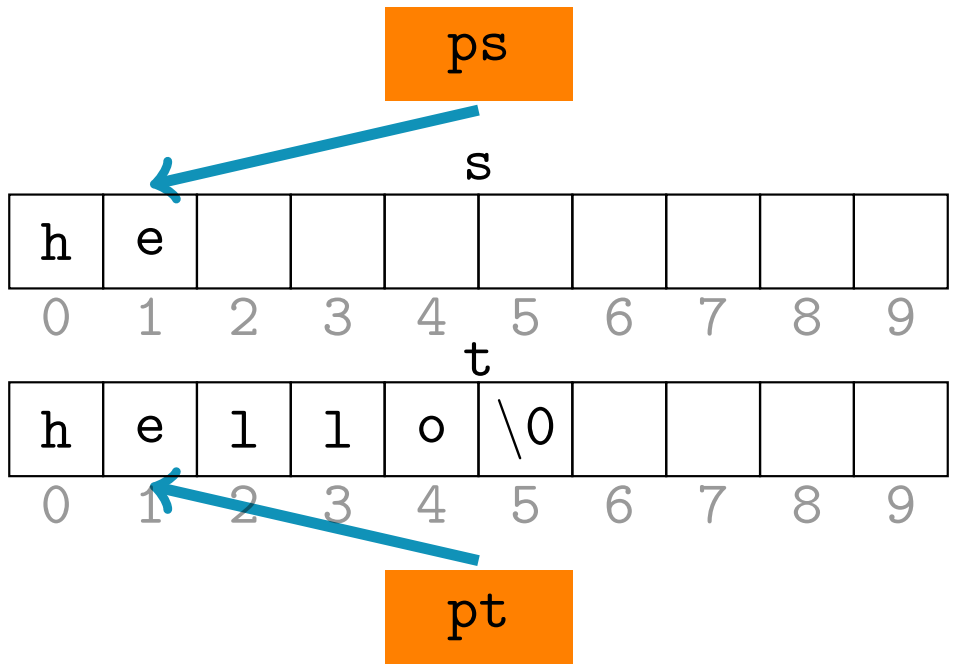
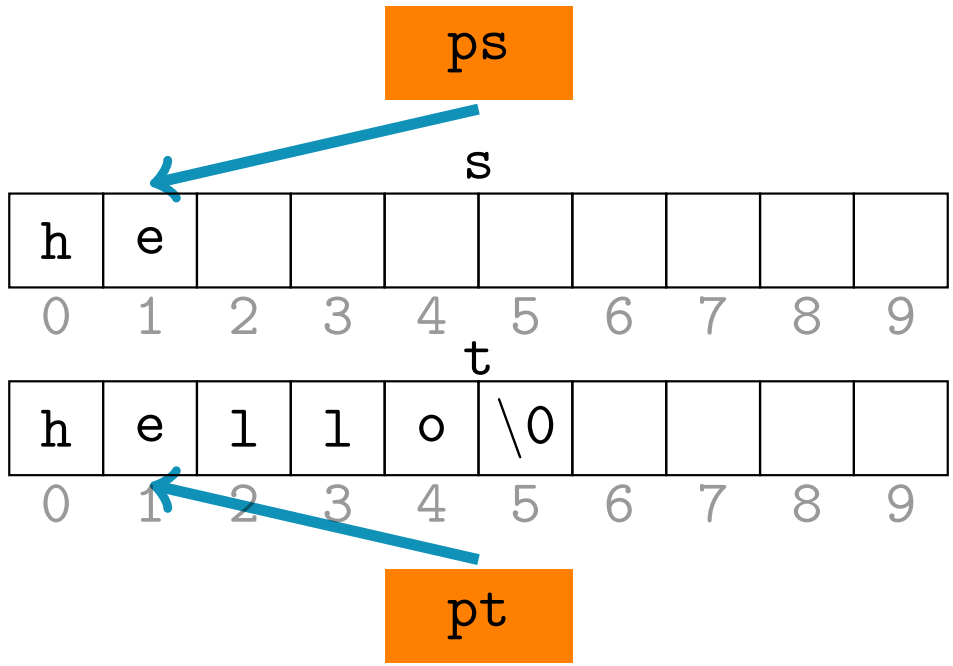
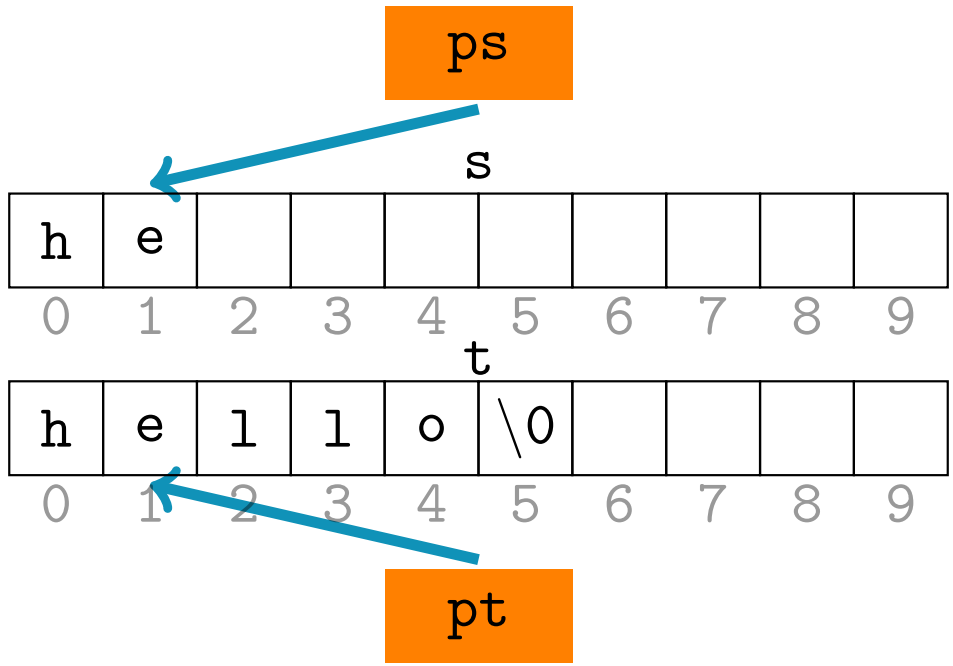


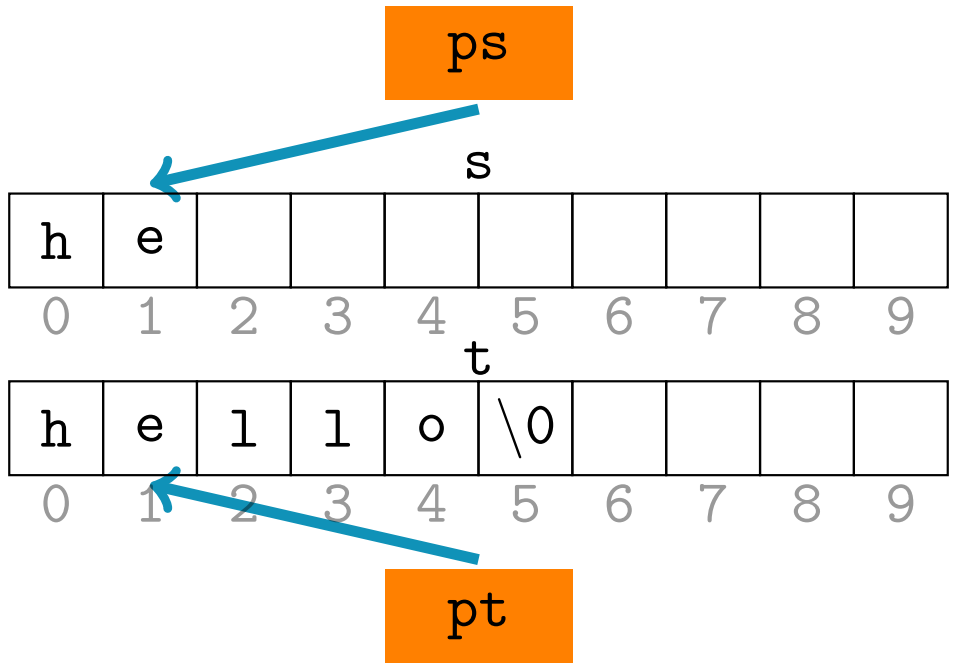
```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(*ps = *pt) */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while('e') */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



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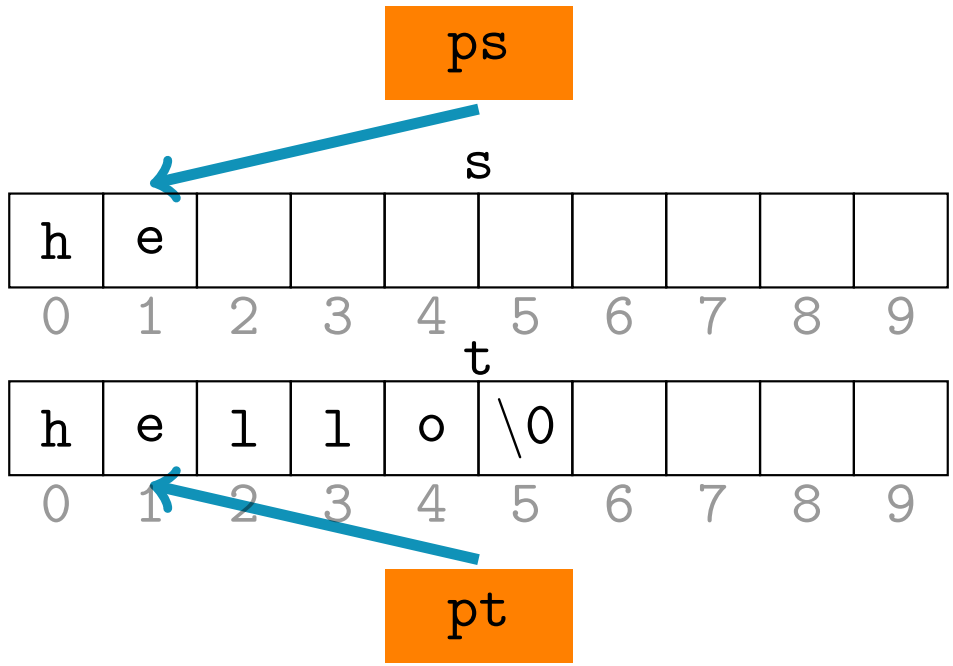
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



```
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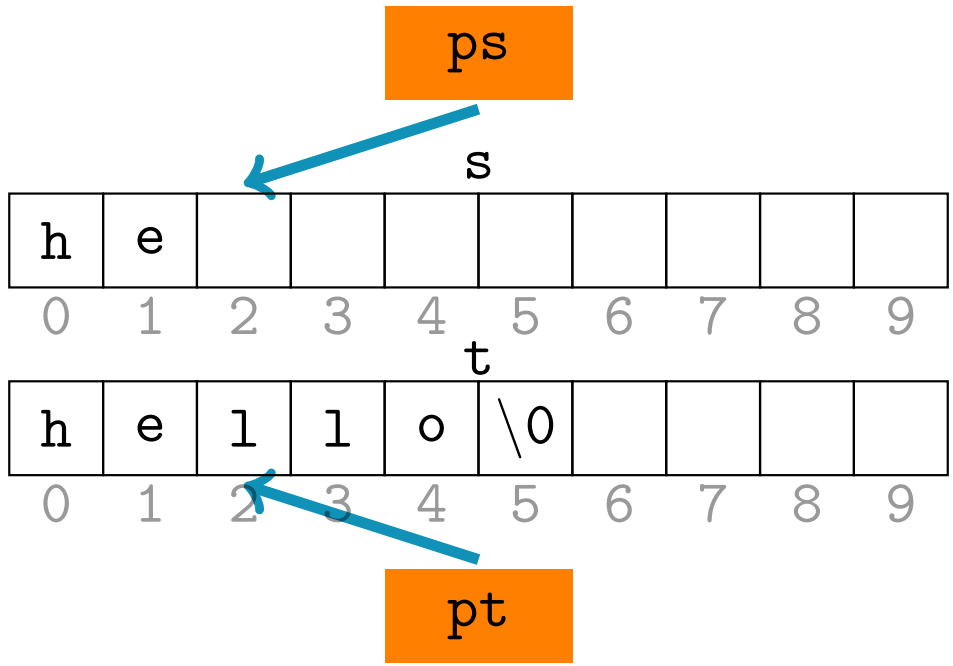
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
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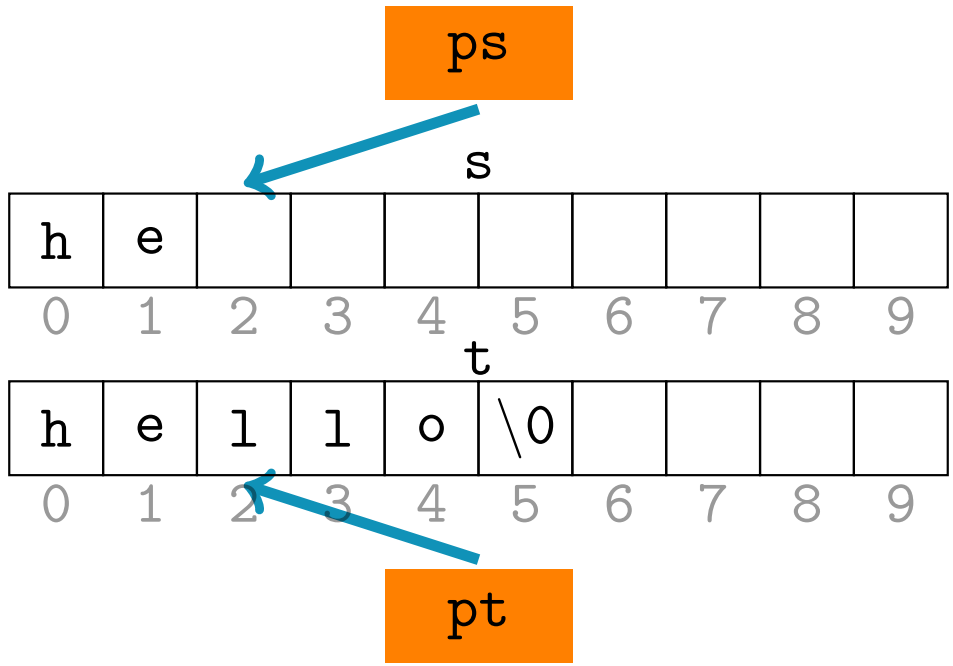

