

# Selection Sort

# Selection Sort

0	1	2	3	4	5
9	2	7	0	4	6

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

0	1	2	3	4	5
9	2	7	0	4	6

n = 6

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

0	1	2	3	4	5
9	2	7	0	4	6

n = 6  
i =  
j =  
min =

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

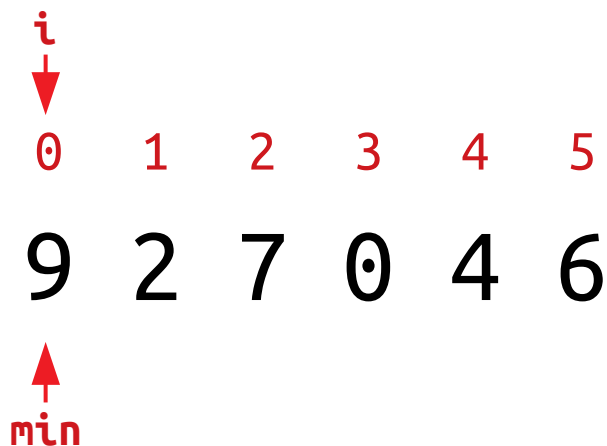
# Selection Sort

*i*  
↓  
0 1 2 3 4 5  
9 2 7 0 4 6

*n* = 6  
*i* = 0  
*j* =  
*min* =

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

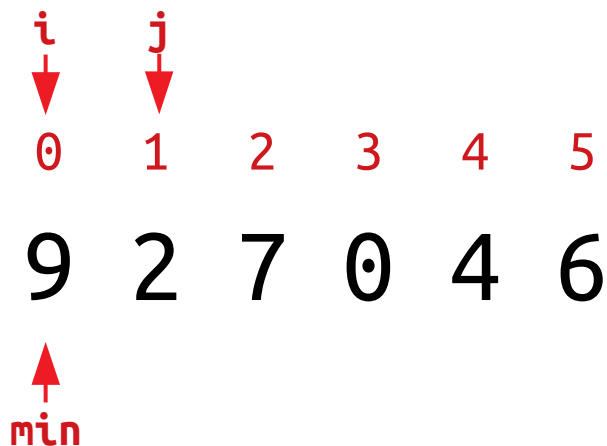
# Selection Sort



*n* = 6  
*i* = 0  
*j* =  
*min* = 0

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

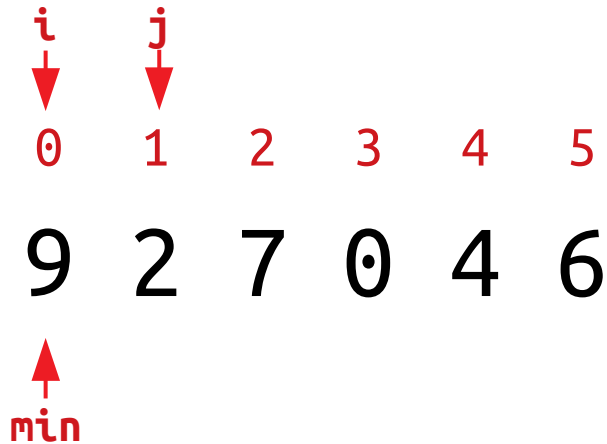
# Selection Sort



n = 6  
i = 0  
j = 1  
min = 0

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

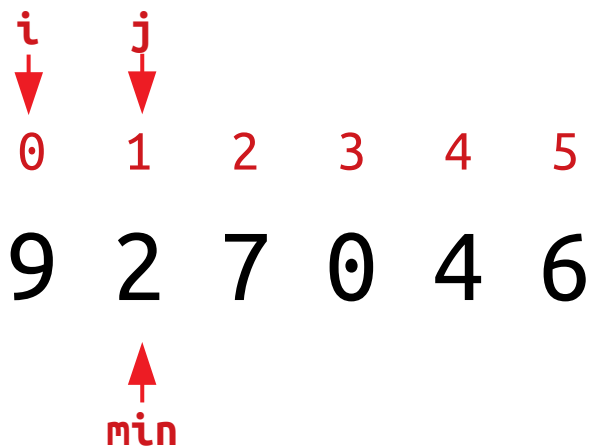


$n = 6$   
 $i = 0$   
 $j = 1$   
 $min = 0$

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```



