2)Text output of *gprof* with *callgraph* and code annotate

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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   808   0.00   0.00 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::base() const
  0.00   0.00   0.00   554   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   404   0.00   0.00 bool __gnu_cxx::operator!=<int const*, std::vector<int, std::allocator<int> > >(__gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > > const&, __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > > const&)
  0.00   0.00   0.00   400   0.00   0.00 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::operator++()
  0.00   0.00   0.00   400   0.00   0.00 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::operator*() const
  0.00   0.00   0.00   299   0.00   0.00 std::vector<int, std::allocator<int> >::operator[](unsigned long)
  0.00   0.00   0.00   102   0.00   0.00 std::vector<int, std::allocator<int> >::size() const
  0.00   0.00   0.00   100   0.00   0.00 isEven(int)
  0.00   0.00   0.00   100   0.00   0.00 isPrime(int)
  0.00   0.00   0.00   100   0.00   0.00 factorial(int)
  0.00   0.00   0.00   100   0.00   0.00 std::vector<int, std::allocator<int> >::operator[](unsigned long) const
  0.00   0.00   0.00   8   0.00   0.00 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::__normal_iterator(int const* const&)
  0.00   0.00   0.00   6   0.00   0.00 std::allocator<int>::~allocator()
  0.00   0.00   0.00   6   0.00   0.00 std::__new_allocator<int>::~__new_allocator()
  0.00   0.00   0.00   4   0.00   0.00 std::__new_allocator<int>::_M_max_size() const
  0.00   0.00   0.00   4   0.00   0.00 std::vector<int, std::allocator<int> >::end() const
  0.00   0.00   0.00   4   0.00   0.00 std::vector<int, std::allocator<int> >::begin() const

  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   0.00   4   0.00   0.00
std::__new_allocator<int>::__new_allocator(std::__new_allocator<int> const&)
  0.00   0.00   0.00   2   0.00   0.00 printArray(std::vector<int,
std::allocator<int> > const&)
  0.00   0.00   0.00   2   0.00   0.00
std::__new_allocator<int>::max_size() const
  0.00   0.00   0.00   2   0.00   0.00 std::allocator<int>::allocator()
  0.00   0.00   0.00   2   0.00   0.00 void
std::_Destroy_aux<true>::__destroy<int*>(int*, 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   0.00   2   0.00   0.00 std::_Vector_base<int,
std::allocator<int> >::_Vector_impl::_Vector_impl(std::allocator<int> const&)
  0.00   0.00   0.00   2   0.00   0.00 std::_Vector_base<int,
std::allocator<int> >::_Vector_impl::~_Vector_impl()
  0.00   0.00   0.00   2   0.00   0.00 std::_Vector_base<int,
std::allocator<int> >::_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::__new_allocator<int>::deallocate(int*, unsigned long)
  0.00   0.00   0.00   2   0.00   0.00
std::__new_allocator<int>::allocate(unsigned long, void const*)
  0.00   0.00   0.00   2   0.00   0.00
std::__new_allocator<int>::__new_allocator()
  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   2   0.00   0.00
std::allocator_traits<std::allocator<int> >::allocate(std::allocator<int>&,
unsigned long)
  0.00   0.00   0.00   2   0.00   0.00
std::allocator_traits<std::allocator<int> >::max_size(std::allocator<int>
const&)
  0.00   0.00   0.00   2   0.00   0.00 int*
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&)

