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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Problem Solving Through Programming In C (course)



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Course outline

How does an
NPTEL
online
course
work? ()

Week 0 : ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Week 9 : Assignment 9

The due date for submitting this assignment has passed.

Due on 2023-09-27, 23:59 IST.

Assignment submitted on 2023-09-25, 20:45 IST

1) What is the worst case complexity of selection sort?

1 point

- ☐ a) $O(n \log n)$
☐ b) $O(\log n)$
☐ c) $O(n)$
☒ d) $O(n^2)$

Yes, the answer is correct.
Score: 1

Accepted Answers:

d) $O(n^2)$

2) What is the best case and worst case complexity of ordered linear search?

1 point

- ☐ a) $O(n \log n)$, $O(\log n)$
☐ b) $O(\log n)$, $O(n \log n)$
☐ c) $O(n)$, $O(1)$
☒ d) $O(1)$, $O(n)$

Yes, the answer is correct.
Score: 1

Accepted Answers:

d) $O(1)$, $O(n)$

3) Given an array `arr = {12, 34, 47, 62, 85, 92, 95, 99, 105}` and `key = 34`; what are the mid values (corresponding array elements) generated in the first and second iterations? **1 point**

Week 6 ()**Week 7 ()****Week 8 ()****Week 9 ()**

- Lecture 41:
Substitution of
include and
Macro (unit?
unit=85&lesso
n=86)
- Lecture 42:
"search" as a
function (unit?
unit=85&lesso
n=87)
- Lecture 43:
Binary Search
(unit?
unit=85&lesso
n=88)
- Lecture 44:
Binary Search
(Contd.) (unit?
unit=85&lesso
n=89)
- Lecture 45:
Sorting
Methods (unit?
unit=85&lesso
n=90)
- **Quiz: Week 9
: Assignment
9
(assessment?
name=260)**
- Week 9 :
Programming
Assignment 1
(/noc23_cs121
/progassignment?
name=262)
- Week 9 :
Programming
Assignment 2
(/noc23_cs121
/progassignment?
name=263)

- ☐ a) 85 and 12
- ☒ b) 85 and 34
- ☐ c) 62 and 34
- ☐ d) 62 and 47

Yes, the answer is correct.
Score: 1

Accepted Answers:
b) 85 and 34

4) When the Binary search is best applied to an array? **1 point**

- ☐ a) For very large size array
- ☒ b) When the array is sorted
- ☐ c) When the array elements are mixed data type
- ☐ d) When the array is unsorted

Yes, the answer is correct.
Score: 1

Accepted Answers:
b) When the array is sorted

5) Consider the array A[] = {5,4,9,1,3} apply the insertion sort to sort the array. **1 point**
Consider the cost associated with each sort is 25 rupees, what is the total cost of the insertion sort for sorting the entire array?

- ☐ a) 25
- ☐ b) 50
- ☒ c) 75
- ☐ d) 100

Yes, the answer is correct.
Score: 1

Accepted Answers:
c) 75

6) Select the code snippet which performs unordered linear search iteratively? **1 point**

☒ a)

```
int unorderedLinearSearch(int arr[], int size, int data)
{
    int index;
    for(int i = 0; i < size; i++)
    {
        if(arr[i] == data)
        {
            index = i;
            break;
        }
    }
    return index;
}
```

● Week 9 :
Programming
Assignment 3
(/noc23_cs121
/progassignment?name=264)

● Week 9 :
Programming
Assignment 4
(/noc23_cs121
/progassignment?name=265)

○ Feedback
Form of Week
9 (unit?
unit=85&lesson=266)

Week 10 ()

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**Problem
Solving
Session -
July 2023 ()**

b) `int unorderedLinearSearch(int arr[], int size, int data)`
{
 int index;
 for(int i = 0; i < size; i++)
 {
 if(arr[i] == data)
 {
 break;
 }
 }
 return index;
}

c) `int unorderedLinearSearch(int arr[], int size, int data)`
{
 int index;
 for(int i = 0; i <= size; i++)
 {
 if(arr[i] == data)
 {
 index = i;
 continue;
 }
 }
 return index;
}

○ d) None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) `int unorderedLinearSearch(int arr[], int size, int data)`
{
 int index;
 for(int i = 0; i < size; i++)
 {
 if(arr[i] == data)
 {
 index = i;
 break;
 }
 }
 return index;
}

7)

1 point

```

What will be the output?
#include<stdio.h>
#define func1(a,b) a > b ? b : a
#define func2(a,b); {temp=a;a=b;b=temp;}
int main()
{
    int a=3, b=5,temp;
    if((3+func1(a,b)) > b)
        func2(a,b);
    printf("%d %d", a,b);
    return 0;
}

```

- ☐ a) 3 5
☐ b) 3 0
☐ c) 5 0
☒ d) 5 3

Yes, the answer is correct.

Score: 1

Accepted Answers:

d) 5 3

8) Consider an array of elements arr[5]= {5,4,3,2,1}, what are the steps of insertions done while doing insertion sort in the array. **1 point**

- ☒ a) 4 5 3 2 1
 3 4 5 2 1
 2 3 4 5 1
 1 2 3 4 5
☐ b) 5 4 3 1 2
 5 4 1 2 3
 5 1 2 3 4
 1 2 3 4 5
☐ c) 4 3 2 1 5
 3 2 1 5 4
 2 1 5 4 3
 1 5 4 3 2
☐ d) 4 5 3 2 1
 2 3 4 5 1
 3 4 5 2 1
 1 2 3 4 5

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) 4 5 3 2 1
 3 4 5 2 1
 2 3 4 5 1
 1 2 3 4 5

9) What will be the output of the following C code?

1 point

```
#include <stdio.h>
#if A == 1
    #define B 0
#else
    #define B 1
#endif
int main()
{
    printf("%d", B);
    return 0;
}
```

- ☐ a) 0
- ☒ b) 1
- ☐ c) 01
- ☐ d) None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

b) 1

10) What will be the output?

1 point

```
#include <stdio.h>
#define a 10
int main()
{
    printf("%d ", a);
    int a=50;
    printf("%d ", a);
    return 0;
}
```

- ☐ a) 10 10
- ☐ b) 10 50
- ☐ c) 50 50
- ☒ d) Compilation error

Yes, the answer is correct.

Score: 1

Accepted Answers:

d) Compilation error