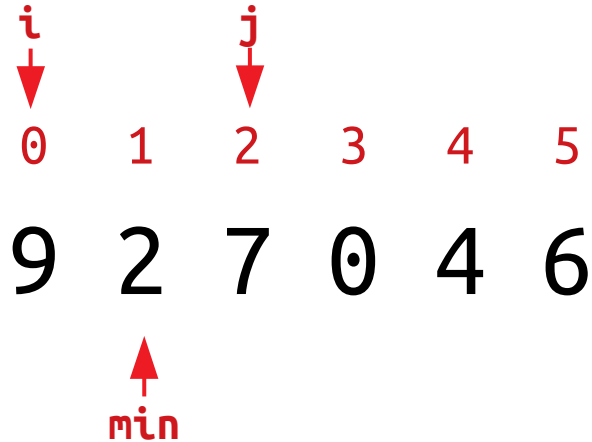
# Selection Sort



n = 6  
i = 0  
j = 1  
min = 1

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

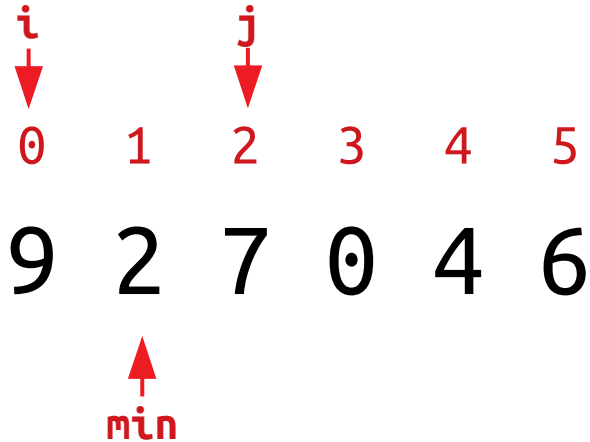
# Selection Sort



*n* = 6  
*i* = 0  
*j* = 2  
*min* = 1

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

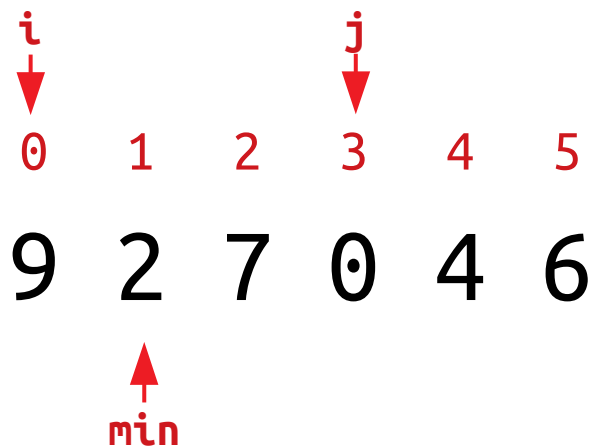
# Selection Sort



$n = 6$   
 $i = 0$   
 $j = 2$   
 $min = 1$

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

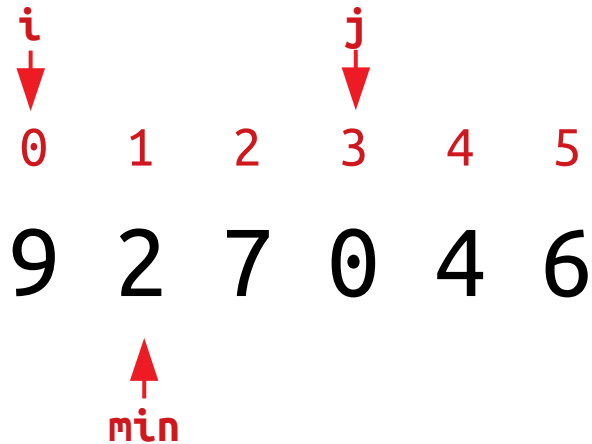
# Selection Sort



$n = 6$   
 $i = 0$   
 $j = 3$   
 $min = 1$

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

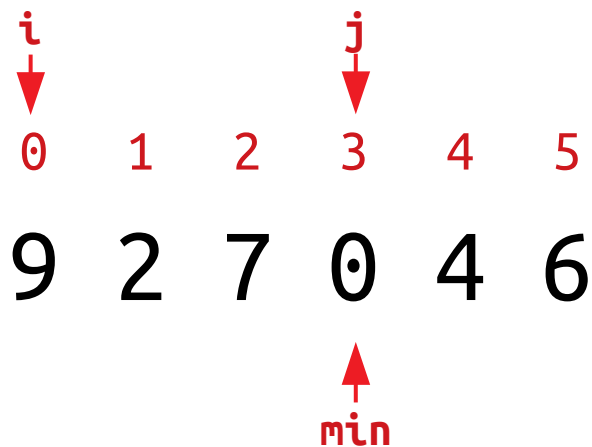
# Selection Sort



$n = 6$   
 $i = 0$   
 $j = 3$   
 $min = 1$

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
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        min = i;  
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            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

