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## Text output of gprof with callgraph and code annotate

Flat profile:

Each sample counts as 0.01 seconds.

no time accumulated

```
% cumulative self
                             self
                                    total
time seconds seconds calls Ts/call Ts/call name
 0.00
         0.00
                0.00
                       1030
                               0.00
                                       0.00
__gnu_cxx::__enable_if<std::__is_integer<int>::__value, double>::__type std::sqrt<int>(int)
 0.00
         0.00
                0.00
                        799
                               0.00
                                      0.00 std::vector<int, std::allocator<int> >::operator[]
(unsigned long)
 0.00
         0.00
                                      0.00 std::vector<int, std::allocator<int>>::size() const
                0.00
                        405
                               0.00
 0.00
         0.00
                                      0.00 std::vector<int, std::allocator<int> >::operator[]
                0.00
                        200
                               0.00
(unsigned long) const
 0.00
         0.00
                0.00
                        100
                               0.00
                                      0.00 isOdd(int)
 0.00
         0.00
                0.00
                        100
                                      0.00 isPrime(int)
                               0.00
 0.00
         0.00
                0.00
                        100
                               0.00
                                      0.00 factorial(int)
 0.00
         0.00
                0.00
                             0.00
                                     0.00 __gnu_cxx::new_allocator<int>::~new_allocator()
                         6
 0.00
         0.00
                0.00
                             0.00
                                     0.00 std::allocator<int>::~allocator()
                         6
         0.00
 0.00
                0.00
                             0.00
                                     0.00
                         4
__gnu_cxx::new_allocator<int>::new_allocator(__gnu_cxx::new_allocator<int> const&)
 0.00
         0.00
                0.00
                                     0.00 gnu cxx::new allocator<int>:: M max size() const
                             0.00
 0.00
         0.00
                0.00
                         4
                             0.00
                                     0.00 std::allocator<int>::allocator(std::allocator<int>
const&)
 0.00
         0.00
                0.00
                         4
                             0.00
                                     0.00 std::_Vector_base<int, std::allocator<int>
>::_M_get_Tp_allocator()
 0.00
         0.00
                         2
                                     0.00 __gnu_cxx::new_allocator<int>::deallocate(int*,
                0.00
                             0.00
unsigned long)
```

```
long, void const*)
 0.00
         0.00
                0.00
                              0.00
                                     0.00 __gnu_cxx::new_allocator<int>::new_allocator()
                          2
 0.00
         0.00
                0.00
                              0.00
                                     0.00 __gnu_cxx::new_allocator<int>::max_size() const
                          2
 0.00
         0.00
                0.00
                                     0.00 std::allocator<int>::allocator()
                          2
                              0.00
 0.00
                                     0.00 void std:: Destroy aux<true>:: destroy<int*>(int*,
         0.00
                0.00
                          2
                              0.00
int*)
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::_Vector_base<int, std::allocator<int>
>::_M_allocate(unsigned long)
         0.00
                0.00
                          2
                              0.00
                                     0.00 std:: Vector base<int, std::allocator<int>
 0.00
>::_Vector_impl::_Vector_impl(std::allocator<int> const&)
                0.00
                          2
                              0.00
                                     0.00 std::_Vector_base<int, std::allocator<int>
 0.00
         0.00
>::_Vector_impl::~_Vector_impl()
 0.00
         0.00
                0.00
                                     0.00 std:: Vector base<int, std::allocator<int>
                          2
                              0.00
>::_M_deallocate(int*, unsigned long)
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::_Vector_base<int, std::allocator<int>
>::_M_create_storage(unsigned long)
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::_Vector_base<int, std::allocator<int>
>::_Vector_impl_data::_Vector_impl_data()
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&)
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::_Vector_base<int, std::allocator<int>
>::~_Vector_base()
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::allocator_traits<std::allocator<int>
>::deallocate(std::allocator<int>&, int*, unsigned long)
         0.00
 0.00
                0.00
                              0.00
                                     0.00 std::allocator traits<std::allocator<int>
>::allocate(std::allocator<int>&, unsigned long)
                                     0.00 std::allocator_traits<std::allocator<int>
 0.00
         0.00
                0.00
                          2
                              0.00
>::max_size(std::allocator<int> const&)
 0.00
                0.00
                              0.00
                                     0.00 int*
         0.00
                          2
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned long>(int*, unsigned
long)
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::vector<int, std::allocator<int>
>:: S max size(std::allocator<int> const&)
 0.00
         0.00
                0.00
                          2
                              0.00
                                     0.00 std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&)
```