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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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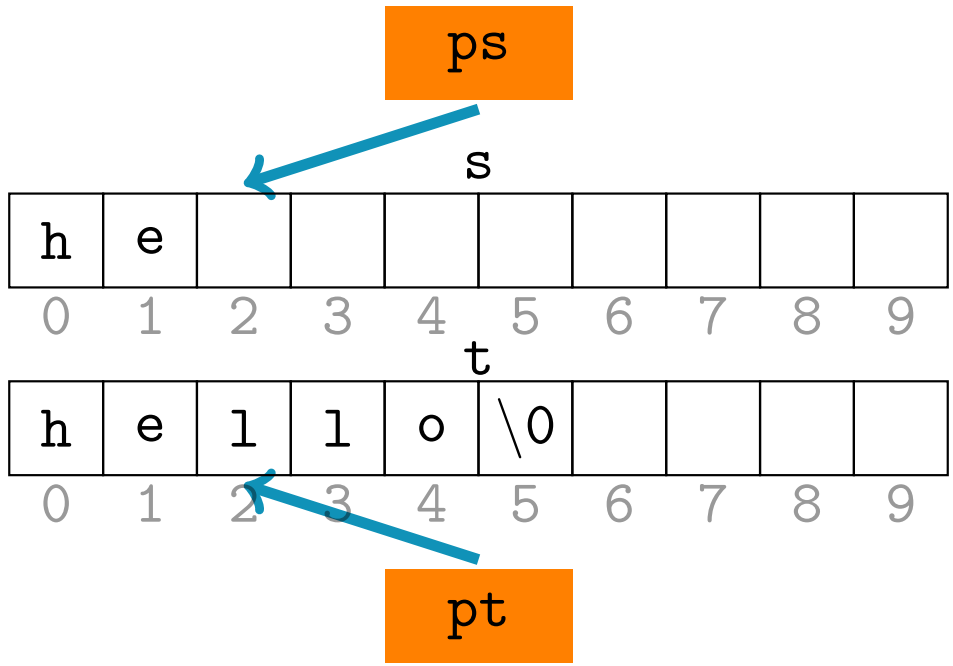
```



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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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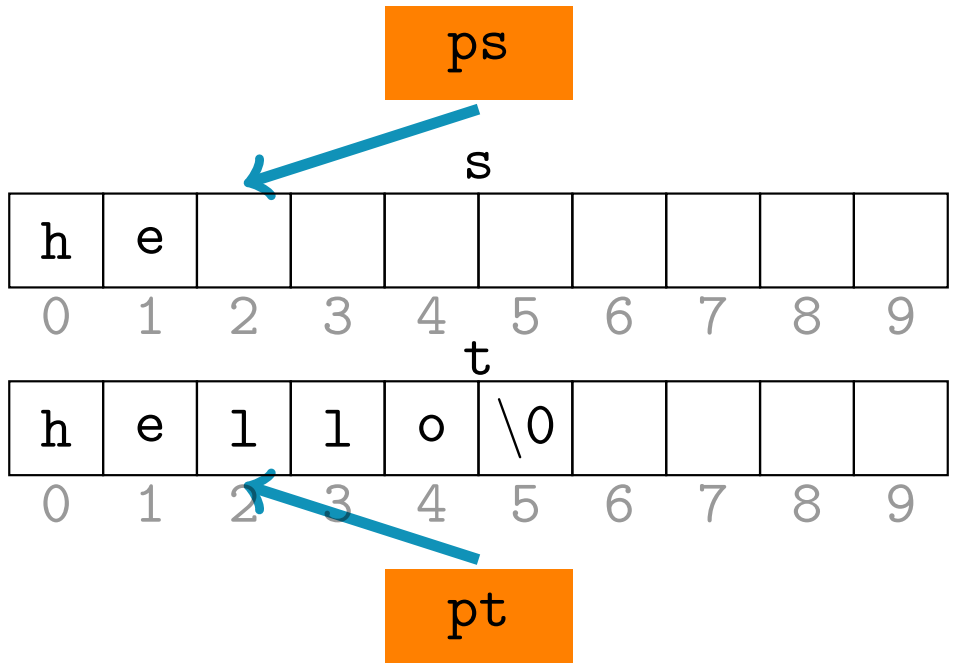

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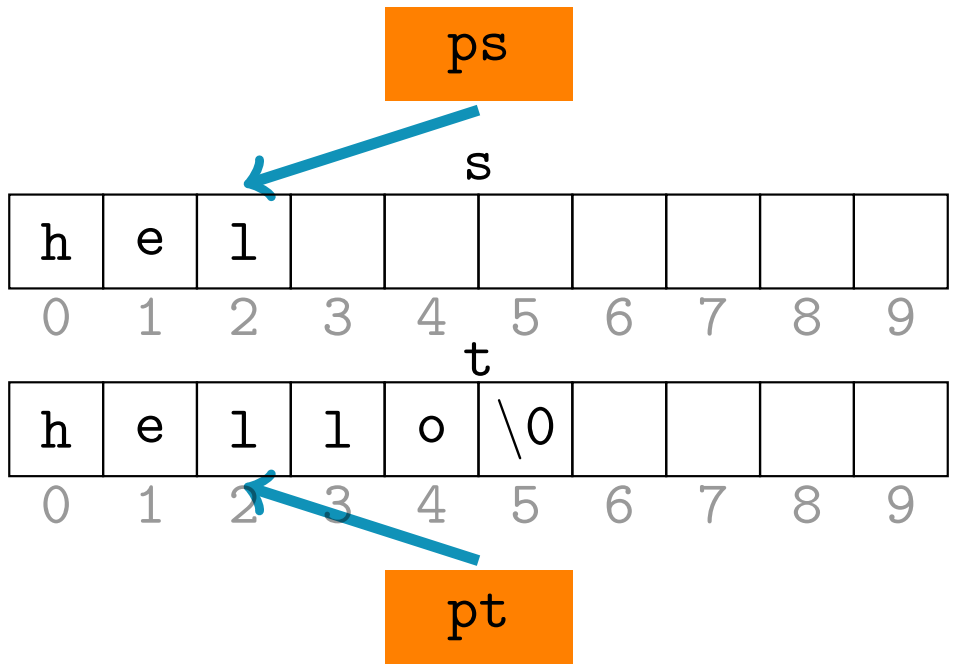

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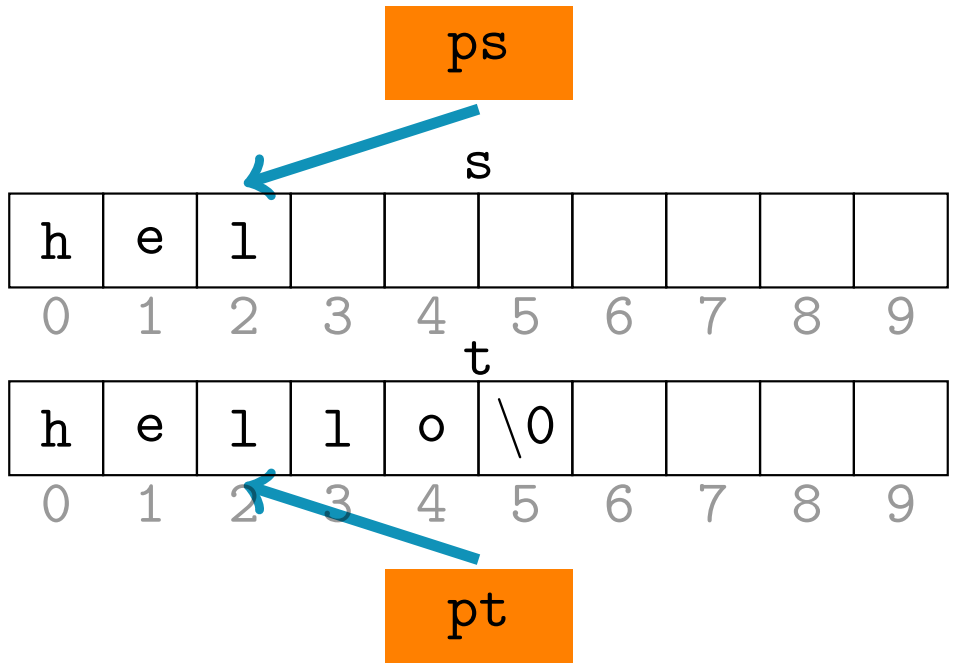
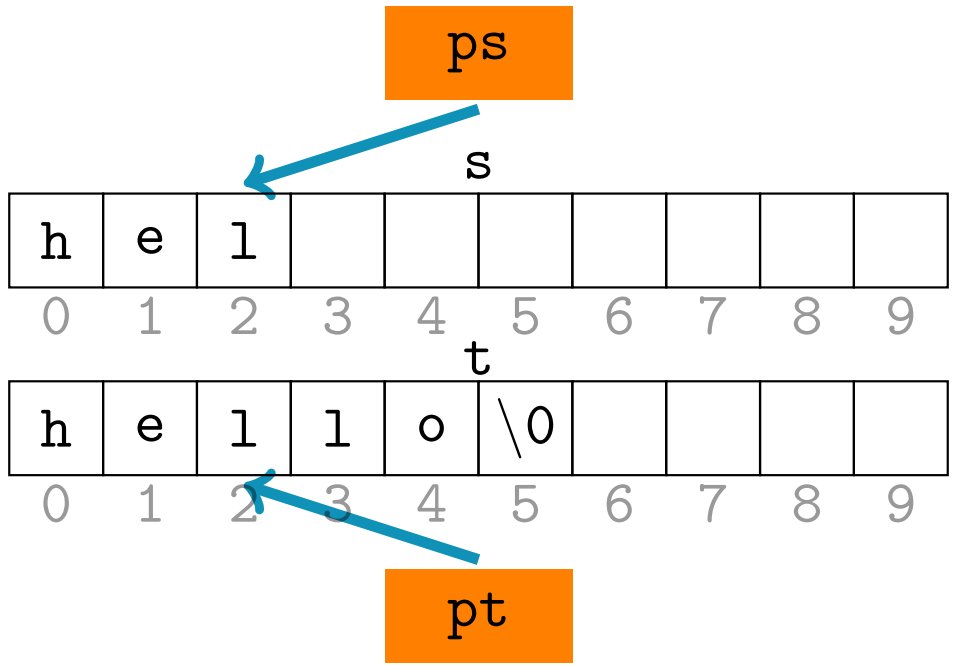
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(*ps = *pt) */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while('l') */
```



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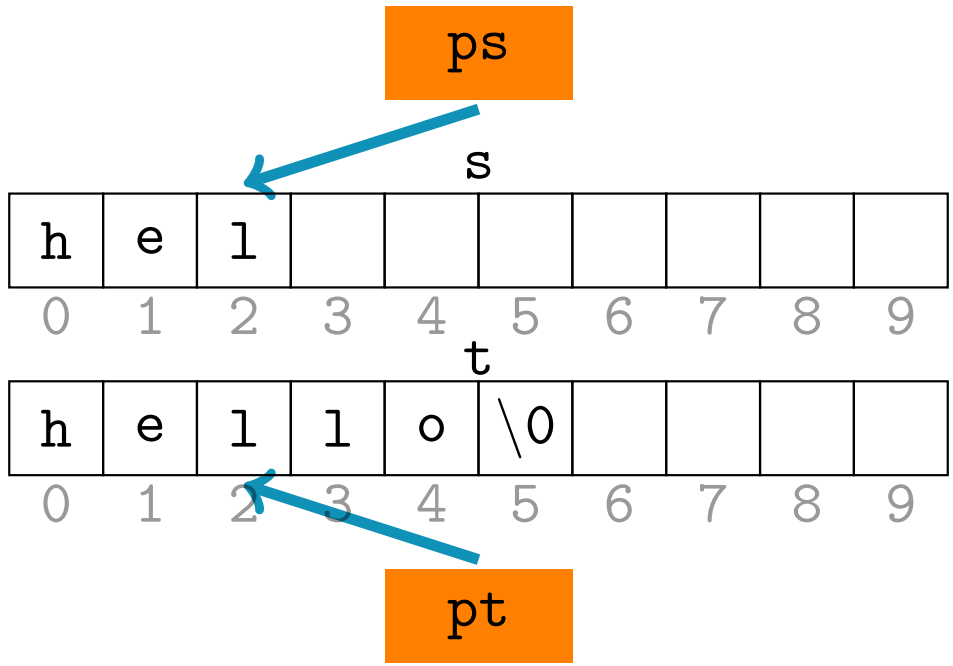
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



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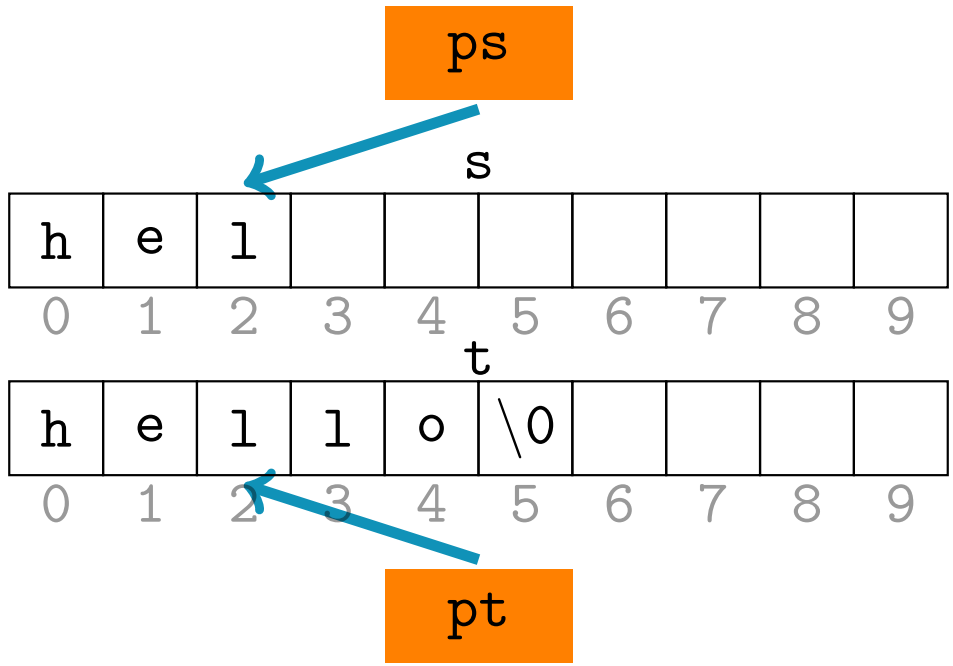

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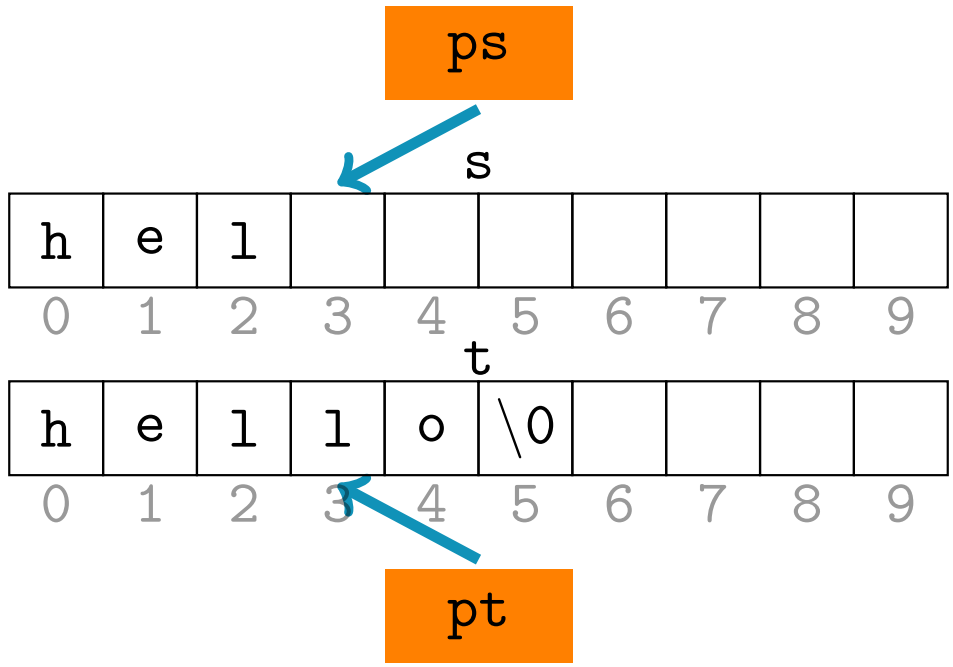
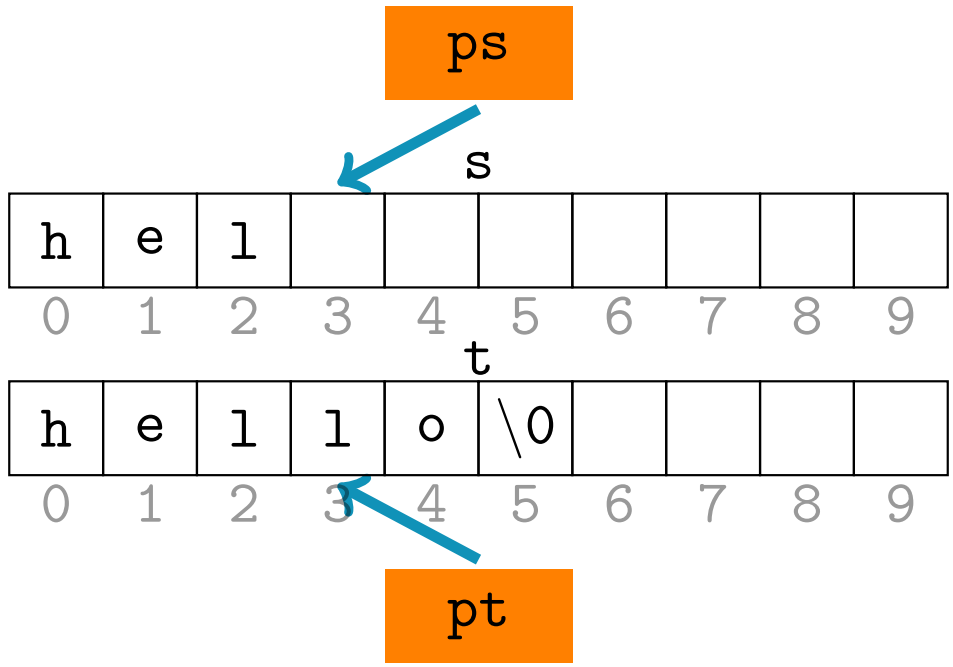
while (*ps++ = *pt++); /* while(true) */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