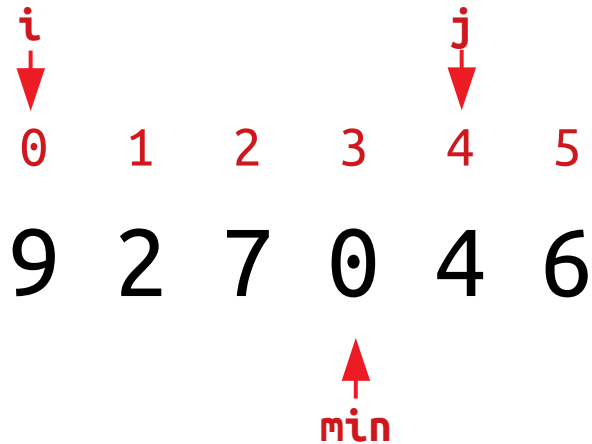
# Selection Sort



$n = 6$   
 $i = 0$   
 $j = 3$   
 $min = 3$

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

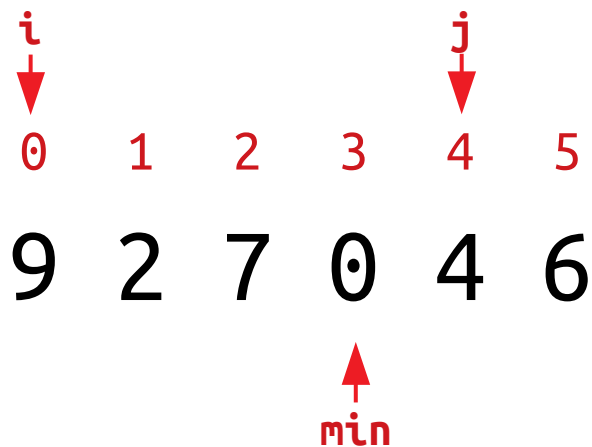
# Selection Sort



$n = 6$   
 $i = 0$   
 $j = 4$   
 $min = 3$

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

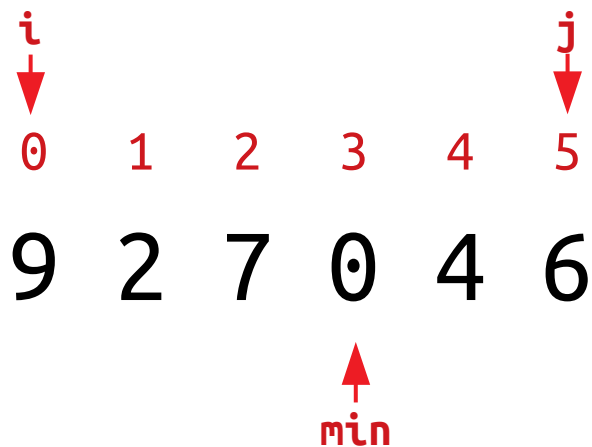


$n = 6$   
 $i = 0$   
 $j = 4$   
 $min = 3$

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```



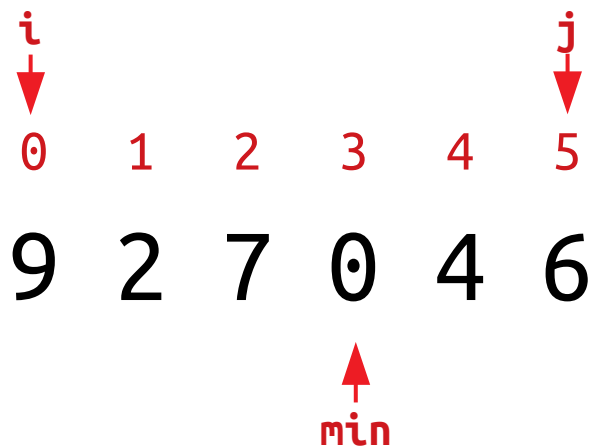
# Selection Sort



n = 6  
i = 0  
j = 5  
min = 3

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

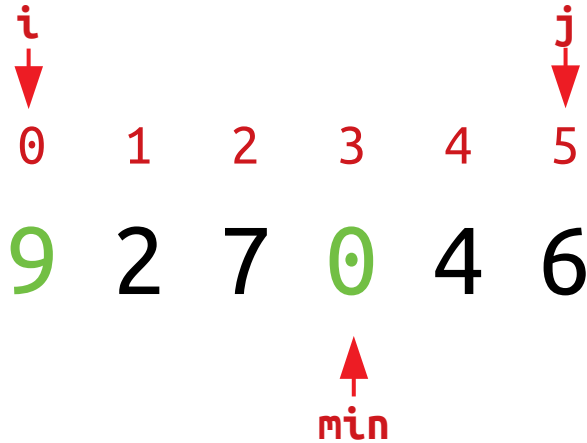
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min = 3

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
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            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

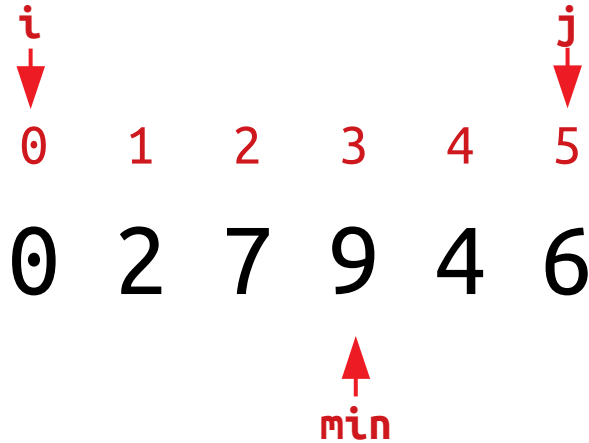
# Selection Sort



n = 6  
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void selectionSort(int *arr, int n) {  
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            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

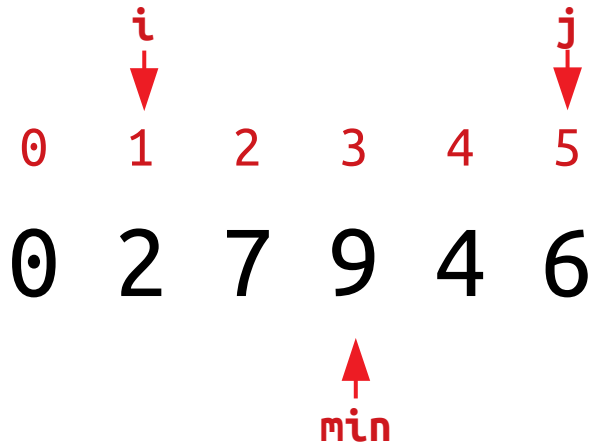
# Selection Sort



n = 6  
i = 0  
j = 5  
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```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
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                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

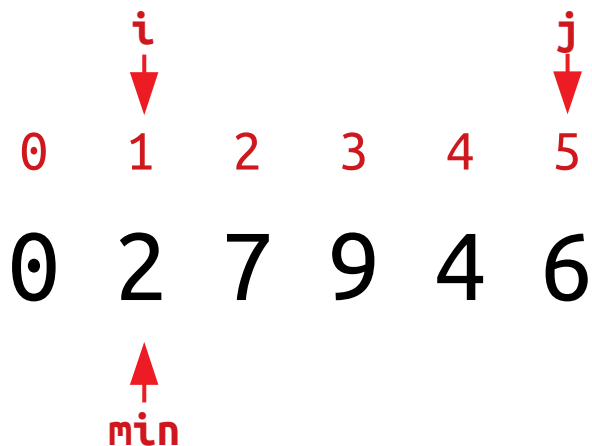
# Selection Sort



**n = 6**  
**i = 1**  
**j = 5**  
**min = 3**

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

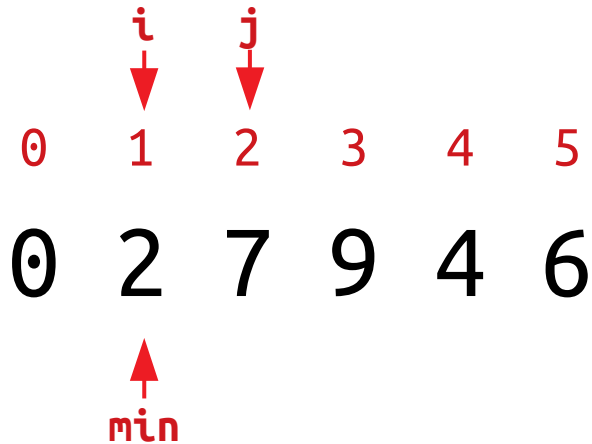
# Selection Sort



n = 6  
i = 1  
j = 5  
min = 1

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
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            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