0.00 \_\_gnu\_cxx::new\_allocator<int>::allocate(unsigned

0.00

0.00

0.00

2

0.00

```
0.00
         0.00
                0.00
                         2
                              0.00
                                     0.00 std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long)
 0.00
         0.00
                0.00
                              0.00
                                     0.00 std::vector<int, std::allocator<int>>::vector(unsigned
long, std::allocator<int> const&)
 0.00
         0.00
                0.00
                                     0.00 std::vector<int, std::allocator<int>>::~vector()
                         2
                              0.00
 0.00
         0.00
                0.00
                              0.00
                                     0.00 void std::_Construct<int>(int*)
                         2
 0.00
         0.00
                0.00
                         2
                              0.00
                                     0.00 int* std:: fill n a<int*, unsigned long, int>(int*,
unsigned long, int const&, std::random_access_iterator_tag)
 0.00
         0.00
                0.00
                              0.00
                                     0.00 int* std::__addressof<int>(int&)
                         2
 0.00
         0.00
                0.00
                              0.00
                                     0.00 std:: size to integer(unsigned long)
                         2
                                     0.00 std::iterator_traits<int*>::iterator_category
 0.00
         0.00
                0.00
                         2
                              0.00
std::__iterator_category<int*>(int* const&)
                                     0.00 int* std:: uninitialized default n<int*, unsigned
 0.00
         0.00
                0.00
                              0.00
                         2
long>(int*, unsigned long)
         0.00
                                     0.00 int* std::__uninitialized_default_n_a<int*, unsigned
 0.00
                0.00
                         2
                              0.00
long, int>(int*, unsigned long, std::allocator<int>&)
 0.00
         0.00
                0.00
                         2
                              0.00
                                     0.00 unsigned long const& std::min<unsigned
long>(unsigned long const&, unsigned long const&)
                                     0.00 int* std::fill n<int*, unsigned long, int>(int*, unsigned
 0.00
         0.00
                0.00
                         2
                              0.00
long, int const&)
                                     0.00 void std::_Destroy<int*>(int*, int*)
 0.00
         0.00
                0.00
                         2
                              0.00
 0.00
         0.00
                0.00
                         2
                              0.00
                                     0.00 void std:: Destrov<int*, int>(int*, int*.
std::allocator<int>&)
 0.00
         0.00
                0.00
                                     0.00 void std::__fill_a<int*, int>(int*, int*, int const&)
                         2
                              0.00
 0.00
         0.00
                0.00
                         2
                                     0.00 __gnu_cxx::__enable_if<std::__is_scalar<int>::__value,
                              0.00
void>::__type std::__fill_a1<int*, int>(int*, int*, int const&)
 0.00
         0.00
                0.00
                              0.00
                                     0.00 operator new(unsigned long, void*)
                         2
 0.00
         0.00
                0.00
                              0.00
                                     0.00 computeAverage(std::vector<int, std::allocator<int> >
                         1
const&)
 0.00
         0.00
                0.00
                         1
                              0.00
                                     0.00 computePrefixSum(std::vector<int, std::allocator<int> >
const&)
 0.00
         0.00
                0.00
                              0.00
                                     0.00 generateRandomNumbers(int, int, int)
                         1
 0.00
         0.00
                                     0.00 static initialization and destruction 0(int, int)
                0.00
                         1
                              0.00
```

%

time program used by this function.

cumulative a running sum of the number of seconds accounted seconds for by this function and those listed above it.

self the number of seconds accounted for by this seconds function alone. This is the major sort for this listing.

calls the number of times this function was invoked, if this function is profiled, else blank.

self the average number of milliseconds spent in this ms/call function per call, if this function is profiled, else blank.

total the average number of milliseconds spent in this ms/call function and its descendents per call, if this function is profiled, else blank.

name the name of the function. This is the minor sort for this listing. The index shows the location of the function in the gprof listing. If the index is in parenthesis it shows where it would appear in the gprof listing if it were to be printed.

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## Call graph (explanation follows)