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  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        2     0.00     0.00  std::vector<int, std::allocator<int>
>::vector(unsigned long, std::allocator<int> const&)
  0.00      0.00     0.00        2     0.00     0.00  std::vector<int, std::allocator<int>
>::~vector()
  0.00      0.00     0.00        2     0.00     0.00  void std::_Construct<int>(int*)
  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        2     0.00     0.00  int* std::__addressof<int>(int&)
  0.00      0.00     0.00        2     0.00     0.00  std::__size_to_integer(unsigned
long)
  0.00      0.00     0.00        2     0.00     0.00
std::iterator_traits<int*>::iterator_category std::__iterator_category<int*>(int*
const&)
  0.00      0.00     0.00        2     0.00     0.00  int*
std::__uninitialized_default_n<int*, unsigned long>(int*, unsigned long)
  0.00      0.00     0.00        2     0.00     0.00  int*
std::__uninitialized_default_n_a<int*, unsigned 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      0.00     0.00        2     0.00     0.00  int* std::fill_n<int*, unsigned long,
int>(int*, unsigned long, int const&)
  0.00      0.00     0.00        2     0.00     0.00  void std::_Destroy<int*>(int*, int*)
  0.00      0.00     0.00        2     0.00     0.00  void std::_Destroy<int*, int>(int*,
int*, std::allocator<int>&)
  0.00      0.00     0.00        2     0.00     0.00  void std::__fill_a<int*, int>(int*,
int*, int const&)
  0.00      0.00     0.00        2     0.00     0.00
__gnu_cxx::__enable_if<std::__is_scalar<int>::__value, void>::__type
std::__fill_a1<int*, int>(int*, int*, int const&)
  0.00      0.00     0.00        2     0.00     0.00  operator new(unsigned long, void*)
  0.00      0.00     0.00        1     0.00     0.00  processArray(std::vector<int,
std::allocator<int> > const&)
  0.00      0.00     0.00        1     0.00     0.00  calculateAverage(std::vector<int,
std::allocator<int> > const&)
  0.00      0.00     0.00        1     0.00     0.00  generateRandomArray(int, int, int)
  0.00      0.00     0.00        1     0.00     0.00
__static_initialization_and_destruction_0(int, int)
  0.00      0.00     0.00        1     0.00     0.00  prefixSum(std::vector<int,
std::allocator<int> > const&)

 %         the percentage of the total running time of the
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 ms/call the average number of milliseconds spent in this function per call, if this function is profiled, else blank.

total ms/call the average number of milliseconds spent in this 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.

Call graph (explanation follows)

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

index % time self children called name
0.00 0.00 808/808 bool __gnu_cxx::operator!=<int const*, std::vector<int, std::allocator<int> > >(__gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > > const&, __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > > const&) [10]
[8] 0.0 0.00 0.00 808 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::base() const [8]

0.00 0.00 554/554 isPrime(int) [16]
[9] 0.0 0.00 0.00 554 __gnu_cxx::__enable_if<std::__is_integer<int>::__value, double>::__type std::sqrt<int>(int) [9]

0.00 0.00 101/404 calculateAverage(std::vector<int, std::allocator<int> > const&) [67]
0.00 0.00 101/404 processArray(std::vector<int, std::allocator<int> > const&) [66]
0.00 0.00 202/404 printArray(std::vector<int, std::allocator<int> > const&) [28]
[10] 0.0 0.00 0.00 404 bool __gnu_cxx::operator!=<int const*, std::vector<int, std::allocator<int> > >(__gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > > const&, __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > > const&) [10]
0.00 0.00 808/808 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::base() const [8]

0.00 0.00 100/400 calculateAverage(std::vector<int, std::allocator<int> > const&) [67]
0.00 0.00 100/400 processArray(std::vector<int, std::allocator<int> > const&) [66]
0.00 0.00 200/400 printArray(std::vector<int, std::allocator<int> > const&) [28]
[11] 0.0 0.00 0.00 400 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::operator++() [11]

0.00 0.00 100/400 calculateAverage(std::vector<int, std::allocator<int> > const&) [67]
0.00 0.00 100/400 processArray(std::vector<int, std::allocator<int> > const&) [66]
0.00 0.00 200/400 printArray(std::vector<int, std::allocator<int> > const&) [28]
[12] 0.0 0.00 0.00 400 __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::operator*() const [12]