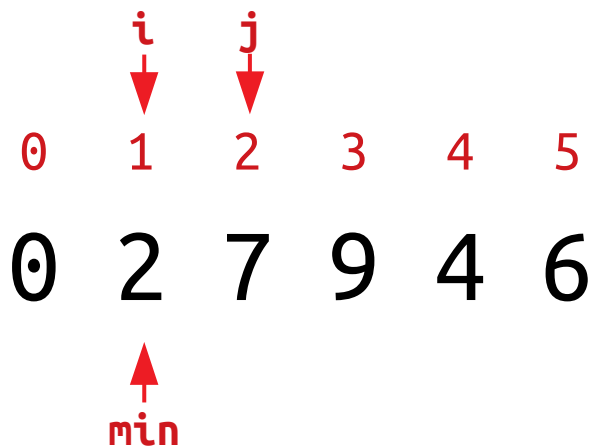
# Selection Sort



n = 6  
i = 1  
j = 2  
min = 1

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

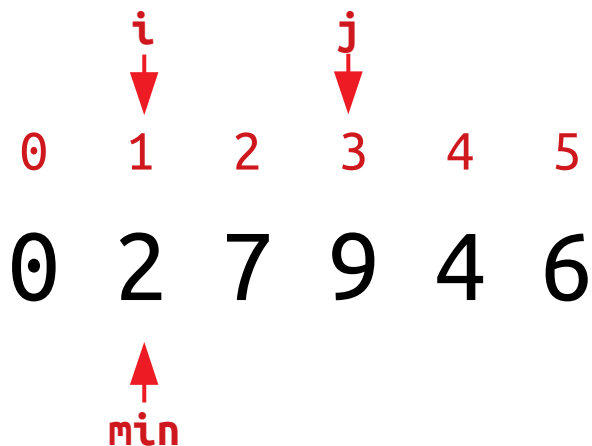


n = 6  
i = 1  
j = 2  
min = 0

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```



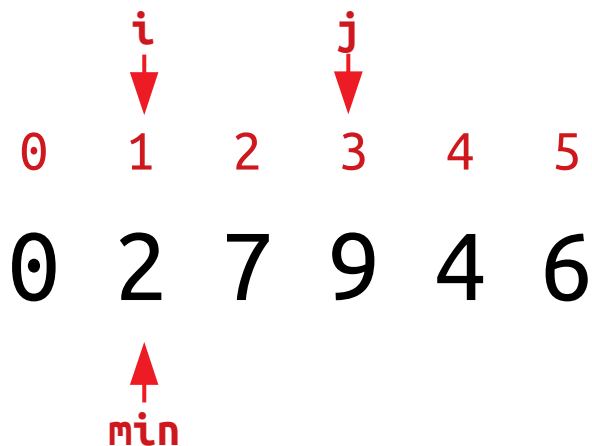
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$n = 6$   
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void selectionSort(int *arr, int n) {  
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                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

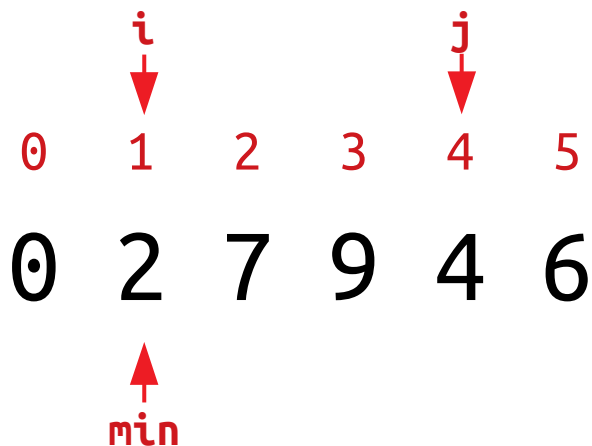
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n = 6  
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            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

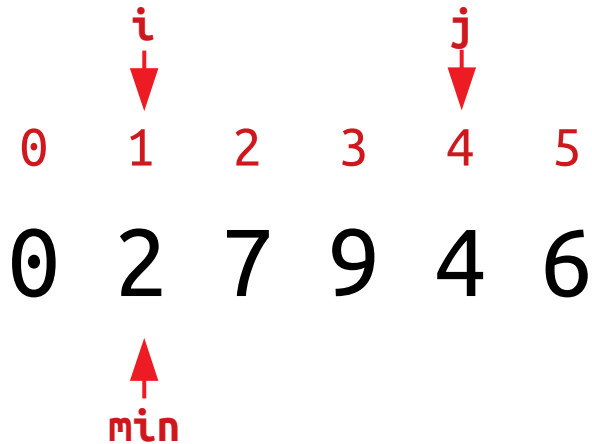
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n = 6  
i = 1  
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```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
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            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
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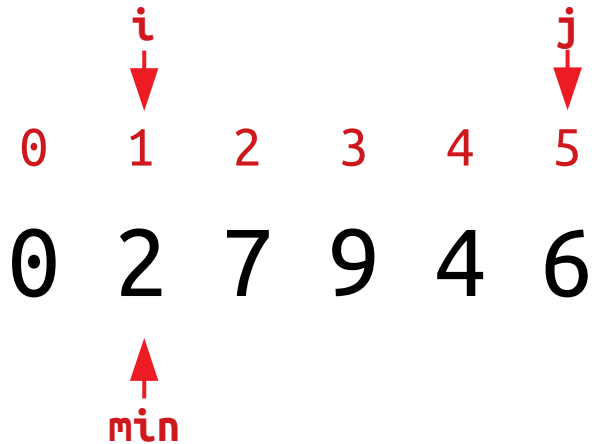
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            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
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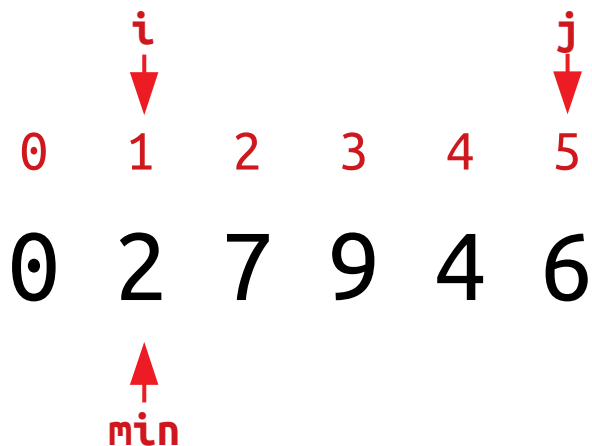
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n = 6  
i = 1  
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void selectionSort(int *arr, int n) {  
    int i, j, min;  
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        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
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                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

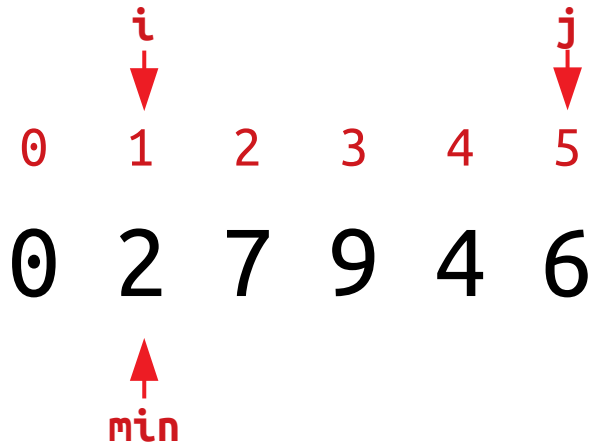
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            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