granularity: each sample hit covers 4 byte(s) no time propagated

```
index % time self children called
                                     name
         0.00 0.00 1030/1030
                                    isPrime(int) [13]
[8]
      0.0 0.00 0.00 1030
                                 __gnu_cxx::__enable_if<std::__is_integer<int>::__value,
double>::__type std::sqrt<int>(int) [8]
         0.00 0.00
                      100/799
                                   generateRandomNumbers(int, int, int) [60]
         0.00 0.00
                                   computePrefixSum(std::vector<int, std::allocator<int> >
                      199/799
const&) [59]
         0.00 0.00
                                   main [6]
                      500/799
[9]
      0.0 0.00 0.00
                        799
                                 std::vector<int, std::allocator<int>>::operator[](unsigned long)
[9]
         0.00 0.00
                      101/405
                                   computePrefixSum(std::vector<int, std::allocator<int>>
const&) [59]
         0.00 0.00
                                   computeAverage(std::vector<int, std::allocator<int> >
                      102/405
const&) [58]
         0.00 0.00
                      202/405
                                  main [6]
[10] 0.0 0.00 0.00 405
                                 std::vector<int, std::allocator<int>>::size() const [10]
         0.00 0.00
                                   computePrefixSum(std::vector<int, std::allocator<int> >
                      100/200
const&) [59]
         0.00 0.00
                      100/200
                                   computeAverage(std::vector<int, std::allocator<int> >
const&) [58]
[11] 0.0 0.00 0.00
                         200
                                 std::vector<int, std::allocator<int> >::operator[](unsigned long)
const [11]
         0.00 0.00 100/100
                                  main [6]
[12] 0.0 0.00 0.00 100
                                 isOdd(int) [12]
```

```
0.00 0.00 100/100
                                   main [6]
[13]
      0.0 0.00 0.00 100
                                  isPrime(int) [13]
         0.00 0.00 1030/1030
                                     __gnu_cxx::__enable_if<std::__is_integer<int>::__value,
double>::__type std::sqrt<int>(int) [8]
         0.00 \quad 0.00
                     100/100
                                   main [6]
      0.0 0.00 0.00
                         100
                                  factorial(int) [14]
[14]
         0.00 0.00
                        6/6
                                 std::allocator<int>::~allocator() [16]
      0.0 0.00 0.00
                                 __gnu_cxx::new_allocator<int>::~new_allocator() [15]
[15]
                          6
         0.00 0.00
                        1/6
                                 generateRandomNumbers(int, int, int) [60]
         0.00 0.00
                        1/6
                                 computePrefixSum(std::vector<int, std::allocator<int> >
const&) [59]
         0.00 0.00
                                 std::_Vector_base<int, std::allocator<int>
                        2/6
>::_Vector_impl::~_Vector_impl() [29]
         0.00 0.00
                        2/6
                                  std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [40]
[16] 0.0 0.00 0.00
                          6
                                 std::allocator<int>::~allocator() [16]
         0.00 0.00
                                  __gnu_cxx::new_allocator<int>::~new_allocator() [15]
                        6/6
                                 std::allocator<int>::allocator(std::allocator<int> const&) [19]
         0.00 \quad 0.00
                        4/4
[17]
      0.0 0.00 0.00
__gnu_cxx::new_allocator<int>::new_allocator(__gnu_cxx::new_allocator<int> const&) [17]
         0.00 0.00
                        2/4
                                 __gnu_cxx::new_allocator<int>::max_size() const [24]
         0.00 0.00
                        2/4
                                 __gnu_cxx::new_allocator<int>::allocate(unsigned long, void
const*) [22]
                                 __gnu_cxx::new_allocator<int>::_M_max_size() const [18]
[18] 0.0 0.00 0.00
         0.00 0.00
                        2/4
                                 std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [40]
```

```
0.00 0.00
                       2/4
                                std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [28]
[19] 0.0 0.00 0.00 4
                               std::allocator<int>::allocator(std::allocator<int> const&) [19]
         0.00 0.00
                       4/4
__gnu_cxx::new_allocator<int>::new_allocator(__gnu_cxx::new_allocator<int> const&) [17]
        0.00 \quad 0.00
                       2/4
                                std::vector<int, std::allocator<int>>::~vector() [43]
                       2/4
         0.00 0.00
                                std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [41]
[20] 0.0 0.00 0.00
                         4
                                std:: Vector base<int, std::allocator<int>
>::_M_get_Tp_allocator() [20]
_____
         0.00 0.00 2/2
                                std::allocator_traits<std::allocator<int>
>::deallocate(std::allocator<int>&, int*, unsigned long) [35]
[21]
      0.0 0.00 0.00 2 __gnu_cxx::new_allocator<int>::deallocate(int*, unsigned long)
[21]
         0.00 0.00
                       2/2
                                std::allocator traits<std::allocator<int>
>::allocate(std::allocator<int>&, unsigned long) [36]
                         2
[22]
      0.0 0.00 0.00
                                __gnu_cxx::new_allocator<int>::allocate(unsigned long, void
const*) [22]
        0.00 0.00
                                gnu cxx::new allocator<int>:: M max size() const [18]
                       2/4
         0.00 0.00
                       2/2
                                std::allocator<int>::allocator() [25]