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                0.00    0.00     100/299         generateRandomArray(int, int, int) [68]
                0.00    0.00     199/299         prefixSum(std::vector<int,
std::allocator<int> > const&) [70]
[13]     0.0    0.00    0.00     299         std::vector<int, std::allocator<int>
>::operator[](unsigned long) [13]
-----------------------------------------------
                0.00    0.00       1/102         calculateAverage(std::vector<int,
std::allocator<int> > const&) [67]
                0.00    0.00     101/102         prefixSum(std::vector<int,
std::allocator<int> > const&) [70]
[14]     0.0    0.00    0.00     102         std::vector<int, std::allocator<int>
>::size() const [14]
-----------------------------------------------
                0.00    0.00     100/100         processArray(std::vector<int,
std::allocator<int> > const&) [66]
[15]     0.0    0.00    0.00     100         isEven(int) [15]
-----------------------------------------------
                0.00    0.00     100/100         processArray(std::vector<int,
std::allocator<int> > const&) [66]
[16]     0.0    0.00    0.00     100         isPrime(int) [16]
                0.00    0.00     554/554
__gnu_cxx::__enable_if<std::__is_integer<int>::__value, double>::__type
std::sqrt<int>(int) [9]
-----------------------------------------------
                          518527           factorial(int) [17]
                0.00    0.00     100/100         processArray(std::vector<int,
std::allocator<int> > const&) [66]
[17]     0.0    0.00    0.00     100+518527  factorial(int) [17]
                          518527           factorial(int) [17]
-----------------------------------------------
                0.00    0.00     100/100         prefixSum(std::vector<int,
std::allocator<int> > const&) [70]
[18]     0.0    0.00    0.00     100         std::vector<int, std::allocator<int>
>::operator[](unsigned long) const [18]
-----------------------------------------------
                0.00    0.00       4/8           std::vector<int, std::allocator<int>
>::begin() const [24]
                0.00    0.00       4/8           std::vector<int, std::allocator<int>
>::end() const [23]
[19]     0.0    0.00    0.00       8         __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::__normal_iterator(int const* const&)
[19]
-----------------------------------------------
                0.00    0.00       1/6           generateRandomArray(int, int, int) [68]
                0.00    0.00       1/6           prefixSum(std::vector<int,
std::allocator<int> > const&) [70]
                0.00    0.00       2/6           std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::~_Vector_impl() [34]
                0.00    0.00       2/6           std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [48]
[20]     0.0    0.00    0.00       6         std::allocator<int>::~allocator() [20]
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             0.00    0.00       6/6
std::__new_allocator<int>::~__new_allocator() [21]
-----------------------------------------------
             0.00    0.00       6/6          std::allocator<int>::~allocator() [20]
[21]     0.0    0.00    0.00       6
std::__new_allocator<int>::~__new_allocator() [21]
-----------------------------------------------
             0.00    0.00       2/4          std::__new_allocator<int>::max_size()
const [29]
             0.00    0.00       2/4
std::__new_allocator<int>::allocate(unsigned long, void const*) [41]
[22]     0.0    0.00    0.00       4         std::__new_allocator<int>::_M_max_size()
const [22]
-----------------------------------------------
             0.00    0.00       1/4          calculateAverage(std::vector<int,
std::allocator<int> > const&) [67]
             0.00    0.00       1/4          processArray(std::vector<int,
std::allocator<int> > const&) [66]
             0.00    0.00       2/4          printArray(std::vector<int,
std::allocator<int> > const&) [28]
[23]     0.0    0.00    0.00       4         std::vector<int, std::allocator<int>
>::end() const [23]
             0.00    0.00       4/8          __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::__normal_iterator(int const* const&)
[19]
-----------------------------------------------
             0.00    0.00       1/4          calculateAverage(std::vector<int,
std::allocator<int> > const&) [67]
             0.00    0.00       1/4          processArray(std::vector<int,
std::allocator<int> > const&) [66]
             0.00    0.00       2/4          printArray(std::vector<int,
std::allocator<int> > const&) [28]
[24]     0.0    0.00    0.00       4         std::vector<int, std::allocator<int>
>::begin() const [24]
             0.00    0.00       4/8          __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::__normal_iterator(int const* const&)
[19]
-----------------------------------------------
             0.00    0.00       2/4          std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [48]