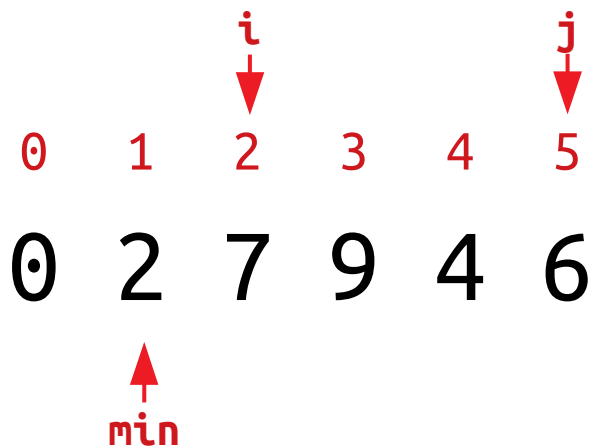
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n = 6  
i = 1  
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min = 1

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
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        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

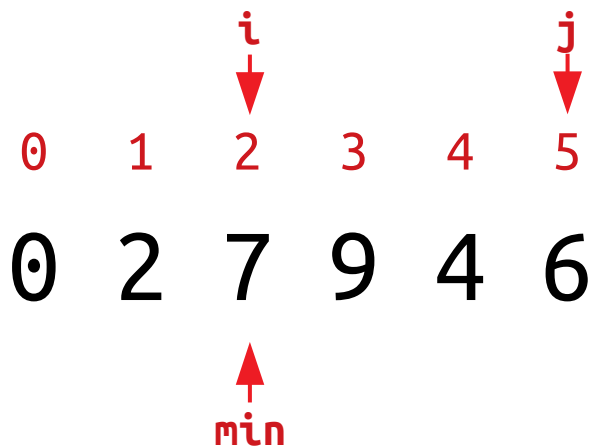


n = 6  
i = 2  
j = 5  
min = 1

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```



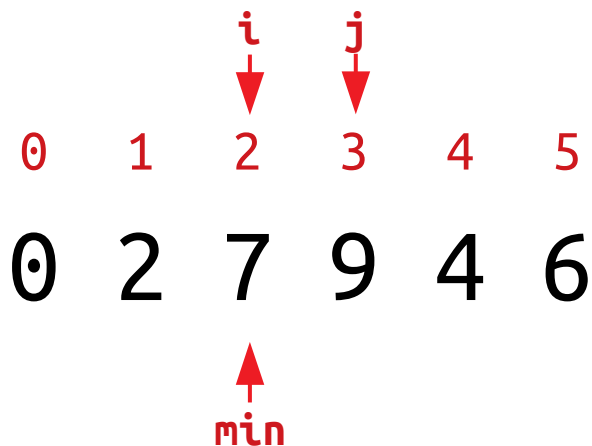
# Selection Sort



n = 6  
i = 2  
j = 5  
min = 2

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

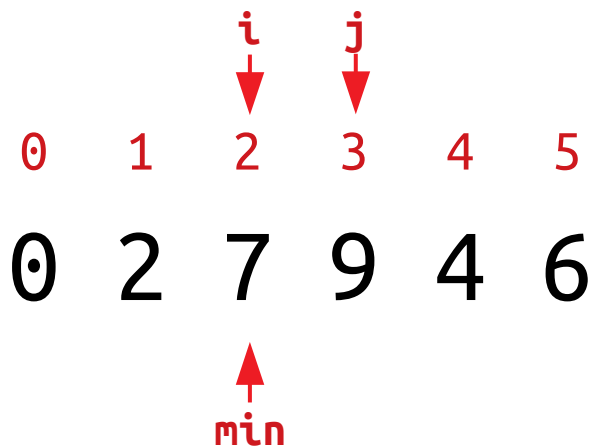
# Selection Sort



n = 6  
i = 2  
j = 3  
min = 2

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

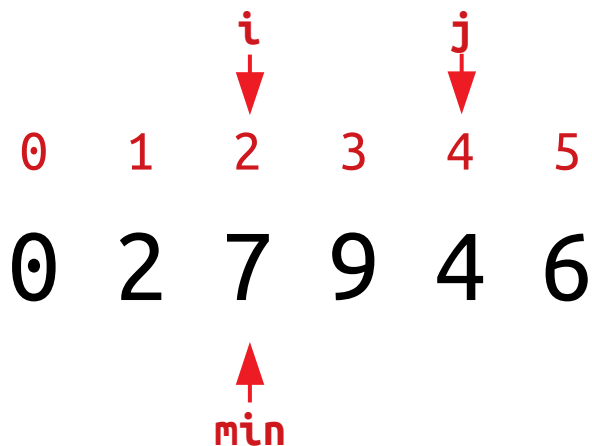
# Selection Sort



n = 6  
i = 2  
j = 3  
min = 2

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

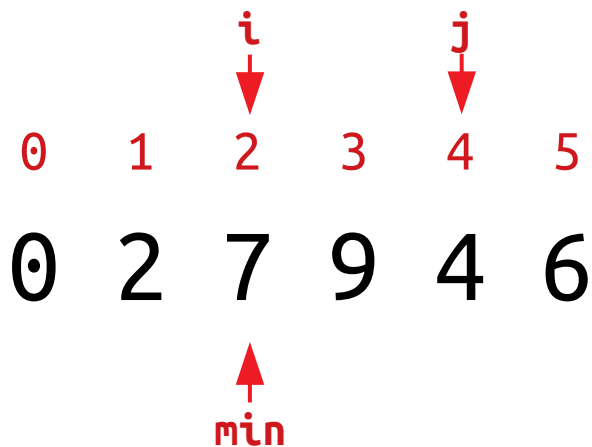
# Selection Sort



n = 6  
i = 2  
j = 4  
min = 2

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