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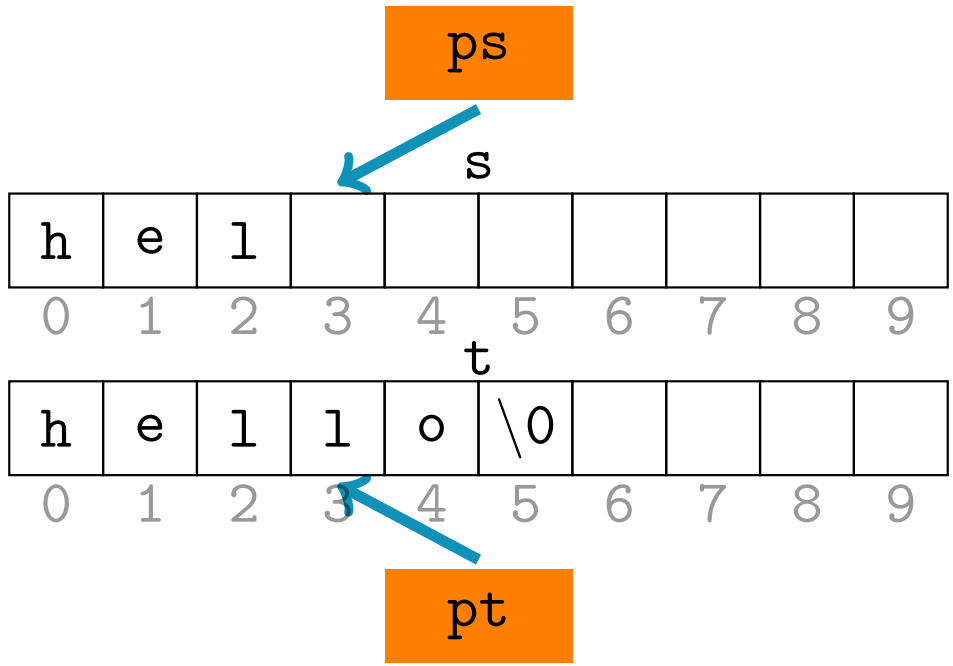

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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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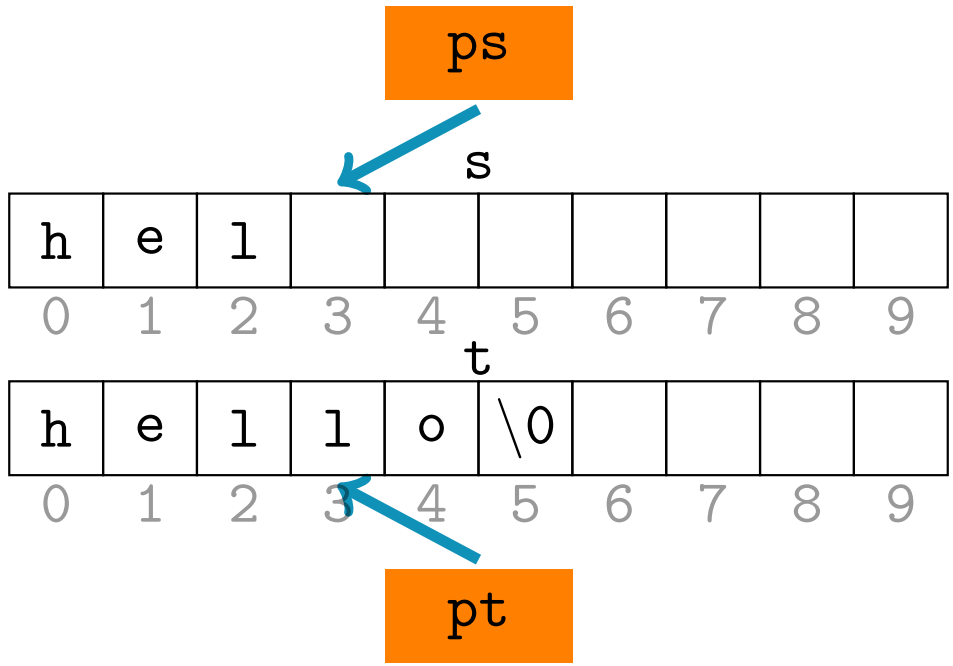
```



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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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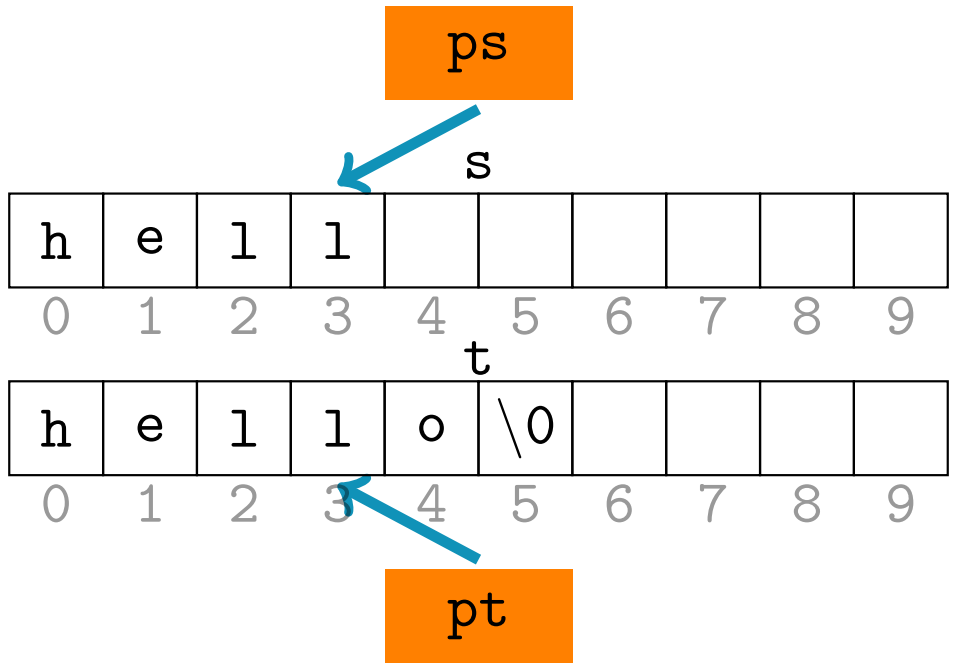
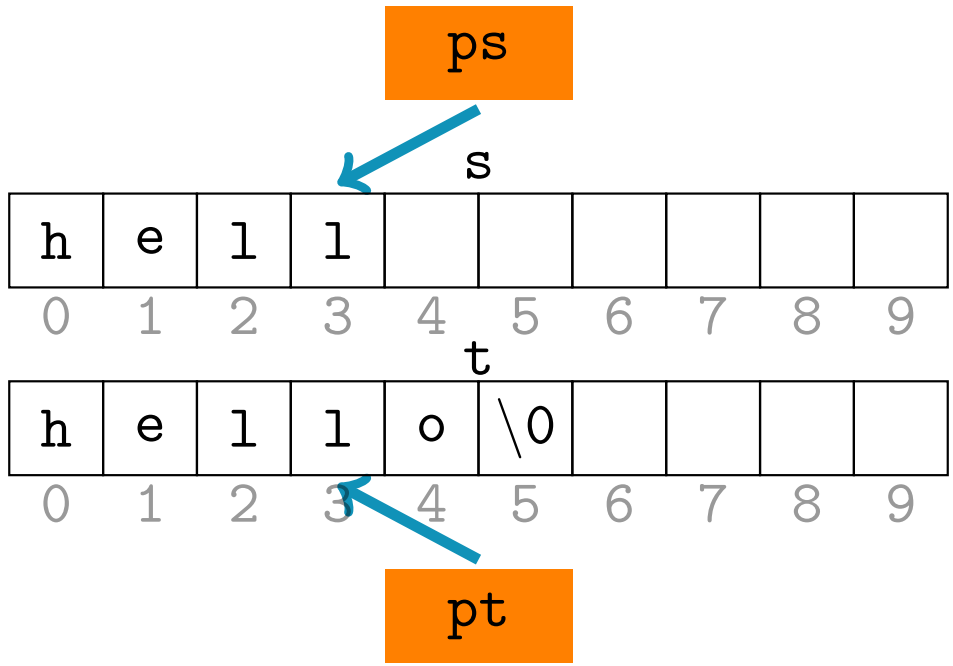
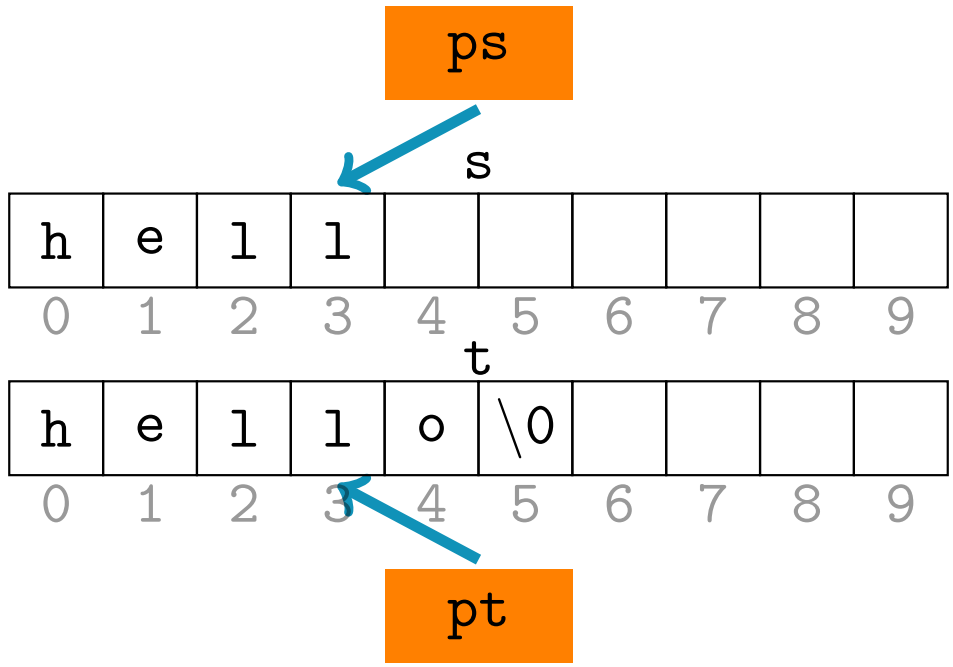
```



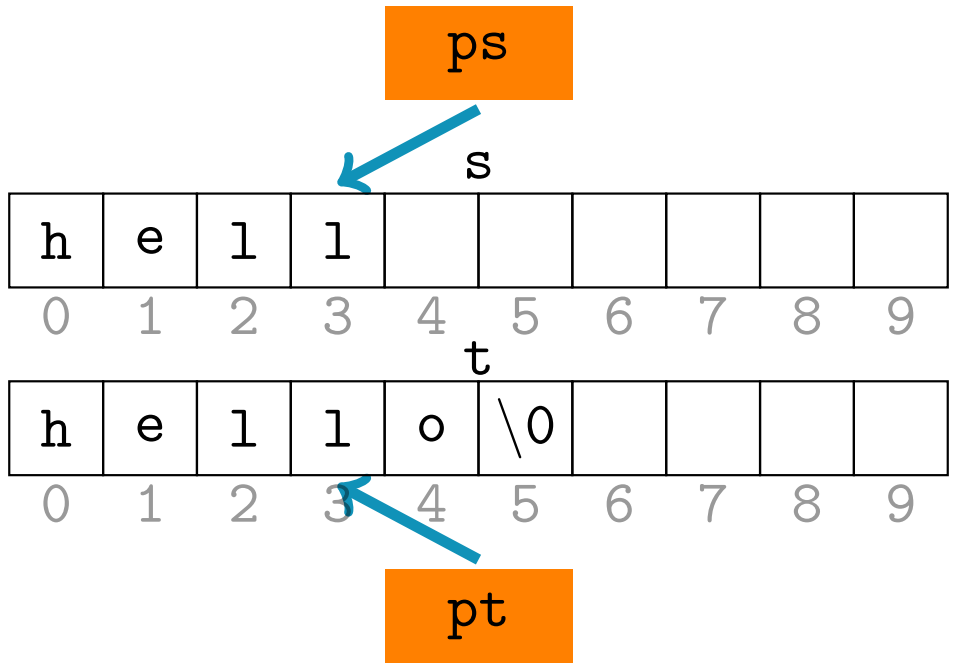
```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(*ps = *pt) */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while('l') */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



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/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
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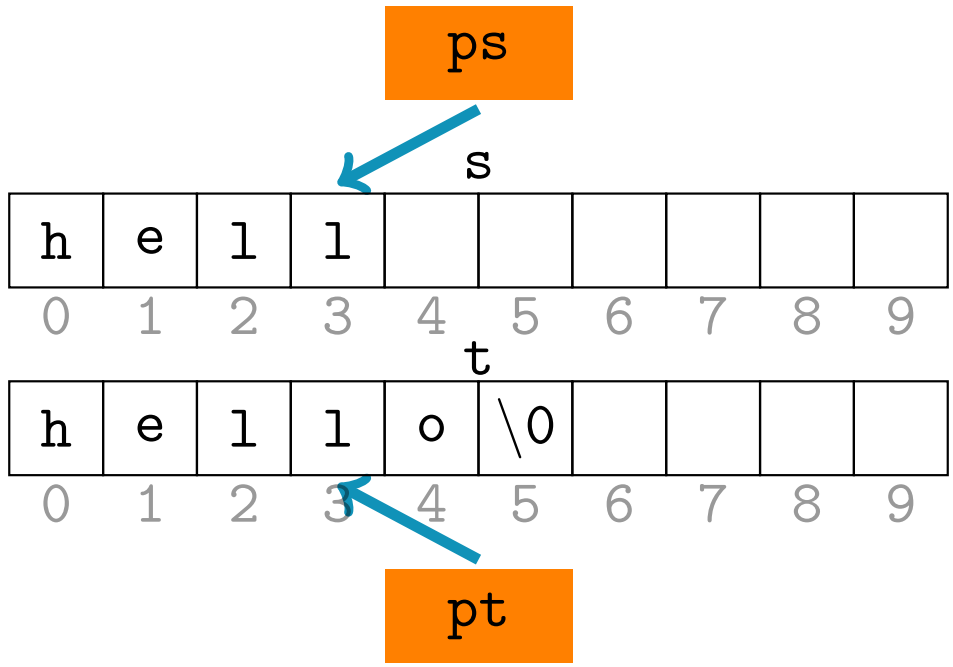

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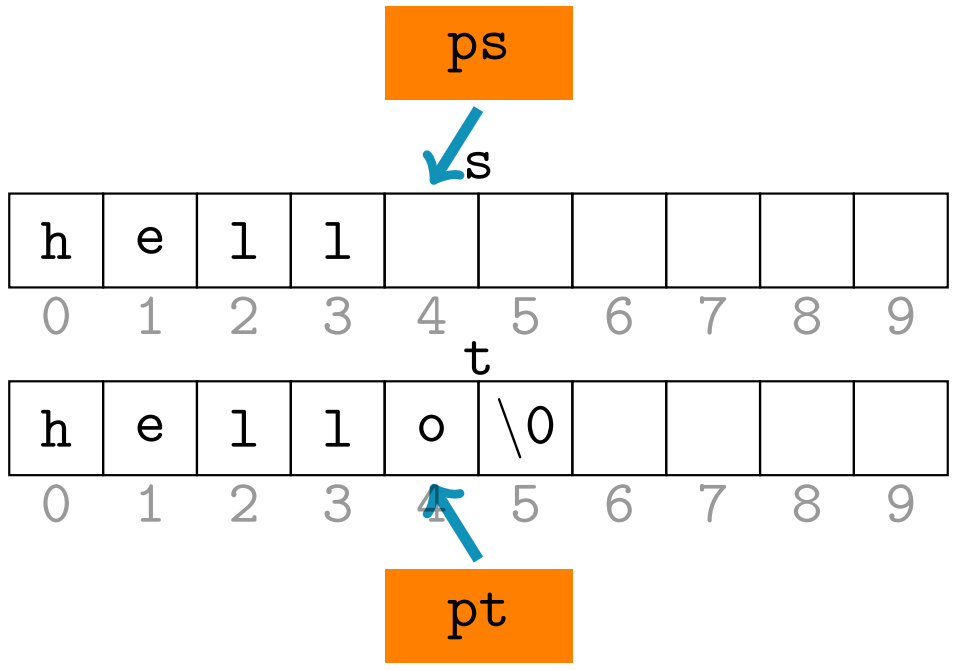

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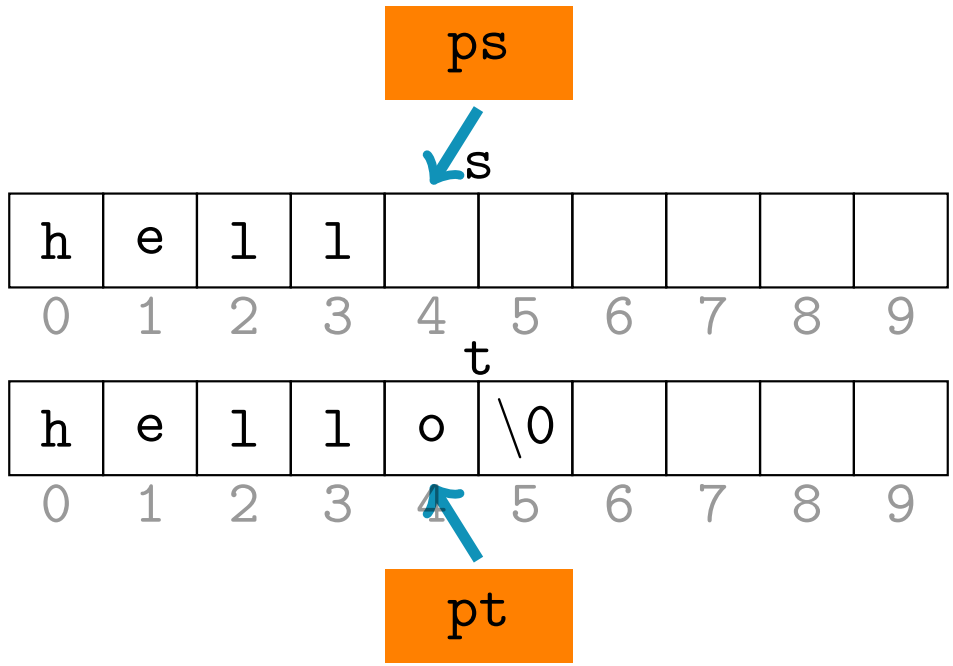
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(true) */
```



