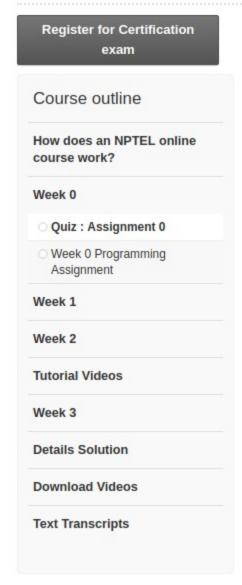
NPTEL » GPU Architectures and Programming

Due on 2020-01-27, 23:59 IST.

Unit 2 - Week 0



```
Assignment 0
```

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Amdahl's law is an expression used to find the maximum expected improvement to an overall system when only part of the system is improved. It is often used in parallel computing to predict the theoretical maximum speedup. Amdahl's law for overall speedup is given by-

```
Old execution time
Overall Speedup =
                        New execution time
```

parallel. The maximum speedup we should expect from a parallel version of the program executing on 32 CPUs will be _

90% of a program's execution time occurs inside a loop that can be executed in

```
No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 7.80,7.81
```

CPI (clock cycles per instruction) of 5 with another CPU having an average CPI of 3.5, with the clock period increased from 100ns to 120ns. The speedup will be-A. 15%

2) Estimate the speedup that would be obtained by replacing a CPU having an average

```
B. 20%
C. 19%
D. 25%
```

```
0 D.
No, the answer is incorrect.
Accepted Answers:
```

0 C.

C.

unallocated integer matrix **arr, the integers m and n and dynamically allocates a 2D matrix of size m x n. void allocate(int **arr, int m, int n)

Consider the following incomplete C function which takes as argument an

```
arr = (int **) malloc( (_____ *sizeof(int*));
    for(int i=0;i< ____; i++)
       arr[i] = (int **) malloc( ____*sizeof(int));
Complete the blanks from the following options-
  A. m, n, n
```

```
B. n, m, n
     C. m, m, n
     D. n, n, m
0 A.
○ B.
O C.
```

No, the answer is incorrect. Accepted Answers: C.

0 D.

dimension nx x ny. The function transposes the matrix in and stores the result in the matrix out which is of dimension ny x nx. Note, both the matrices are treated as one dimensional arrays storing the matrix in row major format.

void transpose(int *in, int *out)

Consider the following incomplete C function which takes as input two

floating point matrices in, out and integers nx and ny. The matrix in is of

```
for (int ix=0; ix<nx; ix++)
         for(int iy=0;iy<ny;iy++)</pre>
               out[___] = in[___];
Complete the array access expressions in the above code snippet from the
following options-
 A. iy*nx+ix, ix*ny+iy
 B. iy*ny+iy, ix*nx+ix
```

```
0 A.
○ B.
O C.
O D.
```

C. iy*nx+iy, ix*ny+ix D. ix*nx+ix, iy*ny+iy

5) In a certain computer, the size of an integer is 4 bytes and each memory address is of 8

Accepted Answers:

No, the answer is incorrect.

int main()

bytes. What will be displayed when the following program segment executes?

```
int a[] = \{12, 13, 14, 15, 16\};
       printf("size of a: %d, size of a* %d, size of a[0]
       %d\n", sizeof(a), sizeof(*a), sizeof(a[0]));
       return 0;
    A. size of a: 4, size of a* 4, size of a[0] 4
    B. size of a: 20, size of a* 4, size of a[0] 4
    C. size of a: 20, size of a* 8, size of a[0] 4
    D. size of a: 4, size of a* 8, size of a[0] 4
1 A.
```

```
○ B.
C.
O D.
No, the answer is incorrect.
Score: 0
Accepted Answers:
6) int main()
       int A[6] = \{1, 2, 1, 0, 3, 2\};
       int *t = &(A[0]);
       int **it = &t, *w = &(A[1]);
       while ( w < &(A[6]))
             if(*w < *t)
                  *it = w;
             W++;
       printf( "%d %d\n", *t, *(*it));
       return 0;
```

```
A. 13
    B. 11
    C. 23
    D. 00
1 A.
```

No, the answer is incorrect. Score: 0 Accepted Answers:

○ B. C. D.

5 points

10 points

10 points

5 points

5 points

5 points