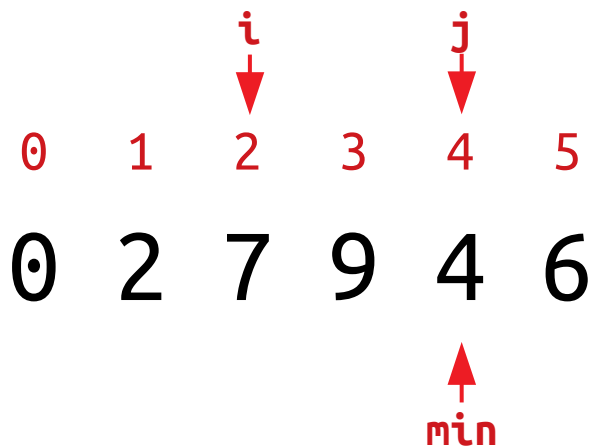
# Selection Sort



n = 6  
i = 2  
j = 4  
min = 2

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

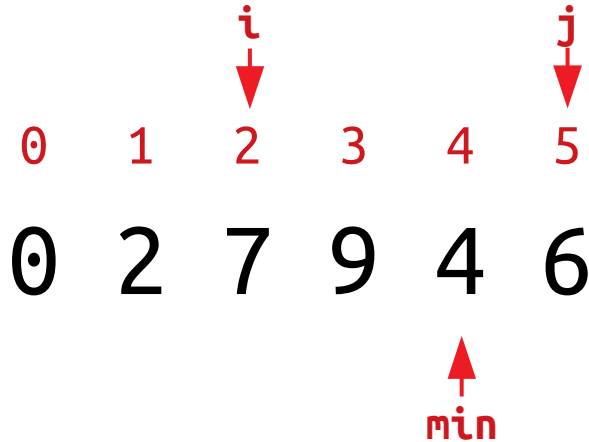
# Selection Sort



n = 6  
i = 2  
j = 4  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

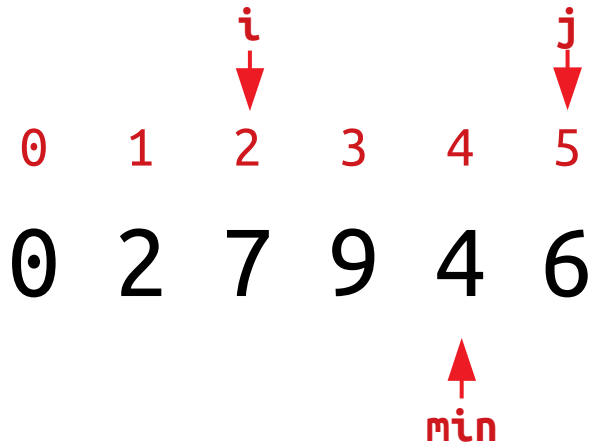
# Selection Sort



n = 6  
i = 2  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

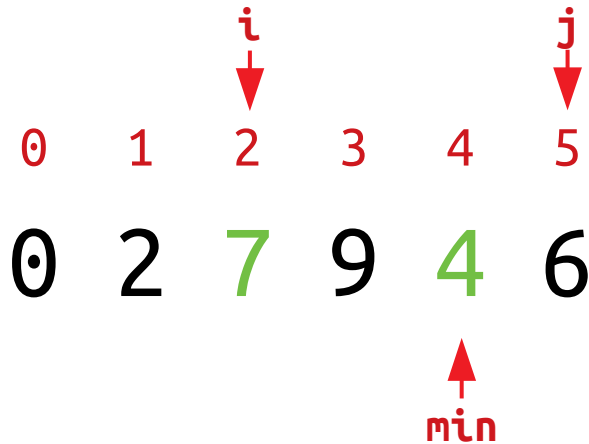


n = 6  
i = 2  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```



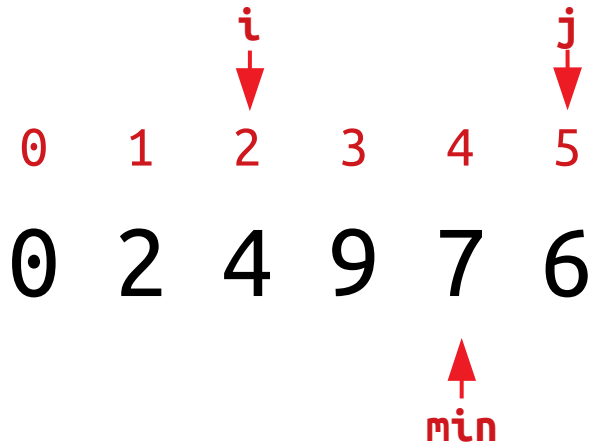
# Selection Sort



n = 6  
i = 2  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

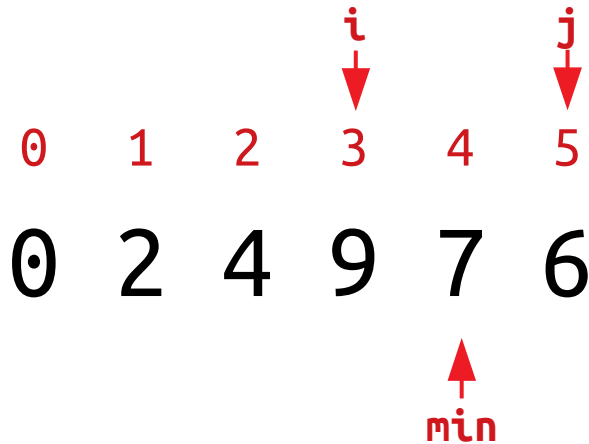
# Selection Sort



n = 6  
i = 2  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

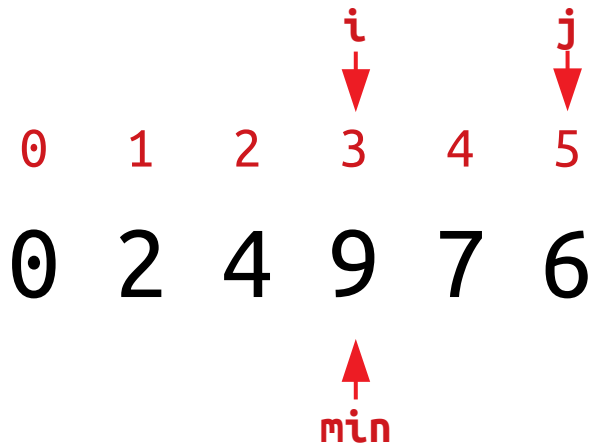
# Selection Sort



n = 6  
i = 3  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

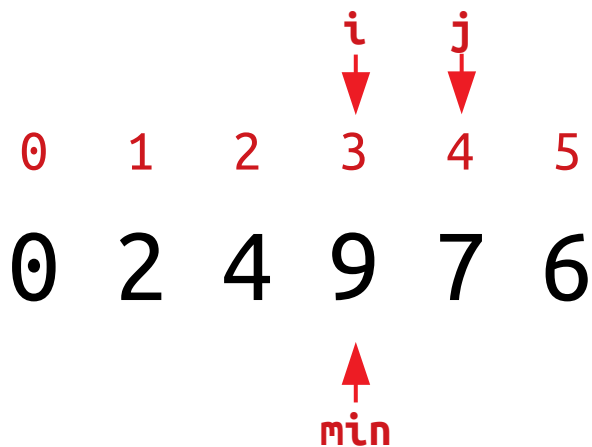
# Selection Sort



n = 6  
i = 3  
j = 5  
min = 3

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