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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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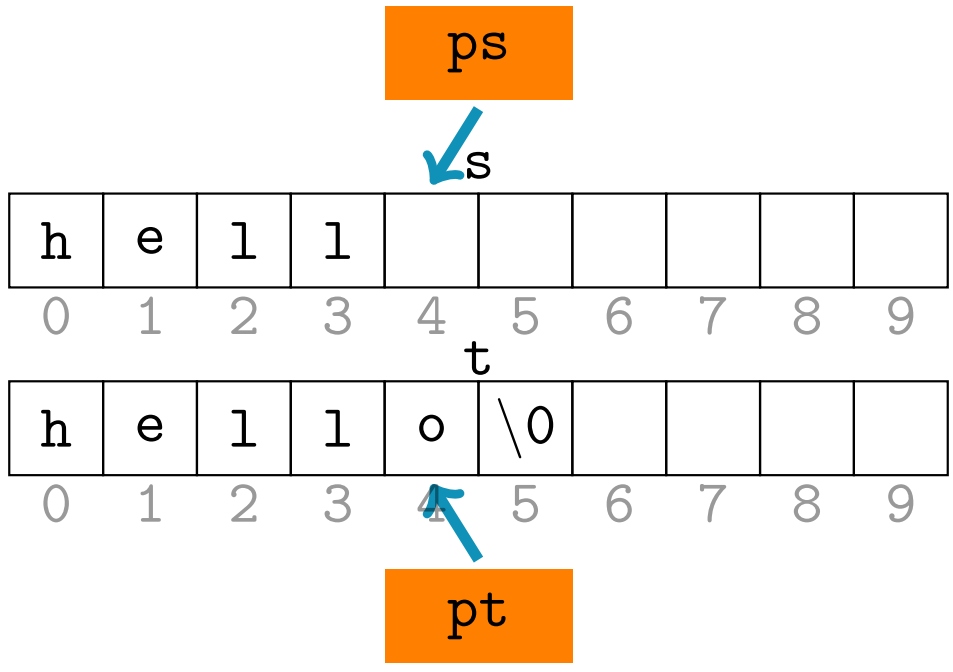

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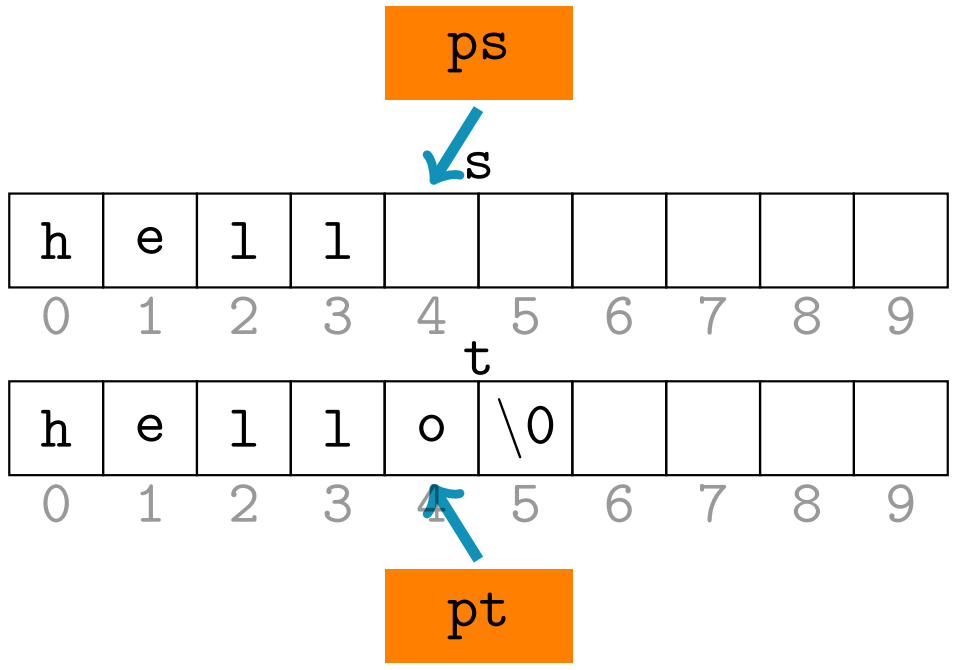

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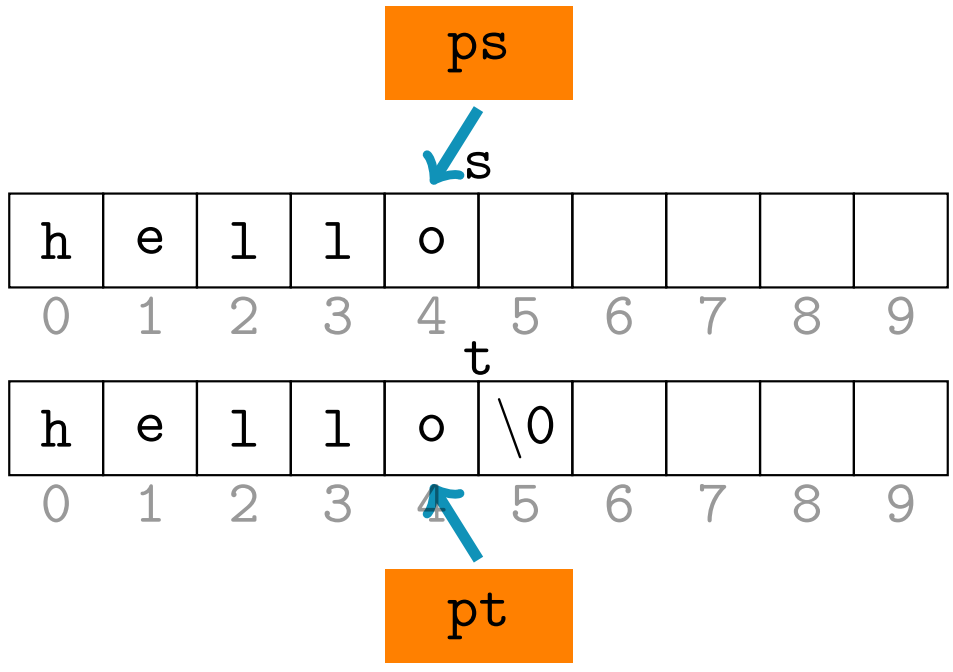

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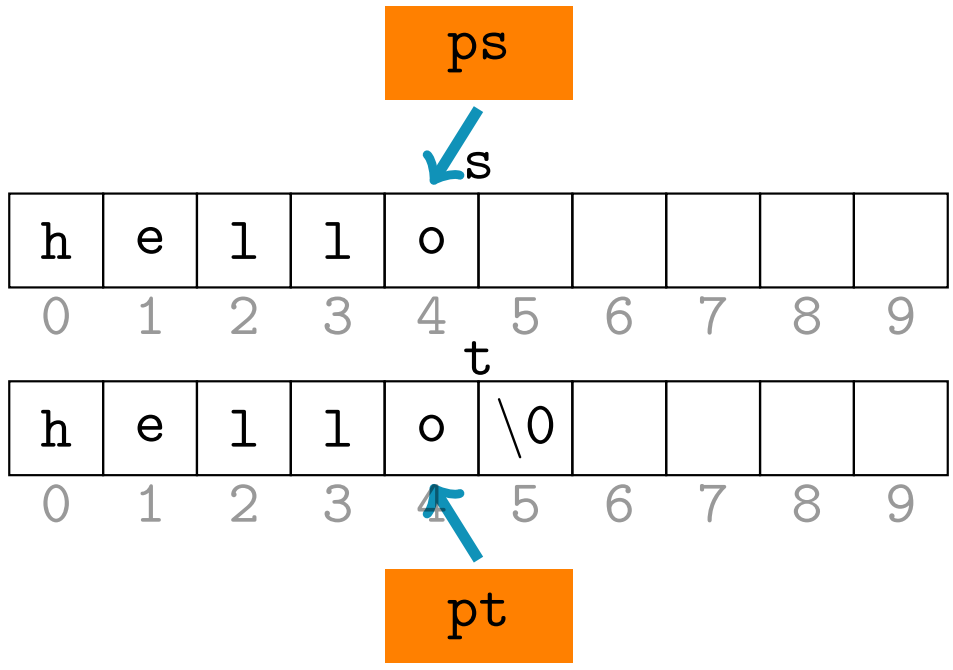
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(*ps = *pt) */
```



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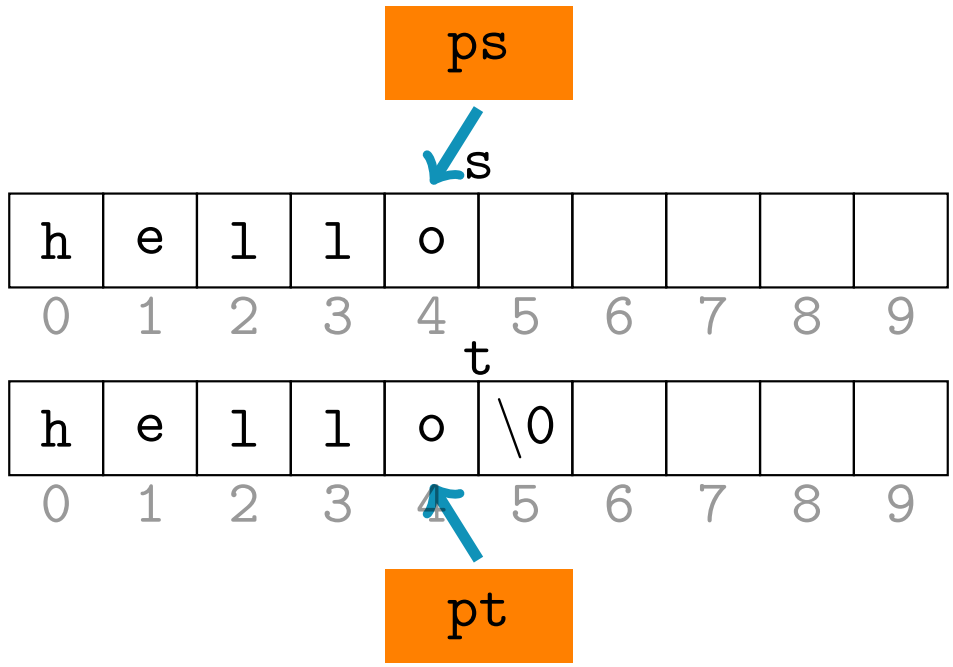
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while('o') */
```



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char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
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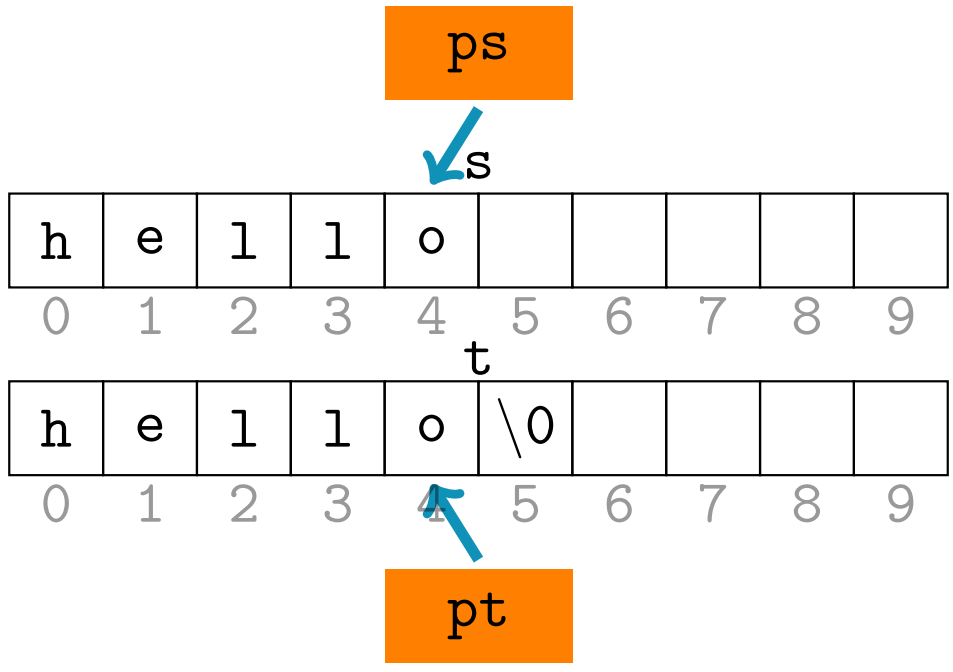