      0.0 0.00 0.00 2
                                __gnu_cxx::new_allocator<int>::new_allocator() [23]
[23]
        0.00 \quad 0.00
                       2/2
                                std::allocator_traits<std::allocator<int>
>::max_size(std::allocator<int> const&) [37]
[24]
      0.0 0.00 0.00
                         2
                                __gnu_cxx::new_allocator<int>::max_size() const [24]
        0.00 0.00
                       2/4
                                __gnu_cxx::new_allocator<int>::_M_max_size() const [18]
         0.00 0.00
                                generateRandomNumbers(int, int, int) [60]
                       1/2
         0.00 0.00
                       1/2
                                computePrefixSum(std::vector<int, std::allocator<int>>
const&) [59]
      0.0 0.00 0.00
                                std::allocator<int>::allocator() [25]
[25]
                         2
```

```
0.00 \quad 0.00
                        2/2
                                  __gnu_cxx::new_allocator<int>::new_allocator() [23]
         0.00 \quad 0.00
                        2/2
                                  void std::_Destroy<int*>(int*, int*) [53]
[26] 0.0 0.00 0.00
                           2
                                 void std::_Destroy_aux<true>::__destroy<int*>(int*, int*) [26]
         0.00 0.00
                                  std::_Vector_base<int, std::allocator<int>
                        2/2
>::_M_create_storage(unsigned long) [31]
[27] 0.0 0.00 0.00
                           2 std::_Vector_base<int, std::allocator<int>
>::_M_allocate(unsigned long) [27]
         0.00 0.00
                        2/2
                                  std::allocator_traits<std::allocator<int>
>::allocate(std::allocator<int>&, unsigned long) [36]
         0.00 0.00
                        2/2
                                  std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [33]
      0.0 0.00 0.00
                           2
                                 std:: Vector base<int, std::allocator<int>
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [28]
         0.00 0.00
                                  std::allocator<int>::allocator(std::allocator<int> const&) [19]
                        2/4
         0.00 0.00
                        2/2
                                  std:: Vector base<int, std::allocator<int>
>::_Vector_impl_data::_Vector_impl_data() [32]
         0.00 0.00
                        2/2
                                  std:: Vector base<int, std::allocator<int>>::~ Vector base()
[34]
       0.0 0.00 0.00
                                  std::_Vector_base<int, std::allocator<int>
[29]
                           2
>::_Vector_impl::~_Vector_impl() [29]
         0.00 0.00
                        2/6
                                  std::allocator<int>::~allocator() [16]
                                  std::_Vector_base<int, std::allocator<int>>::~_Vector_base()
         0.00 \quad 0.00
                        2/2
[34]
       0.0 0.00 0.00
[30]
                           2
                                 std:: Vector base<int, std::allocator<int>
>::_M_deallocate(int*, unsigned long) [30]
         0.00 0.00
                        2/2
                                  std::allocator_traits<std::allocator<int>
>::deallocate(std::allocator<int>&, int*, unsigned long) [35]
         0.00 0.00
                        2/2
                                  std:: Vector base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [33]
```

```
>::_M_create_storage(unsigned long) [31]
         0.00 0.00
                                  std::_Vector_base<int, std::allocator<int>
                        2/2
>::_M_allocate(unsigned long) [27]
         0.00 0.00
                                  std::_Vector_base<int, std::allocator<int>
                        2/2
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [28]
      0.0 0.00 0.00
                           2
                                  std:: Vector base<int, std::allocator<int>
>::_Vector_impl_data::_Vector_impl_data() [32]
                                  std::vector<int, std::allocator<int>>::vector(unsigned long,
         0.00 0.00
                        2/2
std::allocator<int> const&) [42]
[33] 0.0 0.00 0.00
                           2
                                  std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [33]
         0.00 0.00
                        2/2
                                  std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [28]
         0.00 0.00
                        2/2
                                  std:: Vector base<int, std::allocator<int>
>::_M_create_storage(unsigned long) [31]
         0.00 \quad 0.00
                        2/2
                                  std::vector<int, std::allocator<int>>::~vector() [43]
[34]
      0.0 0.00 0.00 2
                                  std::_Vector_base<int, std::allocator<int>>::~_Vector_base()
[34]
         0.00 0.00
                        2/2
                                  std::_Vector_base<int, std::allocator<int>
>::_M_deallocate(int*, unsigned long) [30]
         0.00 0.00
                        2/2
                                  std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::~_Vector_impl() [29]
         0.00 0.00
                                  std::_Vector_base<int, std::allocator<int>
                        2/2
>::_M_deallocate(int*, unsigned long) [30]
      0.0 0.00 0.00
                           2
                                 std::allocator traits<std::allocator<int>
>::deallocate(std::allocator<int>&, int*, unsigned long) [35]
         0.00 0.00
                        2/2
                                  __gnu_cxx::new_allocator<int>::deallocate(int*, unsigned long)
[21]
         0.00 0.00
                        2/2
                                  std:: Vector base<int, std::allocator<int>
>::_M_allocate(unsigned long) [27]
```