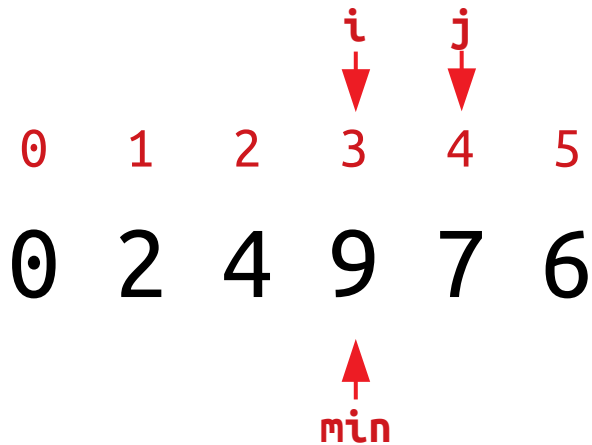
# Selection Sort



n = 6  
i = 3  
j = 4  
min = 3

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

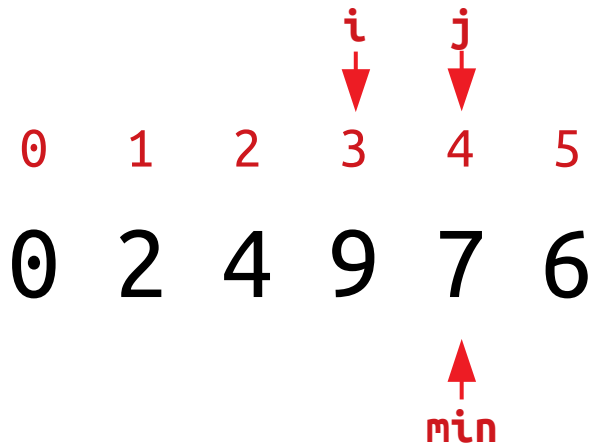
# Selection Sort



n = 6  
i = 3  
j = 4  
min = 3

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

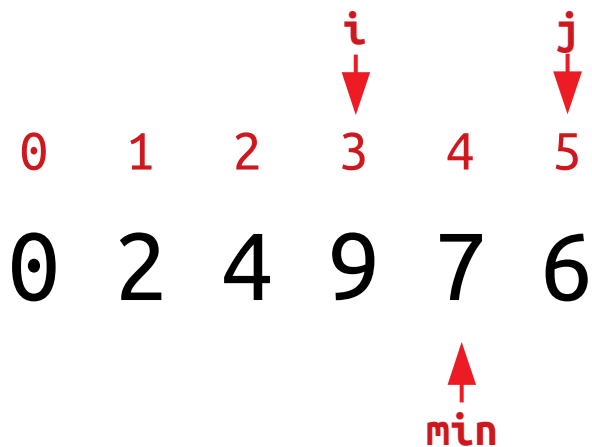
# Selection Sort



n = 6  
i = 3  
j = 4  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

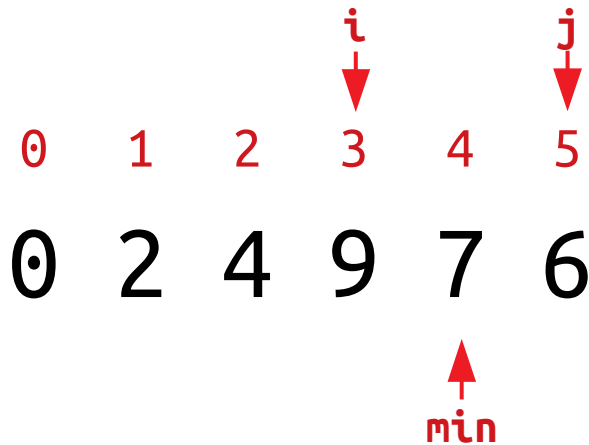


n = 6  
i = 3  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```



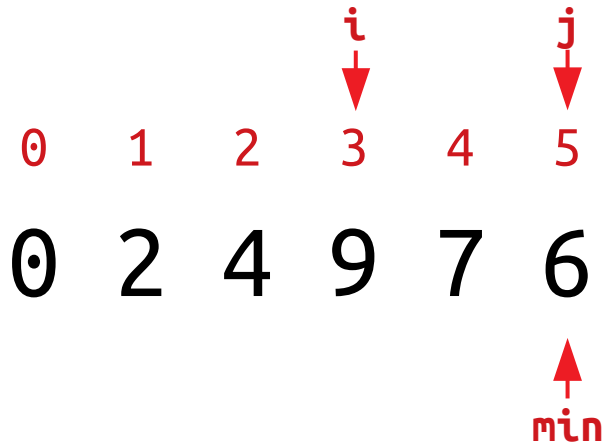
# Selection Sort



n = 6  
i = 3  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

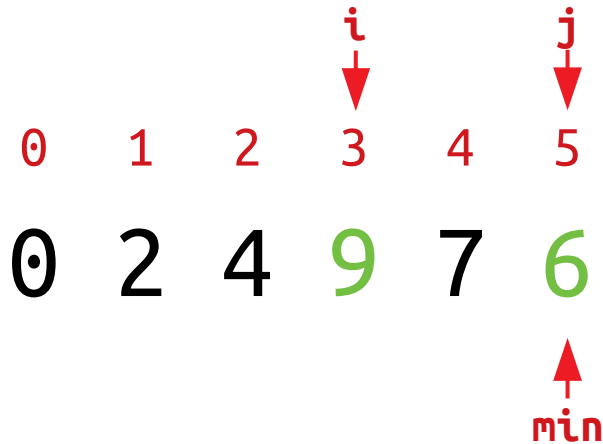
# Selection Sort



n = 6  
i = 3  
j = 5  
min = 5

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

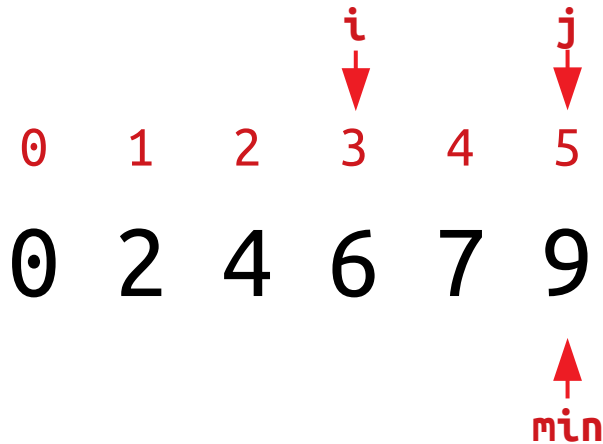
# Selection Sort



n = 6  
i = 3  
j = 5  
min = 5

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

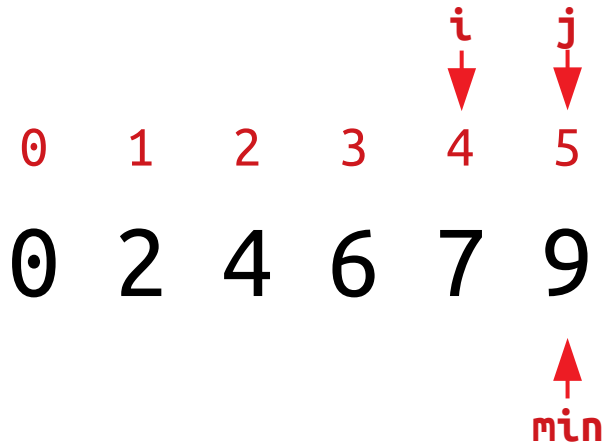
# Selection Sort



n = 6  
i = 3  