             0.00    0.00       2/4          std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [33]
[25]     0.0    0.00    0.00       4
std::allocator<int>::allocator(std::allocator<int> const&) [25]
             0.00    0.00       4/4
std::__new_allocator<int>::__new_allocator(std::__new_allocator<int> const&)
[27]
-----------------------------------------------
             0.00    0.00       2/4          std::vector<int, std::allocator<int>
>::~vector() [51]
             0.00    0.00       2/4          std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [49]
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[26]     0.0    0.00    0.00       4        std::_Vector_base<int, std::allocator<int>
>::_M_get_Tp_allocator() [26]
-----------------------------------------------
             0.00    0.00       4/4
std::allocator<int>::allocator(std::allocator<int> const&) [25]
[27]     0.0    0.00    0.00       4
std::__new_allocator<int>::__new_allocator(std::__new_allocator<int> const&)
[27]
-----------------------------------------------
             0.00    0.00       2/2          main [6]
[28]     0.0    0.00    0.00       2        printArray(std::vector<int,
std::allocator<int> > const&) [28]
             0.00    0.00     202/404        bool __gnu_cxx::operator!=<int const*,
std::vector<int, std::allocator<int> > >(__gnu_cxx::__normal_iterator<int
const*, std::vector<int, std::allocator<int> > > const&,
__gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> >
> const&) [10]
             0.00    0.00     200/400        __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::operator*() const [12]
             0.00    0.00     200/400        __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::operator++() [11]
             0.00    0.00       2/4          std::vector<int, std::allocator<int>
>::begin() const [24]
             0.00    0.00       2/4          std::vector<int, std::allocator<int>
>::end() const [23]
-----------------------------------------------
             0.00    0.00       2/2          std::allocator_traits<std::allocator<int>
>::max_size(std::allocator<int> const&) [45]
[29]     0.0    0.00    0.00       2        std::__new_allocator<int>::max_size()
const [29]
             0.00    0.00       2/4          std::__new_allocator<int>::_M_max_size()
const [22]
-----------------------------------------------
             0.00    0.00       1/2          generateRandomArray(int, int, int) [68]
             0.00    0.00       1/2          prefixSum(std::vector<int,
std::allocator<int> > const&) [70]
[30]     0.0    0.00    0.00       2        std::allocator<int>::allocator() [30]
             0.00    0.00       2/2
std::__new_allocator<int>::__new_allocator() [42]
-----------------------------------------------
             0.00    0.00       2/2          void std::_Destroy<int*>(int*, int*) [61]
[31]     0.0    0.00    0.00       2        void
std::_Destroy_aux<true>::__destroy<int*>(int*, int*) [31]
-----------------------------------------------
             0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_M_create_storage(unsigned long) [36]
[32]     0.0    0.00    0.00       2        std::_Vector_base<int, std::allocator<int>
>::_M_allocate(unsigned long) [32]
             0.00    0.00       2/2          std::allocator_traits<std::allocator<int>
>::allocate(std::allocator<int>&, unsigned long) [44]
-----------------------------------------------
```

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                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [38]
[33]     0.0    0.00    0.00       2         std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [33]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_Vector_impl_data::_Vector_impl_data() [37]
                0.00    0.00       2/4
std::allocator<int>::allocator(std::allocator<int> const&) [25]
-----------------------------------------------
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::~_Vector_base() [39]
[34]     0.0    0.00    0.00       2         std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::~_Vector_impl() [34]
                0.00    0.00       2/6          std::allocator<int>::~allocator() [20]
-----------------------------------------------
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::~_Vector_base() [39]
[35]     0.0    0.00    0.00       2         std::_Vector_base<int, std::allocator<int>
>::_M_deallocate(int*, unsigned long) [35]
                0.00    0.00       2/2          std::allocator_traits<std::allocator<int>
>::deallocate(std::allocator<int>&, int*, unsigned long) [43]
-----------------------------------------------
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [38]
[36]     0.0    0.00    0.00       2         std::_Vector_base<int, std::allocator<int>
>::_M_create_storage(unsigned long) [36]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_M_allocate(unsigned long) [32]
-----------------------------------------------
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [33]
