Week 8 Quiz

The due date for submitting this assignment has passed. Due on 2020-03-25, 23:59 IST. As per our records you have not submitted this assignment.

1) Consider the following code.
char buffer[80];
cin >> buffer;
cout << buffer;
Assume the user types "Sachin Tendulkar" without the quotes as the input. What will be printed?

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: String) Sachin

2) Consider the following code.
char buffer[80];
cin.getline(buffer,80);
cout << buffer;
Assume the user types "Sachin Tendulkar" without the quotes as the input. What will be printed?

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: String) Sachin Tendulkar
Consider the following program
int main(int argc, char *argv[]){
    for (int i=0; i<argc; i++)
        cout << argv[i] << endl;
}
Suppose it is invoked from the command line as:
./a.out On Education
3) What will the value of ‘argc’ be?

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 3

4) What will the value of ‘argv[1][1]’ be? Write without placing quotes etc. Do not write additional spaces in the answer.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: String) n

Given below is the code for binary search from the lecture, with small modifications; a couple of original lines are commented out & new lines have been added in their place”.

```c
//int Bsearch(int A[], int S, int L, int x){
int Bsearch(int A[], int S, int L, int x){
    //  if(L == 1) return A[S] == x;
    if(L == 1) return S;
    int H = L/2;
    if(x < A[S+H])
        return Bsearch(A, S,   H,   x);
    else
        return Bsearch(A, S+H, L-H, x);
}
```

Suppose we do binary search (as in the lecture) on an array of size 100000. The number of array elements that x will be compared with will be about

5) Suppose we do binary search (as in the lecture) on an array of size 100000. The number of array elements that x will be compared with will be about
No, the answer is incorrect.
Score: 0
Accepted Answers:

6) $T_n = 2T_{n/2} + n$ and $T_1 = 0$. What is the value of $T_{64}$?

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

7) The function merge discussed in the lecture does 2 kinds of comparison: inter key (i.e. between $U[i]$ and $V[v]$) and inter indices (i.e. between $uf,vf,Lu,Lv$). For which of the cases below will the number of inter key comparisons be largest?

A two dimensional array is useful for storing image. If we have a black and white image with $m$ rows each having $n$ pixels, this is easily represented using a bool array $A[m][n]$, where true indicates black colour and false indicates white. The following code counts the number of vertical lines in a picture. A vertical line is a contiguous sequence of black pixels, one below the other, of any positive length, terminated on either end by a white pixel or by the end of the picture. A vertical line can even be just one pixel in length.

```cpp
int found=0;
for(int i=0; i<m; i++)
    for(int j=0; j<n; j++)
        //beginning of inner iteration
        if(A[i][j]){
            found++;
            for(int k=i; k<m; k++)
                if(A[k][j]) A[k][j] = false;
            else break;
        }
    cout << found << endl;
```

8) Suppose that originally the image $A$ contained 5 vertical lines. Consider the point in time when control reaches the beginning of the inner iteration, and $i=25$, $j=16$, and $found = 2$.

Which of the following is true?

- $A[10][40]$ must be false.
9) Which of the following is true?

- A[10][40] must be true.
- A[10][40] may be true or false, we do not know which based on what is given.

No, the answer is incorrect.
Score: 0
Accepted Answers:
A[10][40] must be false.

10) How many vertical lines will be present in the image at this point?

- A[25][40] must be false.
- A[25][40] must be true.
- A[25][40] may be true or false, we do not know which based on what is given.

No, the answer is incorrect.
Score: 0
Accepted Answers:
A[25][40] may be true or false, we do not know which based on what is given.

(TYPE: Numeric) 3