

DSA Assignment

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CSE-E Section

1 st year

1. Write a program to insert an integer at a given position in an integer array.

***solution:**

```
#include <stdio.h>

void main()
{
    int a[100],i,x,position,element;
    printf("Enter the value of x");
    scanf("%d",&x);
    printf("Enter the values in the array");
    for(i=0;i<x;i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Enter the position of be inserted");
    scanf("%d",&position);
    for(i=0;i<x-position;i++)
    {
        a[x-i]=a[x-(i+1)];
    }
```

```
printf("Enter the number to be inserted");
scanf("%d",&element);
a[position-1]=element;
x=x+1;
printf("After inserting \n");
for(i=0;i<x;i++)
{
    printf("%d",&a[i]);
}
}
```

2. Write a program to delete an integer from a given location from the array.

***solution:**

```
#include<stdio.h>

int main()
{
    int num[100],i,n,pos;
```

```
printf("enter the size of array we need : ");
scanf("%d",&n);
for(i=0;i<n;i++)
{
    printf("Enter the value of the number : ");
    scanf("%d",&num[i]);

}
printf("Enter at which position we need to remove element");
scanf("%d",&pos);
for(i=0;i<n-pos;i++)
{
    num[pos+(i-1)]=num[pos+i];

}
n=n-1;
for(i=0;i<n;i++)
{
    printf("%d",num[i]);

}

}
```

3. Write a program to delete a given integer from an integer array.

***solution:**

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int number[5], pos, i,n;
```

```
    printf("Enter number of elements in array : ");
```

```
    scanf("%d",&n);
```

```
    printf("Enter %d element :\n",n);
```

```
    for (i=0;i<n;i++)
```

```
        scanf("%d",&number[i]);
```

```
    printf("Enter the loc of the element to delete : ");
```

```
    scanf("%d",&pos);
```

```
    for(i= pos-1;i<n-1;i++)
```

```
        number[i] = number[i+1];
```

```
    for(i=0;i<n-1;i++)
```

```
printf("%d", number[i]);
```

```
if (pos >= n+1)
```

```
    printf("The process of deleting the element is not possible. ");
```

```
    return 0;
```

```
}
```

4. Write a program to insert an integer after a given integer in an integer array.

***solution:**

```
#include <stdio.h>
```

```
void main()
```

```
{
```

```
    int number[10];
```

```
    int i, n, position, ele, found = 0;
```

```
    printf("Enter array size\n");
```

```
    scanf("%d", &n);
```

```
    printf("Enter the elements\n");
```

```
    for (i = 0; i < n; i++)
```


```
    {
```

```
        scanf("%d", &number[i]);
```

```
    }
```

```
    printf("Enter the element to be inserted\n");
```

```
scanf("%d", &ele);
for (i = 0; i < n; i++)
{
    if (number[i] == ele)
    {
        found = 1;
        position = i;
        break;
    }
}
if (found == 1)
{
    for (i = position; i < n - 1; i++)
    {
number[n-i]=number[n-(i+1)];
    }
    n=n+1;
    number[position-1]=ele;
    printf("The resultant vector is \n");
    for (i = 0; i < n - 1; i++)
    {
        printf("%d\n", number[i]);
    }
}
```



```
else
    printf("Element %d is not found in the vector\n", ele);
}
```