[37]     0.0    0.00    0.00       2         std::_Vector_base<int, std::allocator<int>
>::_Vector_impl_data::_Vector_impl_data() [37]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::vector(unsigned long, std::allocator<int> const&) [50]
[38]     0.0    0.00    0.00       2         std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [38]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::_Vector_impl(std::allocator<int> const&) [33]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_M_create_storage(unsigned long) [36]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::~vector() [51]
[39]     0.0    0.00    0.00       2         std::_Vector_base<int, std::allocator<int>
>::~_Vector_base() [39]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_M_deallocate(int*, unsigned long) [35]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_Vector_impl::~_Vector_impl() [34]
-----------------------------------------------
```

```
                0.00    0.00       2/2          std::allocator_traits<std::allocator<int>
>::deallocate(std::allocator<int>&, int*, unsigned long) [43]
[40]     0.0    0.00    0.00       2         std::__new_allocator<int>::deallocate(int*,
unsigned long) [40]
-----------------------------------------------
                0.00    0.00       2/2          std::allocator_traits<std::allocator<int>
>::allocate(std::allocator<int>&, unsigned long) [44]
[41]     0.0    0.00    0.00       2
std::__new_allocator<int>::allocate(unsigned long, void const*) [41]
                0.00    0.00       2/4          std::__new_allocator<int>::_M_max_size()
const [22]
-----------------------------------------------
                0.00    0.00       2/2          std::allocator<int>::allocator() [30]
[42]     0.0    0.00    0.00       2
std::__new_allocator<int>::__new_allocator() [42]
-----------------------------------------------
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_M_deallocate(int*, unsigned long) [35]
[43]     0.0    0.00    0.00       2         std::allocator_traits<std::allocator<int>
>::deallocate(std::allocator<int>&, int*, unsigned long) [43]
                0.00    0.00       2/2          std::__new_allocator<int>::deallocate(int*,
unsigned long) [40]
-----------------------------------------------
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_M_allocate(unsigned long) [32]
[44]     0.0    0.00    0.00       2         std::allocator_traits<std::allocator<int>
>::allocate(std::allocator<int>&, unsigned long) [44]
                0.00    0.00       2/2
std::__new_allocator<int>::allocate(unsigned long, void const*) [41]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [47]
[45]     0.0    0.00    0.00       2         std::allocator_traits<std::allocator<int>
>::max_size(std::allocator<int> const&) [45]
                0.00    0.00       2/2          std::__new_allocator<int>::max_size()
const [29]
-----------------------------------------------
                0.00    0.00       2/2          int* std::__uninitialized_default_n<int*,
unsigned long>(int*, unsigned long) [57]
[46]     0.0    0.00    0.00       2         int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned
long>(int*, unsigned long) [46]
                0.00    0.00       2/2          int* std::__addressof<int>(int&) [54]
                0.00    0.00       2/2          void std::_Construct<int>(int*) [52]
                0.00    0.00       2/2          int* std::fill_n<int*, unsigned long,
int>(int*, unsigned long, int const&) [60]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [48]
[47]     0.0    0.00    0.00       2         std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [47]
```

```
                0.00    0.00       2/2          std::allocator_traits<std::allocator<int>
>::max_size(std::allocator<int> const&) [45]
                0.00    0.00       2/2          unsigned long const& std::min<unsigned
long>(unsigned long const&, unsigned long const&) [59]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::vector(unsigned long, std::allocator<int> const&) [50]
[48]     0.0    0.00    0.00       2         std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [48]
                0.00    0.00       2/4
std::allocator<int>::allocator(std::allocator<int> const&) [25]
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [47]
                0.00    0.00       2/6          std::allocator<int>::~allocator() [20]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::vector(unsigned long, std::allocator<int> const&) [50]
[49]     0.0    0.00    0.00       2         std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [49]
                0.00    0.00       2/4          std::_Vector_base<int, std::allocator<int>
>::_M_get_Tp_allocator() [26]
                0.00    0.00       2/2          int* std::__uninitialized_default_n_a<int*,
unsigned long, int>(int*, unsigned long, std::allocator<int>&) [58]
-----------------------------------------------
                0.00    0.00       1/2          generateRandomArray(int, int, int) [68]
