PLATINUM JUBLEE

Celebrating 75 years of WCE & 20 years of Department

20 YEARS OF EXELLENCE

Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

Department of Information Technology

Computer Algorithms

Assignment 1

Submitted by

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QuickSort Algorithm:

```
#include<stdio.h>
void swap (int *x, int*y)
{
   int temp;
   temp = *x;
   *x = *y;
   *y = temp;
}

int partition (int Arr[], int l, int h )
{
    int i=l, j=h;
    int pivot=Arr[l];
    do
    {
    do {i++;} while(Arr[i] <= pivot);
    do {j-- ;} while(Arr[j] > pivot);
    if( i<j)
    swap(&Arr[i], &Arr[j]);

    } while(i<j);
    //once i>j, swap Arr[j] with pivot i.e Arr[l];
    swap(&Arr[l], &Arr[j]);
    return j; //returning sorted position
```

```
}
void QuickSort(int Arr[], int l , int h)
{
   int j; //sorted position
   if(l<h)
   {
      j = partition (Arr, l, h);
      QuickSort(Arr,l,j); //the sorted element acts as an end mark of left sublist
      QuickSort(Arr, j+1 ,h);
   }
}
int main (){
   int Arr[10000];
   for (int j=0; j<10000; j++)
   {
   Arr[j] = j+1;
   }
   QuickSort(Arr,0,10000);
   printf("Sorted elements are as follows\n");
   for (int i=0; i<10000; i++)
   {
   printf("%d ",Arr[i]);
   }
   printf("\n");
   return 0;
}
```