Cheatography

C++ Pointers cookbook Cheat Sheet

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Array of Pointers

int *ptr[arraysize] = array of pointers, pointing to int

Pointer to function

```
int (*FuncPTR)(int a,int b);
//called funcptr is a pointer to function
// actually is used as a parameter of another func and can pass any func to the desired func as a parameter with this method
int func1(int);
int func2(int);
int func3(int (*FuncPTR)(int));
now we can pass func1 or func2 to func3 ;
```

Array of Pointers to functions

```
void (*f[3])(int)= {function1,function2,function3};
// f is an array of pointers , pointing to functions of type void which all of them take one parameter of type int .
```

Pointer vs array

```
int b[10]; int *bptr;
bptr=b; OR bptr=&b[0];
*(bptr+3) // shows the value of b[3]
 bptr+3 // points to &b[3]
//an array can be used like a pointer too -> *(b+3)-=value of b[3]
//pointer to an array can be used like an array -> bptr[3] = value of b[3]
```

NULL pointer

```
int *ptr = NULL;
//The value of ptr is 0
if(ptr) // succeeds if p is not null
if(!ptr) // succeeds if p is null
```

passing pointers to functions

WHEN PASSING ARGUMENTS

```
   unsigned long sec;
   getSeconds( &sec );
```

IN FUNCTION HEADER

```
void getSeconds(unsigned long *par)
```

Pointer to pointer

```
A pointer to a pointer is a form of multiple indirection or a chain of pointers
   int var;
   int *ptr;
   int **pptr;
   var = 3000;
   ptr = &var; // take the address of var
   pptr = &ptr;// take the address of ptr using address of operator &
```

Return pointer from functions

```
int * getRandom( ) {
   static int r[10];
   return r;
}
// main function to call above defined function.
int main () {
   int *p;
   p = getRandom();
   }
```

Array of strings

```
char *color= {"red","blue","yellow','green"};
//color is an array of pointers , pointing to the first character of each string
```

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