                0.00    0.00       1/2          prefixSum(std::vector<int,
std::allocator<int> > const&) [70]
[50]     0.0    0.00    0.00       2         std::vector<int, std::allocator<int>
>::vector(unsigned long, std::allocator<int> const&) [50]
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::_S_check_init_len(unsigned long, std::allocator<int> const&) [48]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::_Vector_base(unsigned long, std::allocator<int> const&) [38]
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [49]
-----------------------------------------------
                0.00    0.00       2/2          main [6]
[51]     0.0    0.00    0.00       2         std::vector<int, std::allocator<int>
>::~vector() [51]
                0.00    0.00       2/4          std::_Vector_base<int, std::allocator<int>
>::_M_get_Tp_allocator() [26]
                0.00    0.00       2/2          void std::_Destroy<int*, int>(int*, int*,
std::allocator<int>&) [62]
                0.00    0.00       2/2          std::_Vector_base<int, std::allocator<int>
>::~_Vector_base() [39]
-----------------------------------------------
                0.00    0.00       2/2          int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned
long>(int*, unsigned long) [46]
[52]     0.0    0.00    0.00       2         void std::_Construct<int>(int*) [52]
                0.00    0.00       2/2          operator new(unsigned long, void*) [65]
-----------------------------------------------
```

```
                0.00    0.00       2/2          int* std::fill_n<int*, unsigned long,
int>(int*, unsigned long, int const&) [60]
[53]     0.0    0.00    0.00       2         int* std::__fill_n_a<int*, unsigned long,
int>(int*, unsigned long, int const&, std::random_access_iterator_tag) [53]
                0.00    0.00       2/2          void std::__fill_a<int*, int>(int*, int*, int
const&) [63]
-----------------------------------------------
                0.00    0.00       2/2          int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned
long>(int*, unsigned long) [46]
[54]     0.0    0.00    0.00       2         int* std::__addressof<int>(int&) [54]
-----------------------------------------------
                0.00    0.00       2/2          int* std::fill_n<int*, unsigned long,
int>(int*, unsigned long, int const&) [60]
[55]     0.0    0.00    0.00       2         std::__size_to_integer(unsigned long) [55]
-----------------------------------------------
                0.00    0.00       2/2          int* std::fill_n<int*, unsigned long,
int>(int*, unsigned long, int const&) [60]
[56]     0.0    0.00    0.00       2         std::iterator_traits<int*>::iterator_category
std::__iterator_category<int*>(int* const&) [56]
-----------------------------------------------
                0.00    0.00       2/2          int* std::__uninitialized_default_n_a<int*,
unsigned long, int>(int*, unsigned long, std::allocator<int>&) [58]
[57]     0.0    0.00    0.00       2         int* std::__uninitialized_default_n<int*,
unsigned long>(int*, unsigned long) [57]
                0.00    0.00       2/2          int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned
long>(int*, unsigned long) [46]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::_M_default_initialize(unsigned long) [49]
[58]     0.0    0.00    0.00       2         int* std::__uninitialized_default_n_a<int*,
unsigned long, int>(int*, unsigned long, std::allocator<int>&) [58]
                0.00    0.00       2/2          int* std::__uninitialized_default_n<int*,
unsigned long>(int*, unsigned long) [57]
-----------------------------------------------
                0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::_S_max_size(std::allocator<int> const&) [47]
[59]     0.0    0.00    0.00       2         unsigned long const& std::min<unsigned
long>(unsigned long const&, unsigned long const&) [59]
-----------------------------------------------
                0.00    0.00       2/2          int*
std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned
long>(int*, unsigned long) [46]
[60]     0.0    0.00    0.00       2         int* std::fill_n<int*, unsigned long,
int>(int*, unsigned long, int const&) [60]
                0.00    0.00       2/2          std::__size_to_integer(unsigned long) [55]
                0.00    0.00       2/2          std::iterator_traits<int*>::iterator_category
std::__iterator_category<int*>(int* const&) [56]
                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) [53]
-----------------------------------------------
```

```
            0.00    0.00       2/2          void std::_Destroy<int*, int>(int*, int*,
std::allocator<int>&) [62]
[61]     0.0    0.00    0.00       2        void std::_Destroy<int*>(int*, int*) [61]
            0.00    0.00       2/2          void
std::_Destroy_aux<true>::__destroy<int*>(int*, int*) [31]
-----------------------------------------------
            0.00    0.00       2/2          std::vector<int, std::allocator<int>
>::~vector() [51]