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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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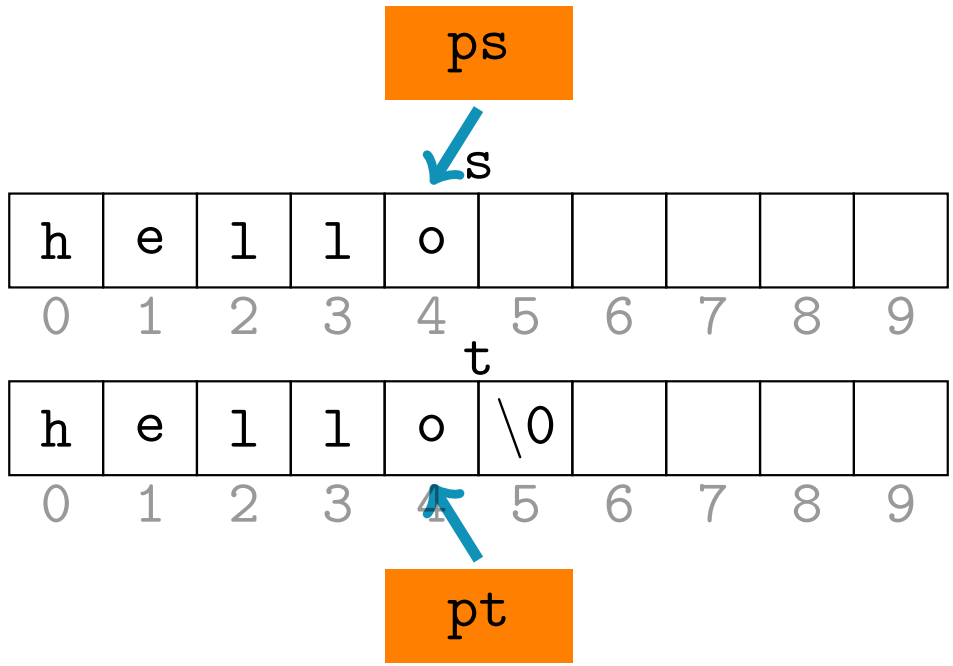

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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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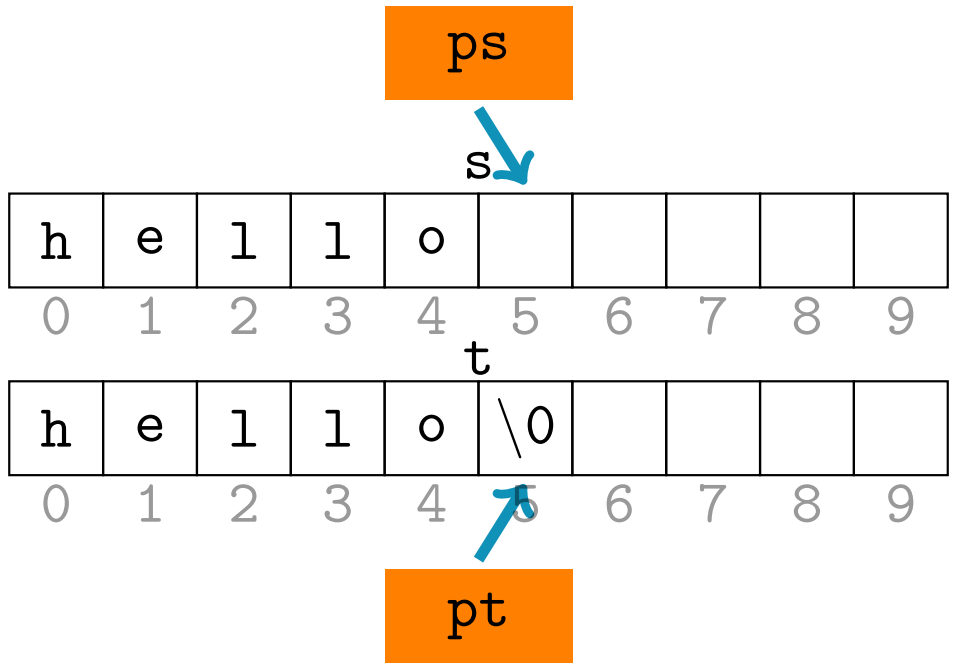

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char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
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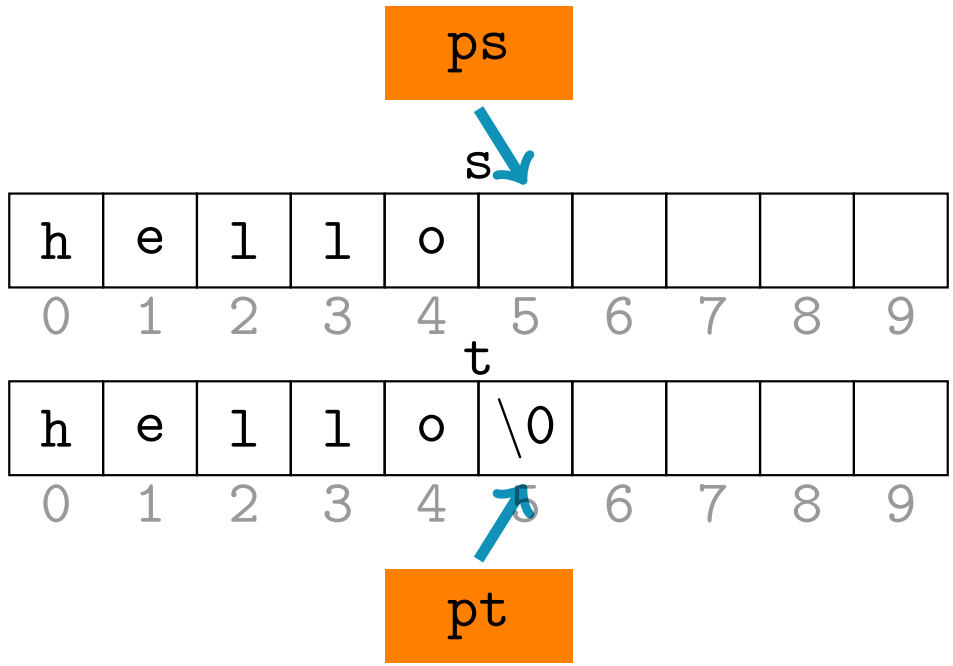
```



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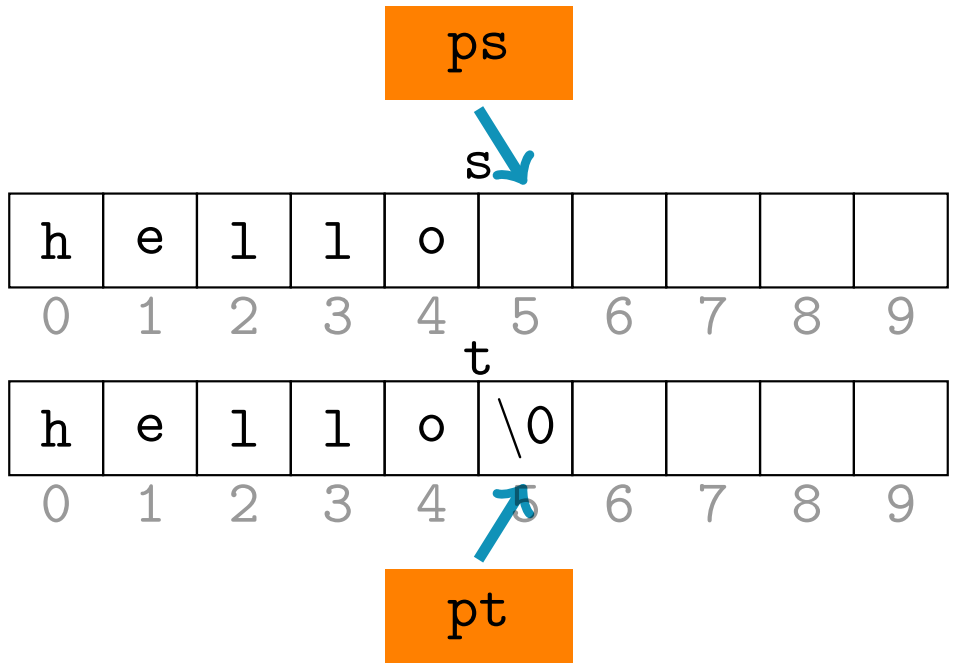

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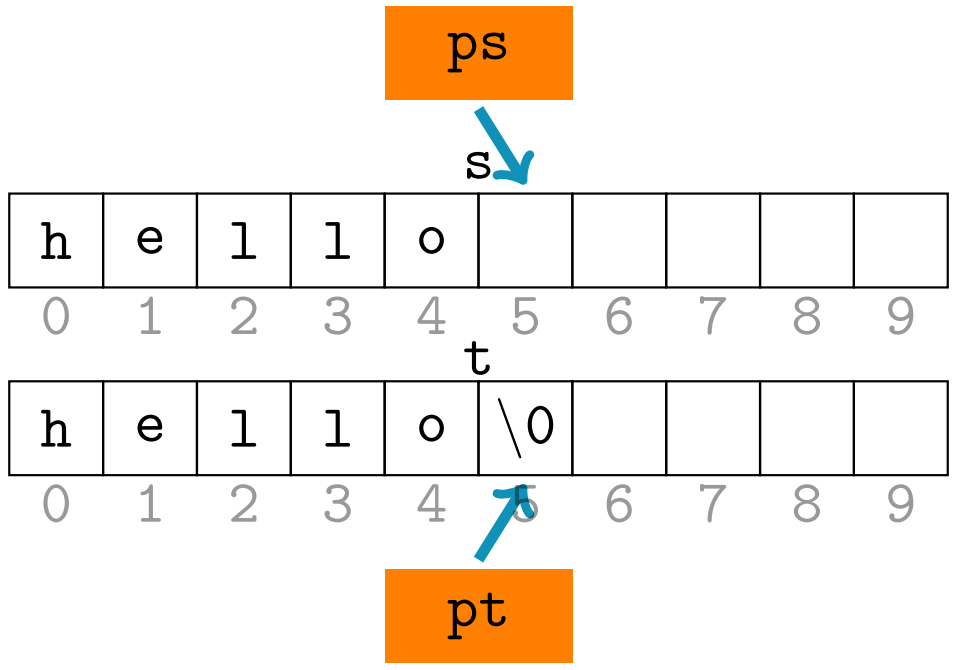

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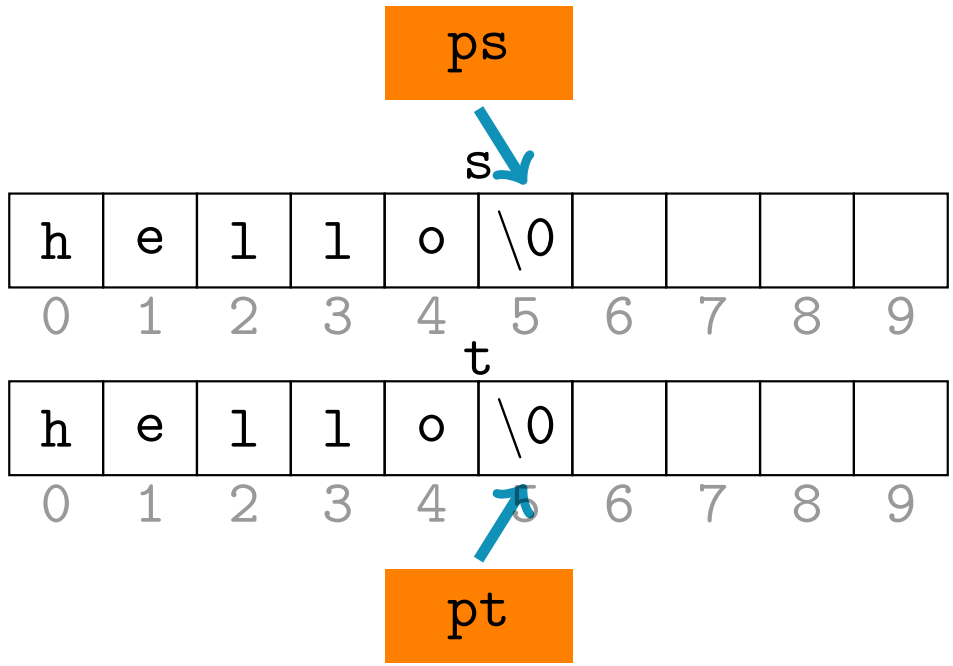

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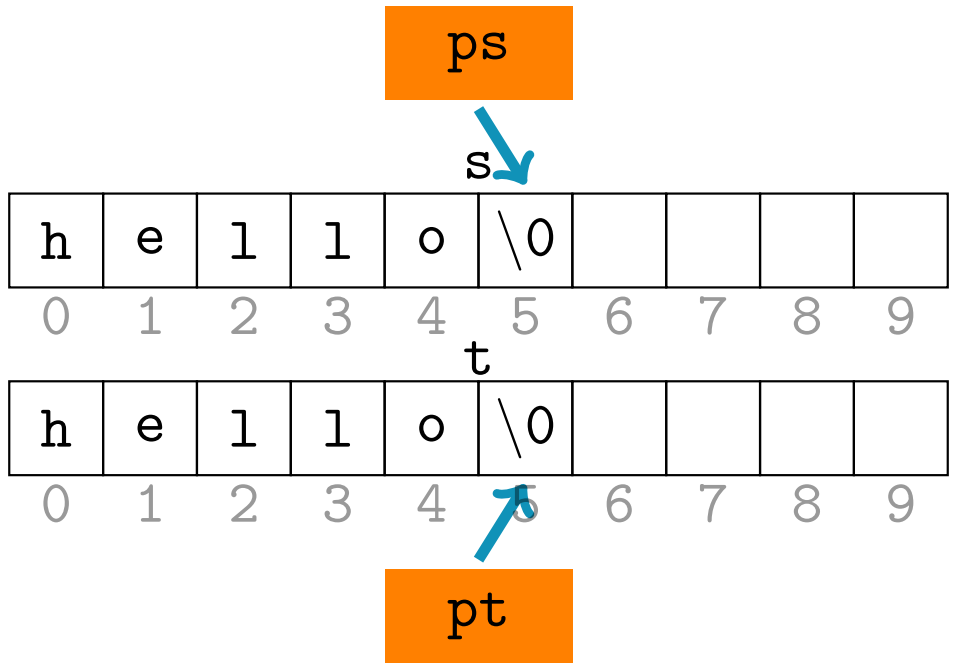

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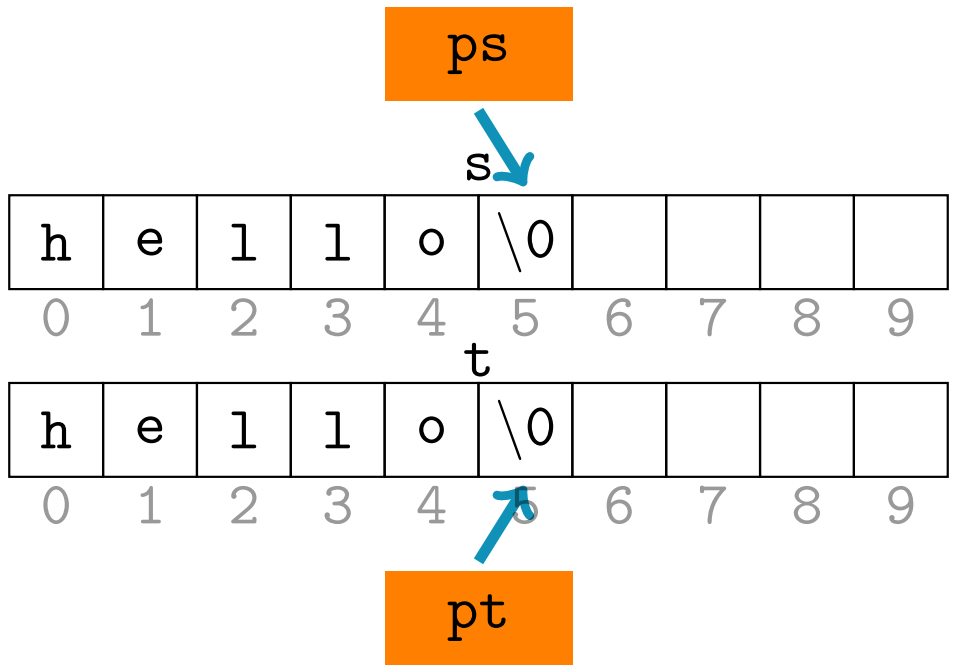
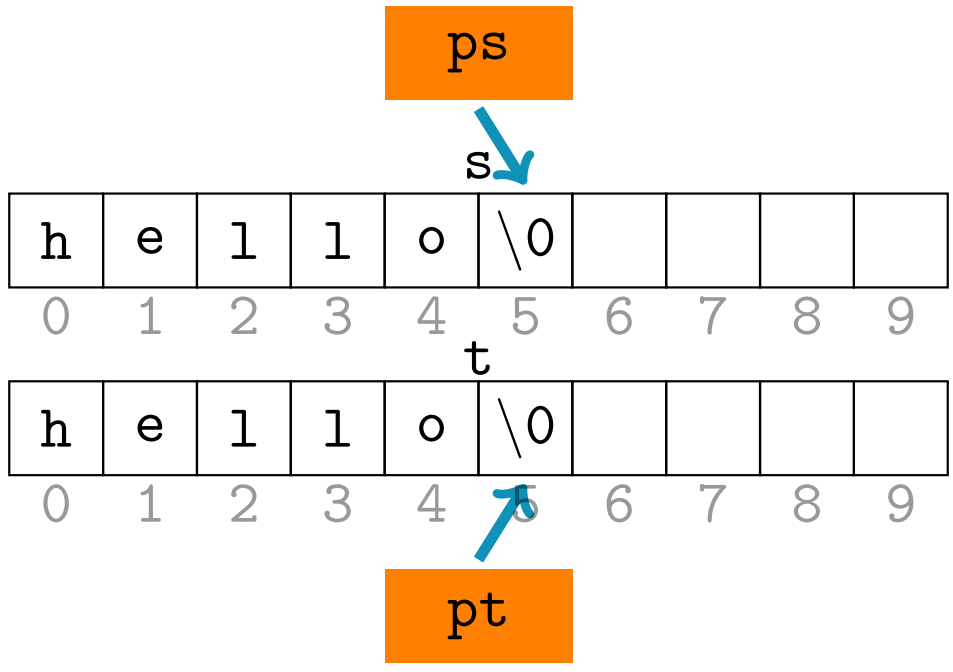
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while('\0') */
```



```
char t[10]="hello", s[10];/*copy t to s - pointers*/
char *ps = s, *pt = t;
/* *ps = *pt, ps++, pt++; condition - value of *ps */
while (*ps++ = *pt++); /* while(false) */
```