std::\_Vector\_base<int, std::allocator<int>

[31] 0.0 0.00 0.00

2

```
>::allocate(std::allocator<int>&, unsigned long) [36]
         0.00 0.00
                             __gnu_cxx::new_allocator<int>::allocate(unsigned long, void
                        2/2
const*) [22]
         _____
         0.00 0.00
                        2/2
                                 std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [39]
[37]
       0.0 0.00 0.00
                           2
                                 std::allocator traits<std::allocator<int>
>::max_size(std::allocator<int> const&) [37]
         0.00 0.00
                        2/2
                                  __gnu_cxx::new_allocator<int>::max_size() const [24]
                                 int* std::__uninitialized_default_n<int*, unsigned long>(int*,
         0.00 0.00
                        2/2
unsigned long) [49]
      0.0 0.00 0.00
                           2
[38]
                                 int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned long>(int*, unsigned
long) [38]
         0.00 0.00
                                 int* std:: addressof<int>(int&) [46]
                        2/2
         0.00 0.00
                                 void std::_Construct<int>(int*) [44]
                        2/2
                                 int* std::fill n<int*, unsigned long, int>(int*, unsigned long, int
         0.00 0.00
                        2/2
const&) [52]
         0.00 0.00
                        2/2
                                 std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [40]
[39] 0.0 0.00 0.00
                           2
                                 std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [39]
         0.00 0.00
                        2/2
                                  std::allocator_traits<std::allocator<int>
>::max_size(std::allocator<int> const&) [37]
         0.00 0.00
                        2/2
                                  unsigned long const& std::min<unsigned long>(unsigned long
const&, unsigned long const&) [51]
         0.00 0.00
                        2/2
                                 std::vector<int, std::allocator<int>>::vector(unsigned long,
std::allocator<int> const&) [42]
       0.0 0.00 0.00
                           2
[40]
                                 std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [40]
         0.00 0.00
                        2/4
                                  std::allocator<int>::allocator(std::allocator<int> const&) [19]
```

std::allocator\_traits<std::allocator<int>

[36]