[62]     0.0    0.00    0.00       2        void std::_Destroy<int*, int>(int*, int*,
std::allocator<int>&) [62]
            0.00    0.00       2/2          void std::_Destroy<int*>(int*, int*) [61]
-----------------------------------------------
            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) [53]
[63]     0.0    0.00    0.00       2        void std::__fill_a<int*, int>(int*, int*, int
const&) [63]
            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&) [64]
-----------------------------------------------
            0.00    0.00       2/2          void std::__fill_a<int*, int>(int*, int*, int
const&) [63]
[64]     0.0    0.00    0.00       2
__gnu_cxx::__enable_if<std::__is_scalar<int>::__value, void>::__type
std::__fill_a1<int*, int>(int*, int*, int const&) [64]
-----------------------------------------------
            0.00    0.00       2/2          void std::_Construct<int>(int*) [52]
[65]     0.0    0.00    0.00       2        operator new(unsigned long, void*) [65]
-----------------------------------------------
            0.00    0.00       1/1          main [6]
[66]     0.0    0.00    0.00       1        processArray(std::vector<int,
std::allocator<int> > const&) [66]
            0.00    0.00     101/404        bool __gnu_cxx::operator!=<int const*,
std::vector<int, std::allocator<int> > >(__gnu_cxx::__normal_iterator<int
const*, std::vector<int, std::allocator<int> > > const&,
__gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> >
> const&) [10]
            0.00    0.00     100/400        __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::operator*() const [12]
            0.00    0.00     100/100        isEven(int) [15]
            0.00    0.00     100/100        isPrime(int) [16]
            0.00    0.00     100/100        factorial(int) [17]
            0.00    0.00     100/400        __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::operator++() [11]
            0.00    0.00       1/4          std::vector<int, std::allocator<int>
>::begin() const [24]
            0.00    0.00       1/4          std::vector<int, std::allocator<int>
>::end() const [23]
-----------------------------------------------
            0.00    0.00       1/1          main [6]
[67]     0.0    0.00    0.00       1        calculateAverage(std::vector<int,
std::allocator<int> > const&) [67]
```

```
                0.00    0.00     101/404        bool __gnu_cxx::operator!=<int const*,
std::vector<int, std::allocator<int> > >(__gnu_cxx::__normal_iterator<int
const*, std::vector<int, std::allocator<int> > > const&,
__gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> >
> const&) [10]
                0.00    0.00     100/400        __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::operator*() const [12]
                0.00    0.00     100/400        __gnu_cxx::__normal_iterator<int const*,
std::vector<int, std::allocator<int> > >::operator++() [11]
                0.00    0.00       1/4          std::vector<int, std::allocator<int>
>::begin() const [24]
                0.00    0.00       1/4          std::vector<int, std::allocator<int>
>::end() const [23]
                0.00    0.00       1/102          std::vector<int, std::allocator<int>
>::size() const [14]
-----------------------------------------------
                0.00    0.00       1/1          main [6]
[68]     0.0    0.00    0.00       1          generateRandomArray(int, int, int) [68]
                0.00    0.00     100/299          std::vector<int, std::allocator<int>
>::operator[](unsigned long) [13]
                0.00    0.00       1/2          std::allocator<int>::allocator() [30]
                0.00    0.00       1/2          std::vector<int, std::allocator<int>
>::vector(unsigned long, std::allocator<int> const&) [50]
                0.00    0.00       1/6          std::allocator<int>::~allocator() [20]
-----------------------------------------------
                0.00    0.00       1/1
_GLOBAL__sub_I__Z19generateRandomArrayiii [71]
[69]     0.0    0.00    0.00       1          __static_initialization_and_destruction_0(int,
int) [69]
-----------------------------------------------
                0.00    0.00       1/1          main [6]
[70]     0.0    0.00    0.00       1          prefixSum(std::vector<int,
std::allocator<int> > const&) [70]
                0.00    0.00     199/299          std::vector<int, std::allocator<int>
>::operator[](unsigned long) [13]
                0.00    0.00     101/102          std::vector<int, std::allocator<int>
>::size() const [14]
                0.00    0.00     100/100          std::vector<int, std::allocator<int>
>::operator[](unsigned long) const [18]
                0.00    0.00       1/2          std::allocator<int>::allocator() [30]
                0.00    0.00       1/2          std::vector<int, std::allocator<int>
>::vector(unsigned long, std::allocator<int> const&) [50]
                0.00    0.00       1/6          std::allocator<int>::~allocator() [20]
-----------------------------------------------
```