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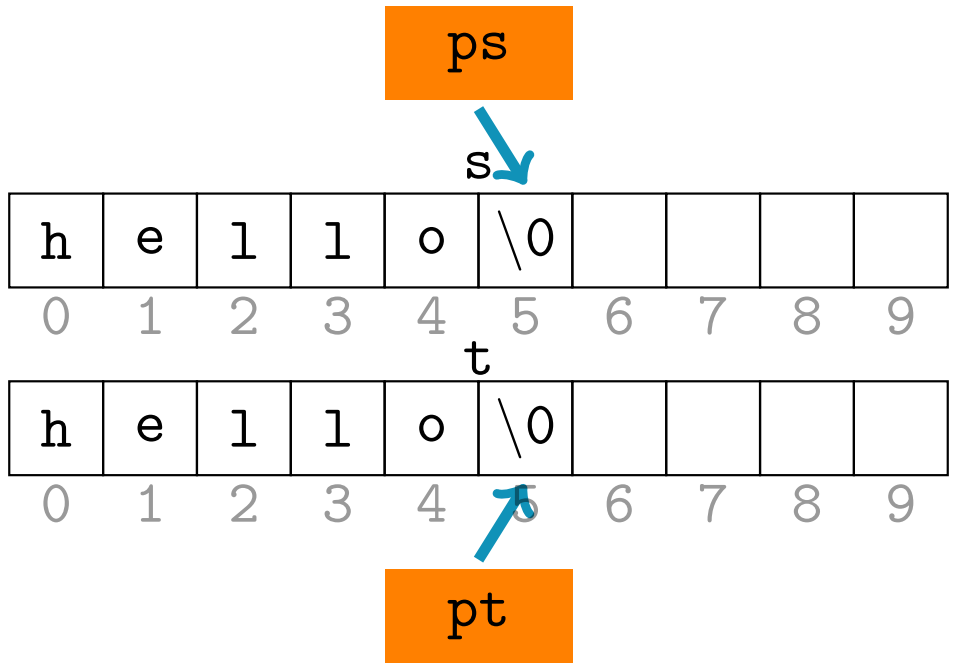

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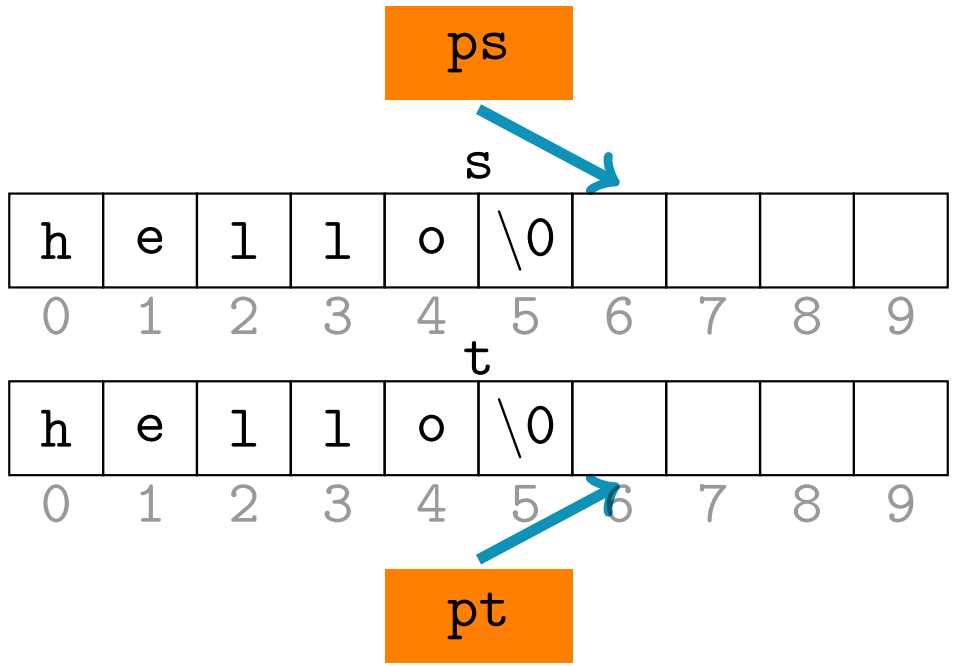

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/* *ps = *pt, ps++, pt++; condition - value of *ps */
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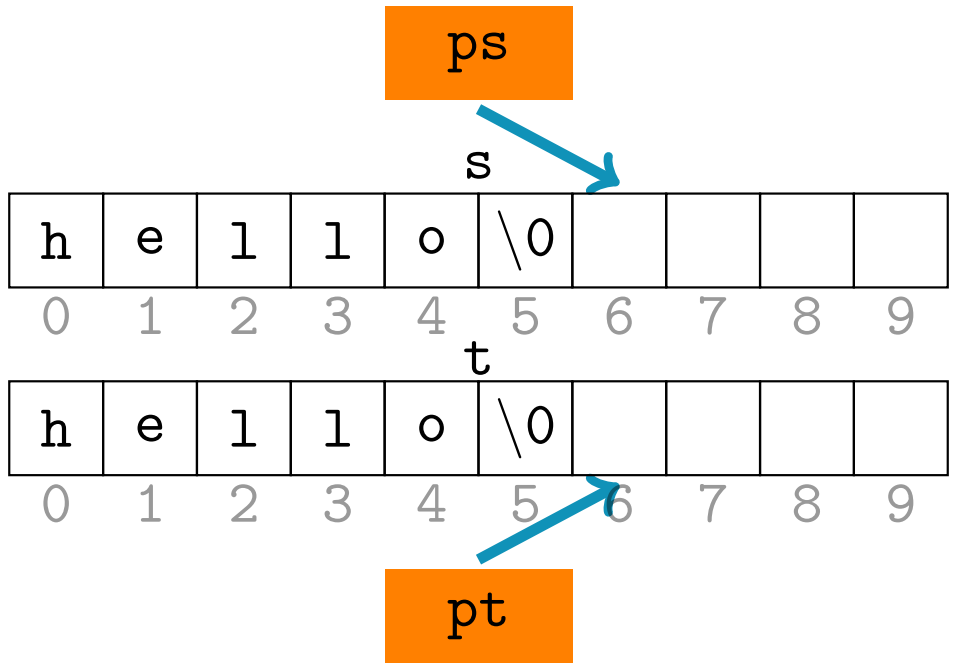
```



Done!

String Copy

```
char t[] = "hello", s[10];/*copy t to s -pointers*/
char *ps = s, *pt = t;
while(*ps++ = *pt++);
```

String Copy

```
char t[] = "hello", s[10];/*copy t to s -pointers*/
char *ps = s, *pt = t;
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Comments

String Copy

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char t[] = "hello", s[10];/*copy t to s -pointers*/
char *ps = s, *pt = t;
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Comments

If addresses of `s` and `t` are known, we can copy the string.

String Copy

```
char t[] = "hello", s[10];/*copy t to s -pointers*/
char *ps = s, *pt = t;
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```

Comments

If addresses of `s` and `t` are known, we can copy the string.

String Copy

```
 char t[] = "hello", s[10];/*copy t to s -pointers*/
 char *ps = s, *pt = t;
void strcpy(char *ps, char *pt) {
 while(*ps++ = *pt++);
}
```

Comments

If addresses of `s` and `t` are known, we can copy the string.

String Copy

```
void strcpy(char *ps, char *pt) {
  while(*ps++ = *pt++);
}
```

String Copy

```
void strcpy(char *ps, char *pt) {
  while(*ps++ = *pt++);
}
char t[] = "Hello, world!";
```

String Copy

```
void strcpy(char *ps, char *pt) {
  while(*ps++ = *pt++);
}
char t[] = "Hello, world!";
char s[100];
```

String Copy

```
void strcpy(char *ps, char *pt) {
 while(*ps++ = *pt++);
}
char t[] = "Hello, world!";
char s[100];
strcpy(s,t);
```

String Copy

```
void strcpy(char *ps, char *pt) {
 while(*ps++ = *pt++);
}
char t[] = "Hello, world!";
char s[100];
strcpy(s,t);
printf("%s", s);
```

String Copy

```
void strcpy(char *ps, char *pt) {
  while(*ps++ = *pt++);
}
char t[] = "Hello, world!";
char s[100];
strcpy(s,t);
printf("%s", s); → Hello, world!
```

Structures

Structures

Definition

Collection of one or more variables, grouped together for convenient handling.

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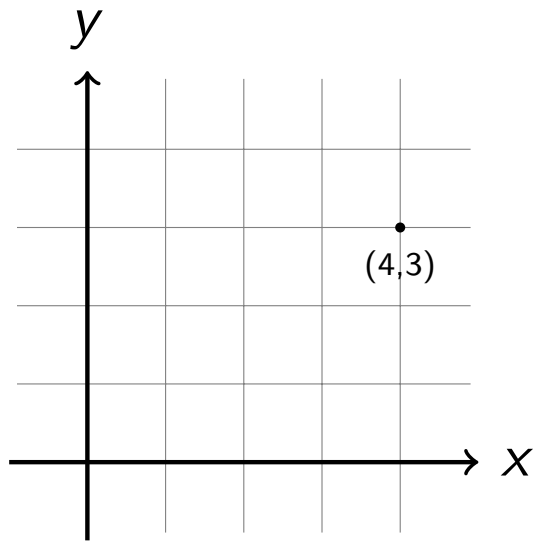
Why?

Structures

Definition

Collection of one or more variables, grouped together for convenient handling.

Why?

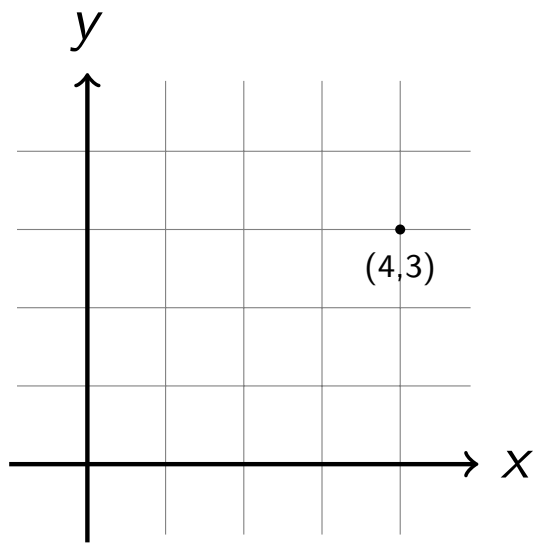


Structures

Definition

Collection of one or more variables, grouped together for convenient handling.

Why?



Task

A variable to capture a point on the plane.