0.0 0.00 0.00

2

```
0.00 0.00
                         2/2
                                  std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [39]
         0.00 0.00
                         2/6
                                  std::allocator<int>::~allocator() [16]
         0.00 0.00
                         2/2
                                  std::vector<int, std::allocator<int>>::vector(unsigned long,
std::allocator<int> const&) [42]
       0.0 0.00 0.00
                           2
[41]
                                  std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [41]
         0.00 0.00
                         2/4
                                  std::_Vector_base<int, std::allocator<int>
>::_M_get_Tp_allocator() [20]
                                  int* std::__uninitialized_default_n_a<int*, unsigned long,
         0.00 0.00
                         2/2
int>(int*, unsigned long, std::allocator<int>&) [50]
         0.00 0.00
                         1/2
                                   generateRandomNumbers(int, int, int) [60]
         0.00 0.00
                         1/2
                                   computePrefixSum(std::vector<int, std::allocator<int>>
const&) [59]
[42]
       0.0 0.00 0.00
                           2
                                  std::vector<int, std::allocator<int>>::vector(unsigned long,
std::allocator<int> const&) [42]
         0.00 0.00
                         2/2
                                  std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [40]
         0.00 0.00
                         2/2
                                  std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [33]
         0.00 0.00
                         2/2
                                  std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [41]
         0.00 0.00
                         2/2
                                  main [6]
[43]
       0.0 0.00 0.00
                           2
                                  std::vector<int, std::allocator<int>>::~vector() [43]
         0.00 0.00
                         2/4
                                  std:: Vector base<int, std::allocator<int>
>::_M_get_Tp_allocator() [20]
         0.00 0.00
                         2/2
                                  void std::_Destroy<int*, int>(int*, int*, std::allocator<int>&)
[54]
         0.00 0.00
                         2/2
                                  std::_Vector_base<int, std::allocator<int>>::~_Vector_base()
[34]
```

```
0.00 0.00
                       2/2
                                 int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned long>(int*, unsigned
long) [38]
[44] 0.0 0.00 0.00 2
                                 void std::_Construct<int>(int*) [44]
         0.00 0.00
                                 operator new(unsigned long, void*) [57]
                        2/2
         0.00 0.00
                       2/2
                                 int* std::fill n<int*, unsigned long, int>(int*, unsigned long, int
const&) [52]
      0.0 0.00 0.00
                          2
                                int* std::__fill_n_a<int*, unsigned long, int>(int*, unsigned
[45]
long, int const&, std::random_access_iterator_tag) [45]
         0.00 0.00
                        2/2
                                 void std::__fill_a<int*, int>(int*, int*, int const&) [55]
         0.00 \quad 0.00
                       2/2
                                 int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned long>(int*, unsigned
long) [38]
                          2
                                 int* std::__addressof<int>(int&) [46]
[46] 0.0 0.00 0.00
         0.00 0.00
                                 int* std::fill n<int*, unsigned long, int>(int*, unsigned long, int
                       2/2
const&) [52]
                                 std::__size_to_integer(unsigned long) [47]
[47] 0.0 0.00 0.00
                          2
         0.00 \quad 0.00
                       2/2
                                 int* std::fill_n<int*, unsigned long, int>(int*, unsigned long, int
const&) [52]
[48] 0.0 0.00 0.00 2
                                std::iterator_traits<int*>::iterator_category
std:: iterator category<int*>(int* const&) [48]
         0.00 0.00 2/2
                                 int* std::__uninitialized_default_n_a<int*, unsigned long,
int>(int*, unsigned long, std::allocator<int>&) [50]
                                int* std::__uninitialized_default_n<int*, unsigned long>(int*,
[49]
      0.0 0.00 0.00
                          2
unsigned long) [49]
         0.00 0.00
                        2/2
                                 int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned long>(int*, unsigned
long) [38]
         0.00 0.00
                       2/2
                                 std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [41]
```

```
int>(int*, unsigned long, std::allocator<int>&) [50]
         0.00 0.00
                                 int* std::__uninitialized_default_n<int*, unsigned long>(int*,
                        2/2
unsigned long) [49]
         0.00 0.00
                        2/2
                                  std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [39]
[51]
      0.0 0.00 0.00
                           2
                                 unsigned long const& std::min<unsigned long>(unsigned long
const&, unsigned long const&) [51]
         0.00 0.00
                        2/2
                                  int*
std:: uninitialized default n 1<true>:: uninit default n<int*, unsigned long>(int*, unsigned
long) [38]
[52]
     0.0 0.00 0.00
                           2
                                  int* std::fill_n<int*, unsigned long, int>(int*, unsigned long, int
const&) [52]
         0.00 0.00
                        2/2
                                  std::iterator_traits<int*>::iterator_category
std::__iterator_category<int*>(int* const&) [48]
         0.00 0.00
                        2/2
                                  std::__size_to_integer(unsigned long) [47]
         0.00 0.00
                        2/2
                                  int* std::__fill_n_a<int*, unsigned long, int>(int*, unsigned
long, int const&, std::random_access_iterator_tag) [45]
                                  void std::_Destroy<int*, int>(int*, int*, std::allocator<int>&)
         0.00 \quad 0.00
                        2/2
[54]
[53]
      0.0 0.00 0.00
                                  void std::_Destroy<int*>(int*, int*) [53]
                           2
         0.00 0.00
                        2/2
                                  void std::_Destroy_aux<true>::__destroy<int*>(int*, int*) [26]
         0.00 0.00
                                  std::vector<int, std::allocator<int>>::~vector() [43]
                        2/2
      0.0 0.00 0.00
                                  void std:: Destroy<int*, int>(int*, int*, std::allocator<int>&)
[54]
                        2
[54]
         0.00 0.00
                        2/2
                                  void std::_Destroy<int*>(int*, int*) [53]
                                  int* std:: fill n a<int*, unsigned long, int>(int*, unsigned
         0.00 0.00
                        2/2
long, int const&, std::random_access_iterator_tag) [45]
      0.0 0.00 0.00
                           2
                                 void std::__fill_a<int*, int>(int*, int*, int const&) [55]
[55]
         0.00 0.00
                        2/2
                                 __gnu_cxx::__enable_if<std::__is_scalar<int>::__value,
void>::__type std::__fill_a1<int*, int>(int*, int*, int const&) [56]
```

