C library macro - offsetof()

Description

The C library macro **offsetof(type, member-designator)** results in a constant integer of type **size_t** which is the offset in bytes of a structure member from the beginning of the structure. The member is given by member-designator, and the name of the structure is given in type.

Declaration

Following is the declaration for offsetof() Macro.

```
offsetof(type, member-designator)
```

Parameters

- **type** − This is the class type in which member-designator is a valid member designator.
- **member-designator** − This is the member designator of class type.

Return Value

This macro returns the value of type **size_t** which is the offset value of member in type.

Example

The following example shows the usage of offsetof() Macro.

Live Demo

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

struct address {
   char name[50];
   char street[50];
   int phone;
};

int main () {
   printf("name offset = %d byte in address structure.\n",
   offsetof(struct address, name));

   printf("street offset = %d byte in address structure.\n",
   offsetof(struct address, street));
```

```
   printf("phone offset = %d byte in address structure.\n",
   offsetof(struct address, phone));

   return(0);
}
```

Let us compile and run the above program, this will produce the following result −

```
name offset = 0 byte in address structure.
street offset = 50 byte in address structure.
phone offset = 100 byte in address structure.
```