



Bachelor of IT (Computer Science)
Assignment 1
CAB301 - Algorithms and Complexity

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Contents

1	Algorithm Design	2
1.1	FirstComeFirstServed Method	2
2	Analysis	2
2.1	Jobs ADT	2
2.2	JobCollection ADT	2
2.3	Scheduler ADT	2
3	Testing	2
3.1	Jobs ADT	2
3.2	JobCollection ADT	2
3.3	Scheduler ADT	2

1 Algorithm Design

1.1 FirstComeFirstServed Method

This method is used to sort jobs for first come first served scheduling. It achieves this by using insertion sort to sort the jobs by their arrival time. The algorithm

```
ALGORITHM FirstComeFirstServed()
    // Let  $(n)$  be count
    // Returns a new array of jobs sorted by their arrival time
     $A \leftarrow J.ToArray()$ 
    for  $i \leftarrow 0$  in  $n - 1$  do
        for  $j \leftarrow 0$  in  $n - 2$  do
            if  $A[j].arrivalTime > A[j + 1].arrivalTime$ 
                 $temp \leftarrow A[j]$ 
                 $A[j] \leftarrow A[j + 1]$ 
                 $A[j + 1] \leftarrow temp$ 
    return  $A$ 
```

2 Analysis

2.1 Jobs ADT

2.2 JobCollection ADT

2.3 Scheduler ADT

3 Testing

3.1 Jobs ADT

3.2 JobCollection ADT

3.3 Scheduler ADT