```
struct point {
  int x;
  int y;
};
```

```
struct point {
  int x;
  int y;
};
```

Semantics

```
struct point {
  int x;
  int y;
};
```

Semantics

I have declared a structure

```
struct point {
  int x;
  int y;
};
```

Semantics

I have declared a structure

```
struct point {
  int x;
  int y;
};
```

Semantics

I have declared a structure by the name point

```
struct point {
  int x;
  int y;
};
```

Semantics

I have declared a structure by the name point and it will store two integers.

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
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Fact

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Semantics

I have declared a structure by the name point and it will store two integers.

Fact

- "`struct point`" is a new data type.

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Semantics

I have declared a structure by the name point and it will store two integers.

Fact

- "`struct point`" is a new data type.
- I can declare variables of type "`struct point`".

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

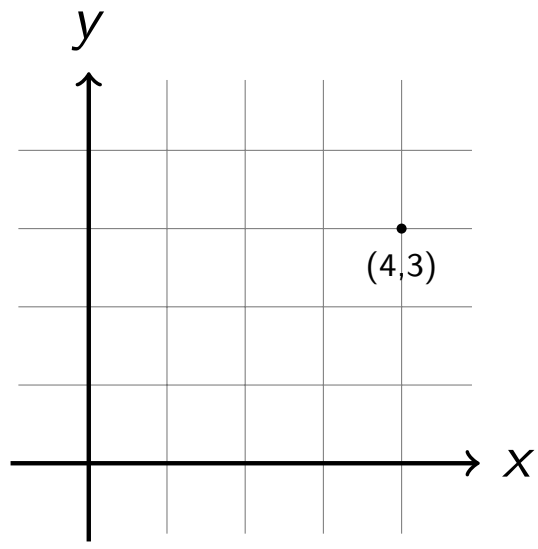
Semantics

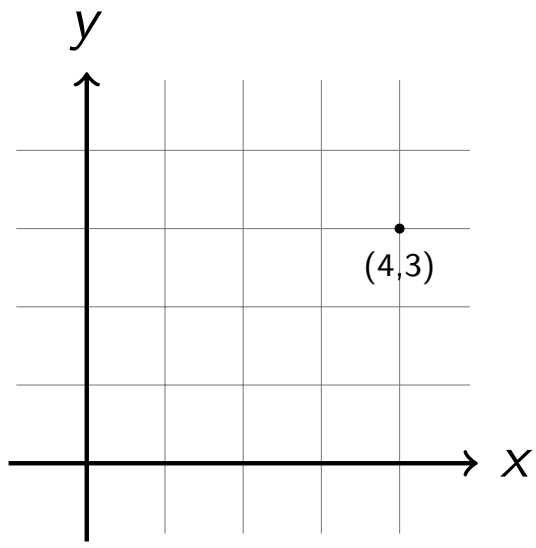
I have declared a structure by the name point and it will store two integers.

Fact

- "`struct point`" is a new data type.
- I can declare variables of type "`struct point`".

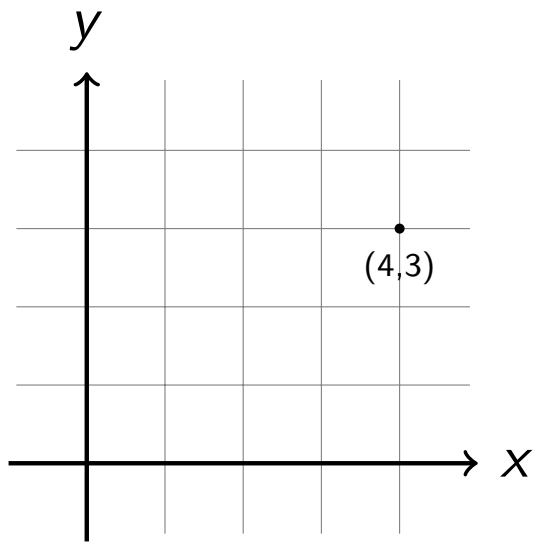
```
struct point pt;
```


y
(4,3)
x



Data type

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

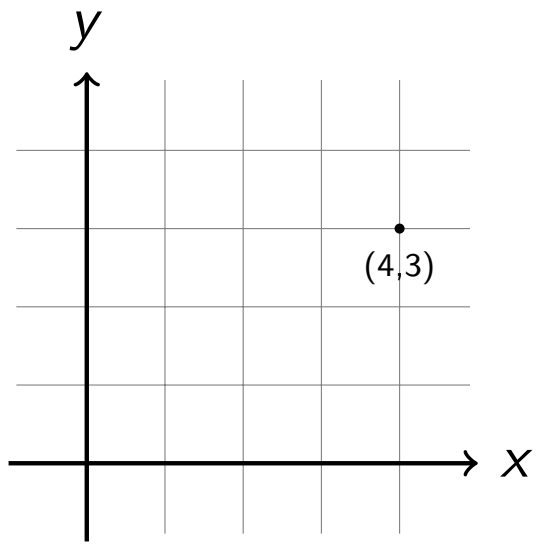


Data type

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Variable

```
struct point pt;
```



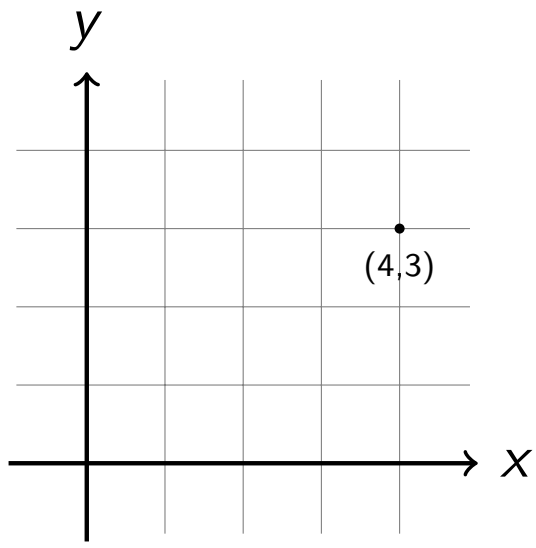
Data type

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Variable

```
struct point pt;
```

Initialisation



Data type

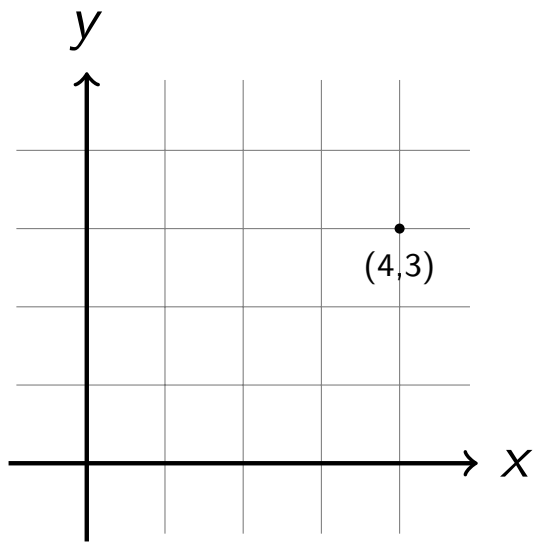
```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Variable

```
struct point pt;
```

Initialisation

- Set x-coordinate of `pt`.



Data type

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

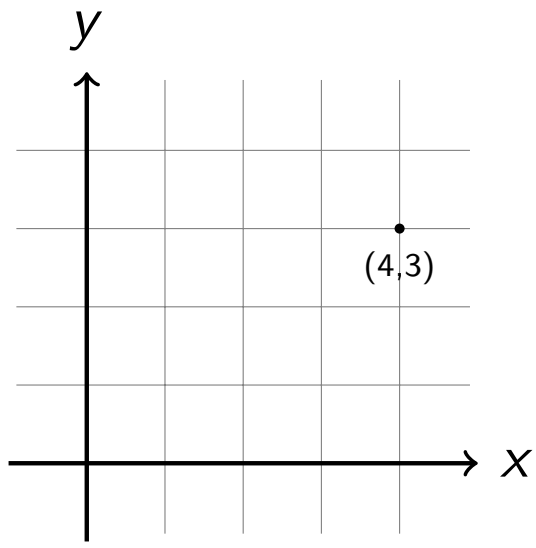
Variable

```
struct point pt;
```

Initialisation

- Set x-coordinate of `pt`.

  ```
  pt.x = 4;
  ```



Data type

```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Variable

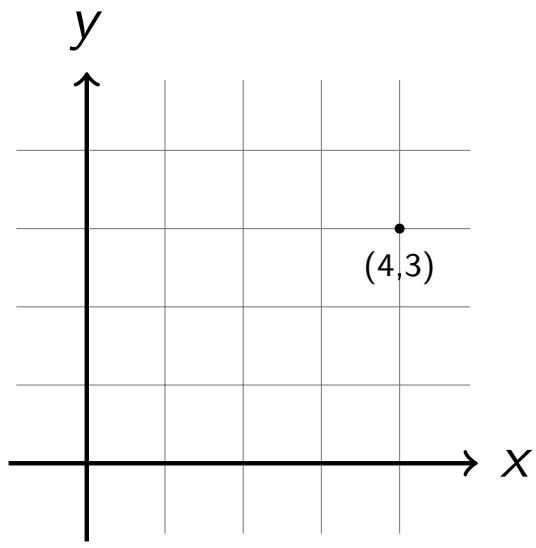
```
struct point pt;
```

Initialisation

- Set x-coordinate of `pt`.

  ```
  pt.x = 4;
  ```

- Set y-coordinate of `pt`.



Data type

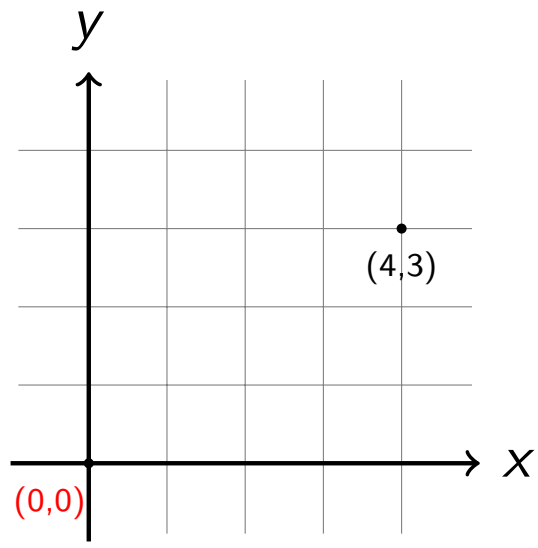
```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Variable

```
struct point pt;
```

Initialisation

- Set x-coordinate of `pt`.
  `pt.x = 4;`
- Set y-coordinate of `pt`.
  `pt.y = 3;`



Data type

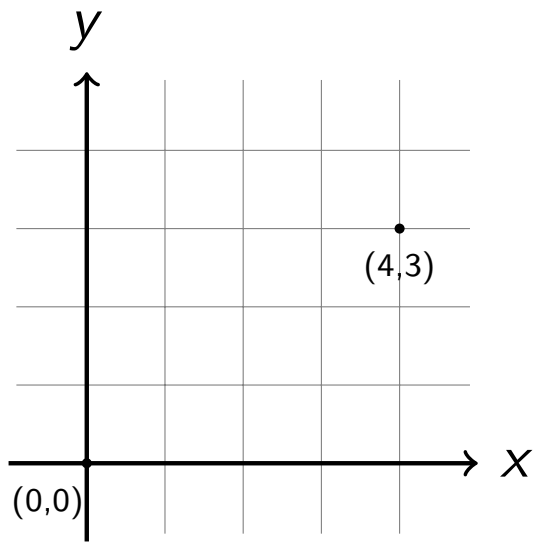
```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Variable

```
struct point pt;
```

Initialisation

- Set x-coordinate of `pt`.
  `pt.x = 4;`
- Set y-coordinate of `pt`.
  `pt.y = 3;`



Data type

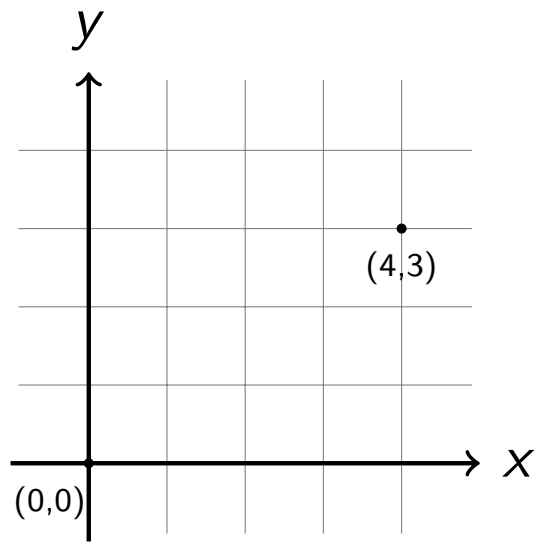
```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

Variable

```
struct point pt;
```

Initialisation

- Set x-coordinate of `pt`.
  `pt.x = 4;`
- Set y-coordinate of `pt`.
  `pt.y = 3;`
- `struct point or;`



Data type

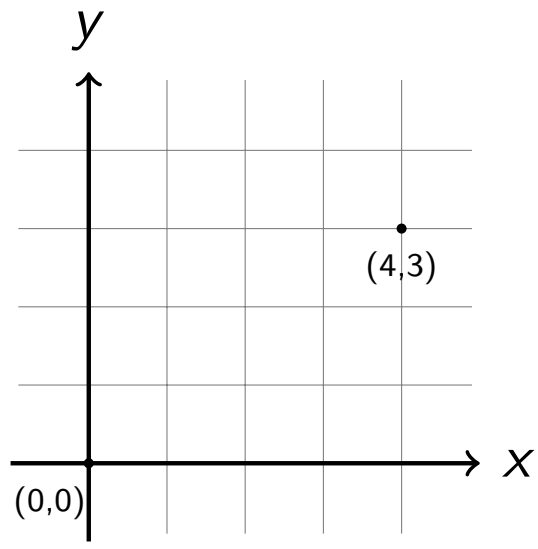
```
struct point {
  int x; /* x coordinate */
  int y; /* y coordinate */
};
```

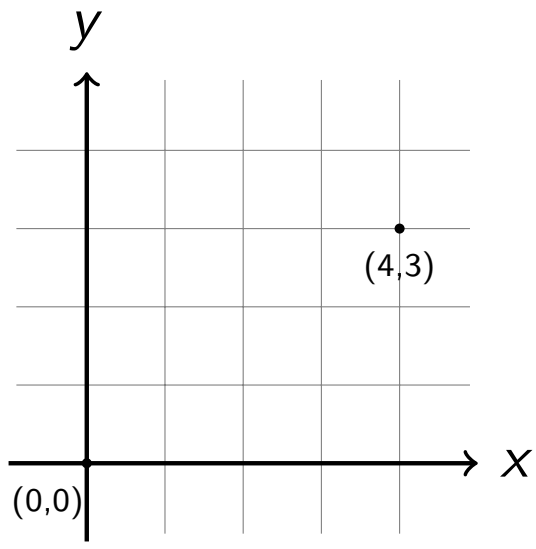
Variable

```
struct point pt;
```

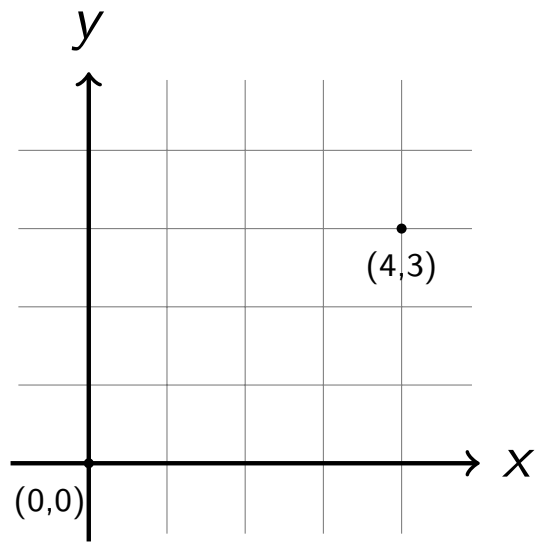
Initialisation

- Set x-coordinate of `pt`.
  `pt.x = 4;`
- Set y-coordinate of `pt`.
  `pt.y = 3;`
- `struct point or = {0,0};`


y
(4,3)
x
(0,0)