int\* std::\_\_uninitialized\_default\_n\_a<int\*, unsigned long,

[50] 0.0 0.00 0.00 2

void std::\_\_fill\_a<int\*, int>(int\*, int\*, int const&) [55]  $0.00 \quad 0.00$ 2/2 2 \_\_gnu\_cxx::\_\_enable\_if<std::\_\_is\_scalar<int>::\_\_value, [56] 0.0 0.00 0.00 void>::\_\_type std::\_\_fill\_a1<int\*, int>(int\*, int\*, int const&) [56] 0.00 0.00 2/2 void std::\_Construct<int>(int\*) [44] [57] 0.0 0.00 0.00 2 operator new(unsigned long, void\*) [57] 0.00 0.00 1/1 main [6] [58] 0.0 0.00 0.00 1 computeAverage(std::vector<int, std::allocator<int> > const&) [58] 0.00 0.00 102/405 std::vector<int, std::allocator<int>>::size() const [10] 0.00 0.00 100/200 std::vector<int, std::allocator<int>>::operator[](unsigned long) const [11] 0.00 0.00 1/1 main [6] [59] 0.0 0.00 0.00 1 computePrefixSum(std::vector<int, std::allocator<int>> const&) [59] 0.00 0.00 199/799 std::vector<int, std::allocator<int>>::operator[](unsigned long) [9] 0.00 0.00 101/405 std::vector<int, std::allocator<int>>::size() const [10] 0.00 0.00 100/200 std::vector<int, std::allocator<int>>::operator[](unsigned long) const [11] 0.00 0.00 1/2 std::allocator<int>::allocator() [25] 0.00 0.00 1/2 std::vector<int, std::allocator<int>>::vector(unsigned long, std::allocator<int> const&) [42] 0.00 0.00 1/6 std::allocator<int>::~allocator() [16] 0.00 0.00 1/1 main [6] [60] 0.0 0.00 0.00 generateRandomNumbers(int, int, int) [60] 1 0.00 0.00 std::vector<int, std::allocator<int>>::operator[](unsigned 100/799 long) [9] 0.00 0.00 1/2 std::allocator<int>::allocator() [25]

0.00 0.00

std::allocator<int> const&) [42]

1/2

std::vector<int, std::allocator<int>>::vector(unsigned long,

	0.00	0.00	1/6	std::allocator <int>::~allocator() [16]</int>
	0.00	0.00	1/1	_GLOBALsub_IZ21generateRandomNumbersiii [62]
[61]	0.0 0.	00 0.00	1	static_initialization_and_destruction_0(int, int) [61]

This table describes the call tree of the program, and was sorted by the total amount of time spent in each function and its children.

Each entry in this table consists of several lines. The line with the index number at the left hand margin lists the current function.

The lines above it list the functions that called this function, and the lines below it list the functions this one called.

## This line lists:

Index A unique number given to each element of the table.Index numbers are sorted numerically.The index number is printed next to every function name so it is easier to look up where the function is in the table.

% time This is the percentage of the `total' time that was spent in this function and its children. Note that due to different viewpoints, functions excluded by options, etc, these numbers will NOT add up to 100%.

self This is the total amount of time spent in this function.

children This is the total amount of time propagated into this function by its children.

called This is the number of times the function was called.

If the function called itself recursively, the number only includes non-recursive calls, and is followed by

a `+' and the number of recursive calls.

name The name of the current function. The index number is printed after it. If the function is a member of a

cycle, the cycle number is printed between the

function's name and the index number.

For the function's parents, the fields have the following meanings:

self This is the amount of time that was propagated directly from the function into this parent.

children This is the amount of time that was propagated from

the function's children into this parent.

called This is the number of times this parent called the

function \'' the total number of times the function

was called. Recursive calls to the function are not

included in the number after the \'.

name This is the name of the parent. The parent's index

number is printed after it. If the parent is a

member of a cycle, the cycle number is printed between

the name and the index number.

If the parents of the function cannot be determined, the word `<spontaneous>' is printed in the `name' field, and all the other fields are blank.

For the function's children, the fields have the following meanings:

self This is the amount of time that was propagated directly from the child into the function.

children This is the amount of time that was propagated from the child's children to the function.

called This is the number of times the function called this child `/' the total number of times the child was called. Recursive calls by the child are not listed in the number after the `/'.

name This is the name of the child. The child's index number is printed after it. If the child is a member of a cycle, the cycle number is printed between the name and the index number.

If there are any cycles (circles) in the call graph, there is an entry for the cycle-as-a-whole. This entry shows who called the cycle (as parents) and the members of the cycle (as children.)

The `+' recursive calls entry shows the number of function calls that were internal to the cycle, and the calls entry for each member shows, for that member, how many times it was called from other members of the cycle.

