

## **Applications Of Stack**

Stack is a very imp't data structure used by COMPILERS as well as programmers for many types of operations and algorithms

1. Compilers use Stack to store local variables

```
#include <stdio.h>
int main()
{
    int a,b,c;
    printf("Address of a is %llu",&a);
    printf("\nAddress of b is %llu",&b);
    printf("\nAddress of c is %llu",&c);
    return 0;
}
```

Output:

=====

Address of a is 6422044

Address of b is 6422040

Address of c is 6422036

2. Compilers use Stack to pass arguments to a function

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

```
int main()
```

```
{  
    int a=10;  
    printf("%d %d",++a,a++);  
    return 0;  
}
```

OUTPUT:

12 10

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

```
int main()
```

```
{  
    int a=10;  
    printf("%d %d %d",a==10,a>5,a=4);  
    return 0;  
}
```

OUTPUT:

0 0 4

3. Compilers use Stack to store the RETURN ADDRESS whenever they execute a FUNCTION CALL

```
void show();  
void display();  
int main()  
{  
    show();  
    display();  
    return 0;  
}
```