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.

Index by function name

[12] __gnu_cxx::__normal_iterator<int const*, std::vector<int, std::allocator<int> > >::operator*() const [41] std::__new_allocator<int>::allocate(unsigned long, void const*) [59] unsigned long const& std::min<unsigned long>(unsigned long const&, unsigned long const&)
[22] std::__new_allocator<int>::_M_max_size() const [27] std::__new_allocator<int>::__new_allocator(std::__new_allocator<int> const&) [9] __gnu_cxx::__enable_if<std::__is_integer<int>::__value, double>::__type std::sqrt<int>(int)
[29] std::__new_allocator<int>::max_size() const [42] std::__new_allocator<int>::__new_allocator() [60] int* std::fill_n<int*, unsigned long, int>(int*, unsigned long, int const&)
[23] std::vector<int, std::allocator<int> >::end() const [21] std::__new_allocator<int>::~__new_allocator() [61] void std::_Destroy<int*>(int*, int*)
[14] std::vector<int, std::allocator<int> >::size() const [43] std::allocator_traits<std::allocator<int> >::deallocate(std::allocator<int>&, int*, unsigned long) [62] void std::_Destroy<int*, int>(int*, int*, std::allocator<int>&)
[24] std::vector<int, std::allocator<int> >::begin() const [44] std::allocator_traits<std::allocator<int> >::allocate(std::allocator<int>&, unsigned long) [63] void std::__fill_a<int*, int>(int*, int*, int const&)
[18] std::vector<int, std::allocator<int> >::operator[](unsigned long) const [45] std::allocator_traits<std::allocator<int> >::max_size(std::allocator<int> const&) [64] __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(std::allocator<int> const&) [46] int* std::__uninitialized_default_n_1<true>::__uninit_default_n<int*, unsigned long>(int*, unsigned long) [65] operator new(unsigned long, void*)