Internal Control Variables

The OpenMP specification defines the following internal control variables whose values affect the operation of parallel regions.

1. **nthreads-var**—Stores the number of threads requested for future parallel regions.
2. **dyn-var**—Controls whether dynamic adjustment of the number of threads used for future parallel regions is enabled.
3. **nest-var**—Controls whether nested parallelism is enabled for future parallel regions.

The OpenMP specification defines the following internal control variables whose values affect the operation of loops.

1. **run-sched-var**—Stores scheduling information used for loop regions using the runtime schedule clause.
2. **def-sched-var**—Stores implementation-defined default scheduling information for loop regions.

The OpenMP specification provides the following environmental variables you can use to modify internal control variables.

1. **OMP_SCHEDULE**—Sets the run-sched-var internal control variable for the runtime schedule type and chunk size.
2. **OMP_NUM_THREADS**—Sets the nthreads-var internal control variable for the number of threads to use for parallel regions.
3. **OMP_DYNAMIC**—Sets the dyn-var internal control variable for the dynamic adjustment of threads to use for parallel regions.
4. **OMP_NESTED**—Sets the nest-var internal control variable to enable or disable nested parallelism.
5. **OMP_CVI_PROC_MSGS_MASTER**—Specifies whether the master thread processes user interface operations within a parallel region. The default is FALSE.

Array Sections in Directive (Give explanation for normal directive and add array operation to normal OpenMP program)

```
void sum_int(const int input[], int num, int *sum)
{
   int sum_even = 0, sum_odd = 0;

   #pragma omp parallel for
   for (int i = 0; i < num; i++) {
         if (i % 2 == 0)
               sum_even += input[i];
         else
               sum_odd += input[i];
   }
   sum[0] = sum_even;
   sum[1] = sum_odd;
}
```