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- [58] computeAverage(std::vector<int, std::allocator<int> > const&) [16] std::allocator<int>::~allocator() [42] std::vector<int, std::allocator<int> >::vector(unsigned long, std::allocator<int> const&)
- [59] computePrefixSum(std::vector<int, std::allocator<int> > const&) [26] void std::\_Destroy\_aux<true>::\_\_destroy<int\*>(int\*, int\*) [43] std::vector<int, std::allocator<int> >::~vector()
- [60] generateRandomNumbers(int, int, int) [27] std::\_Vector\_base<int, std::allocator<int> >::\_M\_allocate(unsigned long) [9] std::vector<int, std::allocator<int> >::operator[](unsigned long)
- [61] \_\_static\_initialization\_and\_destruction\_0(int, int) [28] std::\_Vector\_base<int, std::allocator<int>>::\_Vector\_impl::\_Vector\_impl(std::allocator<int> const&) [44] void std::\_Construct<int>(int\*)
- [12] isOdd(int) [29] std::\_Vector\_base<int, std::allocator<int>
  >::\_Vector\_impl::~\_Vector\_impl() [45] int\* std::\_\_fill\_n\_a<int\*, unsigned long, int>(int\*, unsigned long, int const&, std::random\_access\_iterator\_tag)
- [13] isPrime(int) [30] std::\_Vector\_base<int, std::allocator<int>>::\_M\_deallocate(int\*, unsigned long) [46] int\* std::\_\_addressof<int>(int&)
- [14] factorial(int) [31] std::\_Vector\_base<int, std::allocator<int>
  >::\_M\_create\_storage(unsigned long) [47] std::\_\_size\_to\_integer(unsigned long)
- [21] \_\_gnu\_cxx::new\_allocator<int>::deallocate(int\*, unsigned long) [32] std::\_Vector\_base<int, std::allocator<int>>::\_Vector\_impl\_data::\_Vector\_impl\_data() [48] std::iterator\_traits<int\*>::iterator\_category std::\_\_iterator\_category<int\*>(int\* const&)
- [22] \_\_gnu\_cxx::new\_allocator<int>::allocate(unsigned long, void const\*) [20] std::\_Vector\_base<int, std::allocator<int>>::\_M\_get\_Tp\_allocator() [49] int\* std::\_\_uninitialized\_default\_n<int\*, unsigned long>(int\*, unsigned long)
- [23] \_\_gnu\_cxx::new\_allocator<int>::new\_allocator() [33] std::\_Vector\_base<int, std::allocator<int> >::\_Vector\_base(unsigned long, std::allocator<int> const&) [50] int\* std::\_uninitialized\_default\_n\_a<int\*, unsigned long, int>(int\*, unsigned long, std::allocator<int>&)
- [17] \_\_gnu\_cxx::new\_allocator<int>::new\_allocator(\_\_gnu\_cxx::new\_allocator<int> const&) [34] std::\_Vector\_base<int, std::allocator<int> >::~\_Vector\_base() [51] unsigned long const& std::min<unsigned long>(unsigned long const&, unsigned long const&)
- [15] \_\_gnu\_cxx::new\_allocator<int>::~new\_allocator() [35]
  std::allocator\_traits<std::allocator<int>>::deallocate(std::allocator<int>&, int\*, unsigned long) [8]
  \_\_gnu\_cxx::\_\_enable\_if<std::\_\_is\_integer<int>::\_\_value, double>::\_\_type std::sqrt<int>(int)

- [18] \_\_gnu\_cxx::new\_allocator<int>::\_M\_max\_size() const [36] std::allocator\_traits<std::allocator<int>>::allocate(std::allocator<int>&, unsigned long) [52] int\* std::fill\_n<int\*, unsigned long, int>(int\*, unsigned long, int const&)
- [24] \_\_gnu\_cxx::new\_allocator<int>::max\_size() const [37] std::allocator\_traits<std::allocator<int> >::max\_size(std::allocator<int> const&) [53] void std::\_Destroy<int\*>(int\*, int\*)
- [10] std::vector<int, std::allocator<int> >::size() const [38] int\* std::\_\_uninitialized\_default\_n\_1<true>::\_\_uninit\_default\_n<int\*, unsigned long>(int\*, unsigned long) [54] void std::\_Destroy<int\*, int>(int\*, int\*, std::allocator<int>&)
- [11] std::vector<int, std::allocator<int>>::operator[](unsigned long) const [39] std::vector<int, std::allocator<int>>::\_S\_max\_size(std::allocator<int> const&) [55] void std::\_\_fill\_a<int\*, int>(int\*, int\*, int const&)
- [19] std::allocator<int>::allocator(std::allocator<int> const&) [40] std::vector<int, std::allocator<int> >::\_S\_check\_init\_len(unsigned long, std::allocator<int> const&) [56] \_\_gnu\_cxx::\_\_enable\_if<std::\_\_is\_scalar<int>::\_\_value, void>::\_\_type std::\_\_fill\_a1<int\*, int>(int\*, int\*, int const&)
- [25] std::allocator<int>::allocator() [41] std::vector<int, std::allocator<int>::\_M\_default\_initialize(unsigned long) [57] operator new(unsigned long, void\*)