j = 5  
min = 5

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

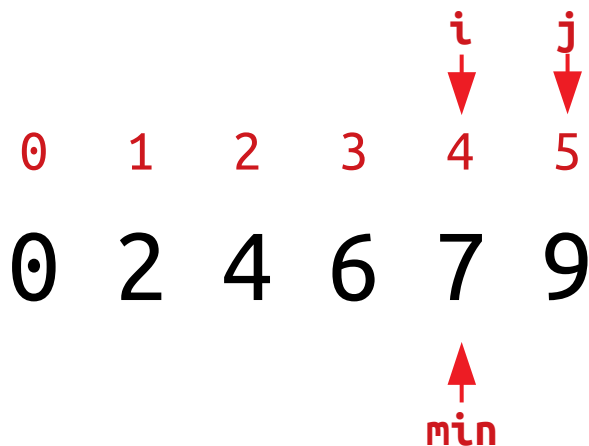
# Selection Sort



n = 6  
i = 4  
j = 5  
min = 5

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

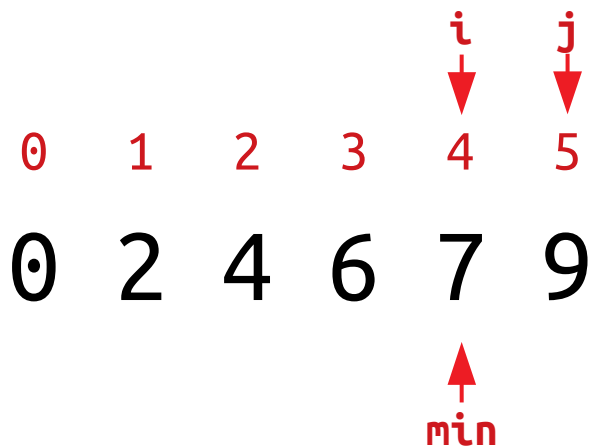
# Selection Sort



n = 6  
i = 4  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

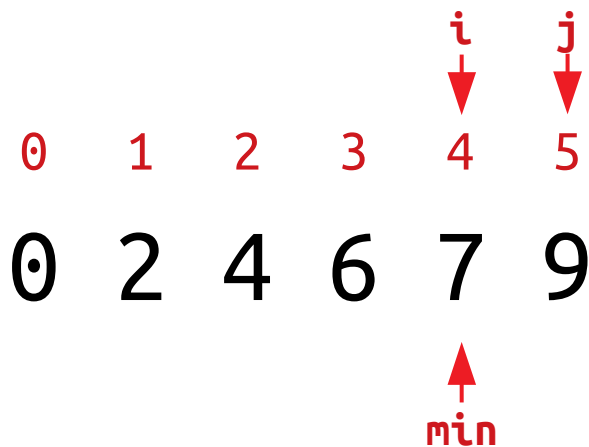
# Selection Sort



n = 6  
i = 4  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

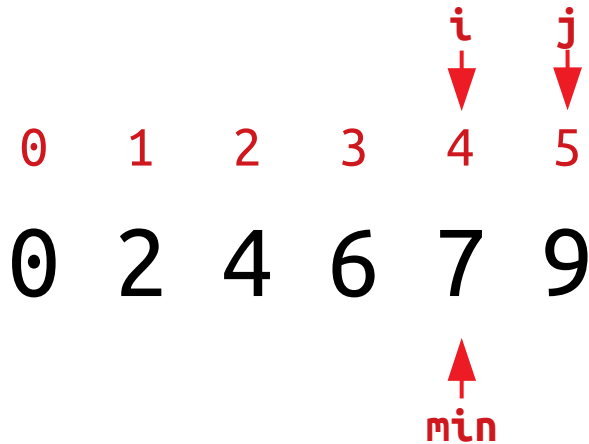


n = 6  
i = 4  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```



# Selection Sort



n = 6  
i = 4  
j = 5  
min = 4

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```

# Selection Sort

0	1	2	3	4	5
0	2	4	6	7	9

Ordered!

```
void selectionSort(int *arr, int n) {  
    int i, j, min;  
    for (i = 0 ; i < n - 1 ; i++) {  
        min = i;  
        for (j = i + 1 ; j < n ; j++) {  
            if (arr[j] < arr[min]) {  
                min = j;  
            }  
        }  
        swap(&arr[i], &arr[min]);  
    }  
}
```