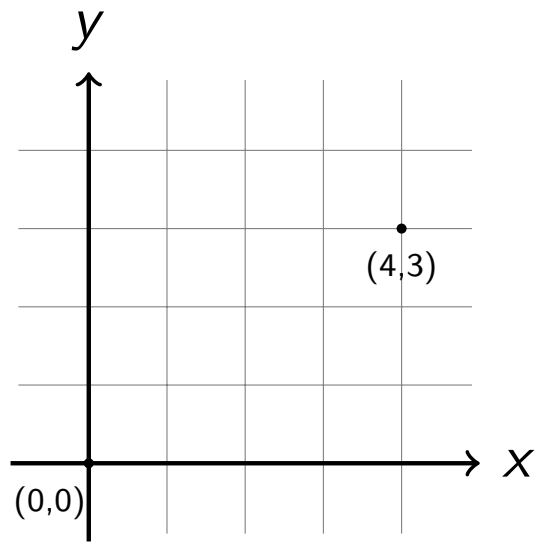


Distance



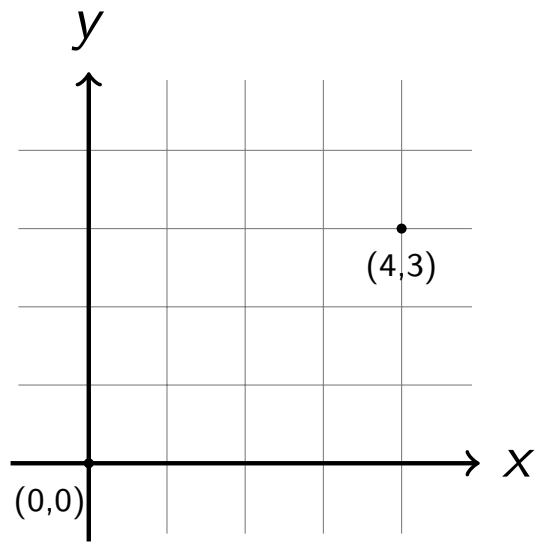
Distance

```
(pt.x - or.x)
```



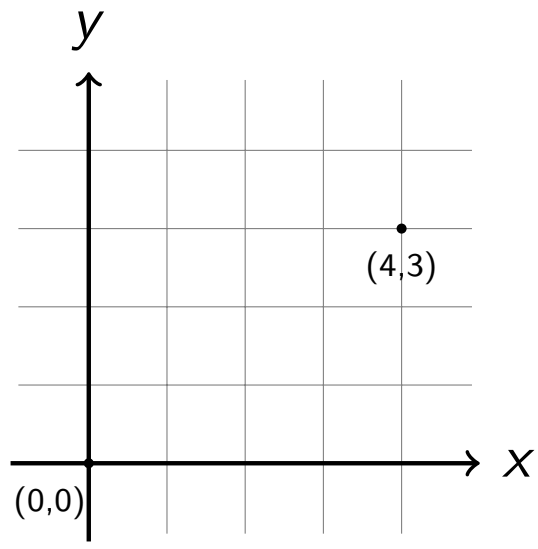
Distance

```
(pt.x - or.x) * (pt.x - or.x)
```



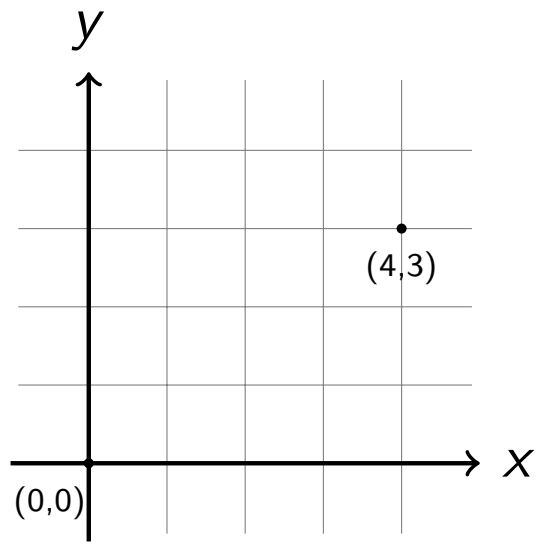
Distance

```
(pt.x - or.x) * (pt.x - or.x) + (pt.y - or.y) * (pt.y - or.y)
```



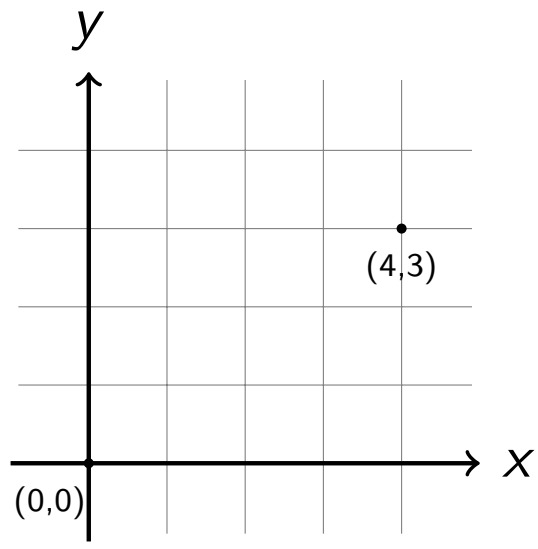
Distance

```
          sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y));
```



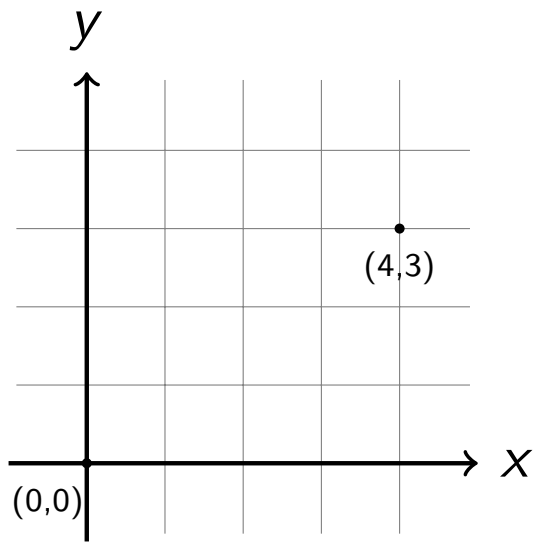
Distance

```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y));
```



Distance

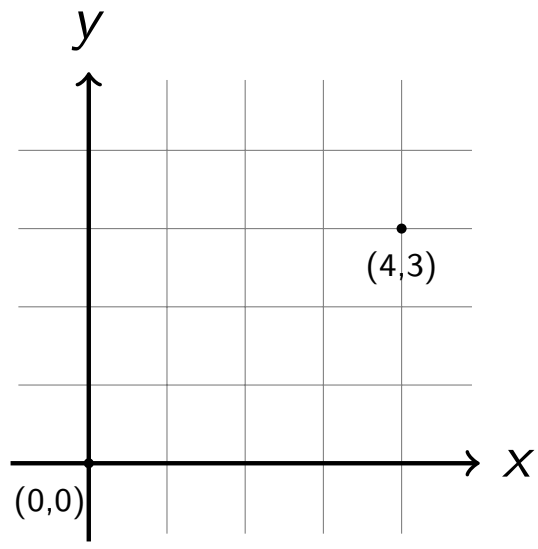
```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y)); /* include math.h */
```



Distance

```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y)); /* include math.h */

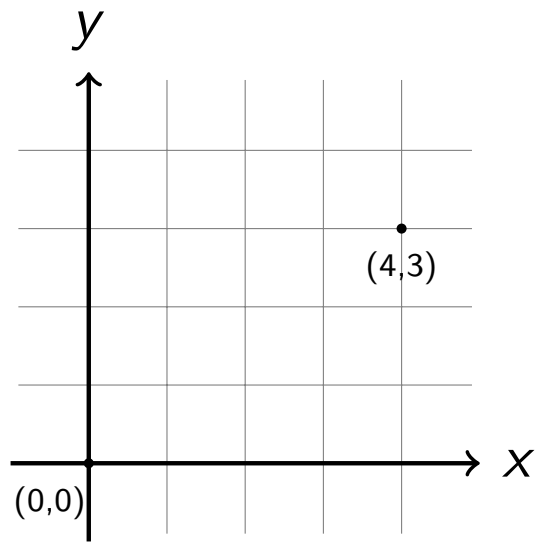
printf("First point :  %d %d", pt.x, pt.y);
```



Distance

```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y)); /* include math.h */

printf("First point :  %d %d", pt.x, pt.y); → 4 3
```

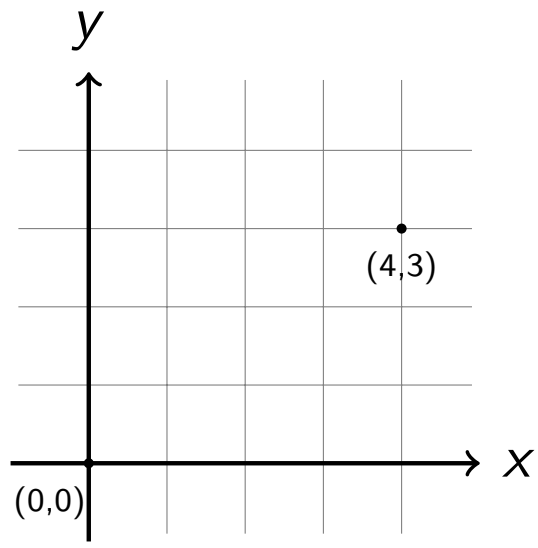


Distance

```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y)); /* include math.h */

printf("First point :  %d %d", pt.x, pt.y); → 4 3

printf("Second point :  %d %d", or.x, or.y);
```

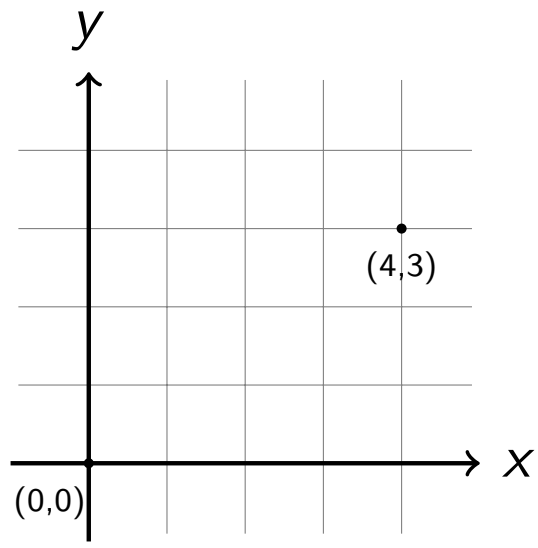


Distance

```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y)); /* include math.h */

printf("First point :  %d %d", pt.x, pt.y); → 4 3

printf("Second point :  %d %d", or.x, or.y); → 0 0
```



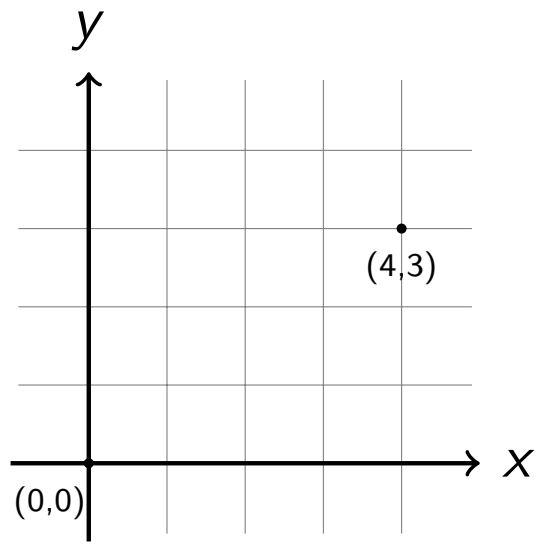
Distance

```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y)); /* include math.h */

printf("First point :  %d %d", pt.x, pt.y); → 4 3

printf("Second point :  %d %d", or.x, or.y); → 0 0

printf("Distance :  %f", d);
```



Distance

```
float d = sqrt((pt.x - or.x) * (pt.x - or.x) + (pt.y
- or.y) * (pt.y - or.y)); /* include math.h */

printf("First point :  %d %d", pt.x, pt.y); → 4 3

printf("Second point :  %d %d", or.x, or.y); → 0 0

printf("Distance :  %f", d); → 5.000000
```

```c
#include <stdio.h>


int main(void)
{









  return 0;
}
```

```c
#include <stdio.h>


int main(void)
{
  struct point {
    int x;
    int y;
  };









  return 0;
}
```

```c
#include <stdio.h>


int main(void)
{
  struct point {
    int x;
    int y;
  };
  struct point pt = {4,3};




  return 0;
}
```

```c
#include <stdio.h>


int main(void)
{
  struct point {
    int x;
    int y;
  };
  struct point pt = {4,3};
  struct point or = {0,0};




  return 0;
}
```

```
#include <stdio.h>


int main(void)
{
  struct point {
    int x;
    int y;
  };

  struct point pt = {4,3};
  struct point or = {0,0};

  float d = sqrt((pt.x - or.x) * (pt.x - or.x) +
(pt.y - or.y) * (pt.y - or.y));


  return 0;
}
```

```c
#include <stdio.h>
#include <math.h>

int main(void)
{
  struct point {
    int x;
    int y;
  };

  struct point pt = {4,3};
  struct point or = {0,0};

  float d = sqrt((pt.x - or.x) * (pt.x - or.x) +
(pt.y - or.y) * (pt.y - or.y));


  return 0;
}
```

```
#include <stdio.h>
#include <math.h>

int main(void)
{
  struct point {
    int x;
    int y;
  };

  struct point pt = {4,3};
  struct point or = {0,0};

  float d = sqrt((pt.x - or.x) * (pt.x - or.x) +
(pt.y - or.y) * (pt.y - or.y));

  printf("Distance :  %f", d);

  return 0;
}
```

```
dist()/* distance function */
{
}
```

```
dist(struct point pt1, struct point pt2)
{
}
```

```
dist(struct point pt1, struct point pt2)
{
  float d;
}
```

```
dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
}
```

```
dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
}
```

```
dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
float dist(struct point, struct point);
int main(void) {
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
float dist(struct point, struct point);
int main(void) {
  struct point {
    int x;
    int y;
  };
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
float dist(struct point, struct point);
int main(void) {
  struct point {
    int x;
    int y;
  };
  struct point pt = {4,3}, or = {0,0};
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
float dist(struct point, struct point);
int main(void) {
  struct point {
    int x;
    int y;
  };
  struct point pt = {4,3}, or = {0,0};
  dist(pt, or);
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
float dist(struct point, struct point);
int main(void) {
  struct point {
    int x;
    int y;
  };
  struct point pt = {4,3}, or = {0,0};
  printf("%f", dist(pt, or));
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
float dist(struct point, struct point);
int main(void) {
  struct point {
    int x;
    int y;
  };
  struct point pt = {4,3}, or = {0,0};
  printf("%f", dist(pt, or));
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

Compilation Error!

```
#include <stdio.h>
#include <math.h>
float dist(struct point, struct point);
int main(void) {
  struct point { /* local to main() */
    int x;
    int y;
  };
  struct point pt = {4,3}, or = {0,0};
  printf("%f", dist(pt, or));
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};
float dist(struct point, struct point);
int main(void) {
  struct point pt = {4,3}, or = {0,0};
  printf("%f", dist(pt, or));
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
struct point { /* both main() and dist() knows */
  int x;
  int y;
};
float dist(struct point, struct point);
int main(void) {
  struct point pt = {4,3}, or = {0,0};
  printf("%f", dist(pt, or));
  return 0;
}
float dist(struct point pt1, struct point pt2)
{
  float d;
  d = sqrt((pt1.x - pt2.x) * (pt1.x - pt2.x) + (pt1.y
- pt2.y) * (pt1.y - pt2.y));
  return d;
}
```

```
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  printf("%f", dist(pt, or));
  return 0;
}
```

```
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  printf("%f", dist(pt, or));
  return 0;
}
```

```c
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  struct point pts[2];
  printf("%f", dist(pt, or));
  return 0;
}
```

```c
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  struct point pts[2]; /* array of structs */
  printf("%f", dist(pt, or));
  return 0;
}
```

```c
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  struct point pts[2]; /* array of structs */
  pts[0].x = 4;
  printf("%f", dist(pt, or));
  return 0;
}
```

```c
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  struct point pts[2]; /* array of structs */
  pts[0].x = 4, pts[0].y = 3;
  printf("%f", dist(pt, or));
  return 0;
}
```

```c
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  struct point pts[2]; /* array of structs */
  pts[0].x = 4, pts[0].y = 3;
  pts[1].x = 0, pts[1].y = 0;
  printf("%f", dist(pt, or));
  return 0;
}
```

```
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  struct point pts[2]; /* array of structs */
  pts[0].x = 4, pts[0].y = 3;
  pts[1].x = 0, pts[1].y = 0;
  printf("%f", dist(pt, or));
  return 0;
}
```

```c
#include <stdio.h>
#include <math.h>
struct point {
  int x;
  int y;
};

int main(void)
{
  struct point pt = {4,3}, or = {0,0};
  struct point pts[2]; /* array of structs */
  pts[0].x = 4, pts[0].y = 3;
  pts[1].x = 0, pts[1].y = 0;
  printf("%f", dist(pts[0], pts[1]));
  return 0;
}
```