

Assignment - 5

- 1) Write a program in C to find the largest element using Dynamic Memory Allocation.

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
    int n;
```

```
    double *data;
```

```
    printf("Enter the total number of elements:");
```

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

```
    data = (double *) calloc(n, sizeof(double));
```

```
    if(data == NULL)
```

```
{
```

```
    printf("\n Error !!! memory not allocated");
```

```
    exit(0);
```

```
}
```

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

```
{
```

```
    printf("Enter number %.d: ", i+1);
```

```
    scanf("%lf", data+i);
```

```
}
```

```
for (int i = 1; i < n; ++i)
```

```
{
```

```
if (*data < *(data + i))
```

```
{
```

```
*data = *(data + i);
```

```
}
```

```
}
```

```
printf("\n Largest number = %d", *data);
```

```
free(data);
```

```
return 0;
```

```
}
```

- 2) Write a program in C to implement binary search using pointers.

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

```
int i, l;
```

```
int search(int, int *, int);
```

```
int main()
```

```
{  
    int n, m;
```

```
    printf("Enter the size of array:");
```

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

```
    int a[n];
```

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

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

```
    {
```

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

```
        search(n, a, m);
```

```
    }  
    return 0;
```

```
}  
int search(int n, int *a, int m)
```

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

```
    {  
        if (m == a[i])
```

```

    {
        l = 1;
        break;
    }
}
if (l == 1)
{
    printf("%d is present in the array", m);
}
else
{
    printf("%d is not present in the array", m);
}
}
}

```

3) What are streams? Explain them with proper examples.

A stream is a logical entity that represents a file or device, that can accept input or output. All input and output functions in standard C, operate on data streams.

and binary streams.

Stream
name

purpose

Functions that
use it

stdin

The input device
from which your
c program usually
receives its
data

getchar()

getchar_
unlocked()

getc()

scanf()

etc.

stdout

The output
device to which
your c program
normally directs
its output

printf()

puts()

putchar()

puts_unlocked()

etc.

4) Discuss briefly about file random
access functions

Random access file in c enables us
to read or write any data in our
disk file without reading or
writing every piece of data before
it. ftell() is used to find the position

of the file pointer from the starting of the file the position of the file pointer from the starting of the file. `rewind()` is used to move the file pointer to the beginning of the file.

5. What are error handling functions in files mean?

Error handling is not supported by C language. There are some other ways by which error handling can be done in C language. The header file "error.h" is used to print the errors using `return` statement function. It returns -1 or NULL in case of any error and error variables are set with the error code.