Constants

CHAPTER 21

SURESH TECHS

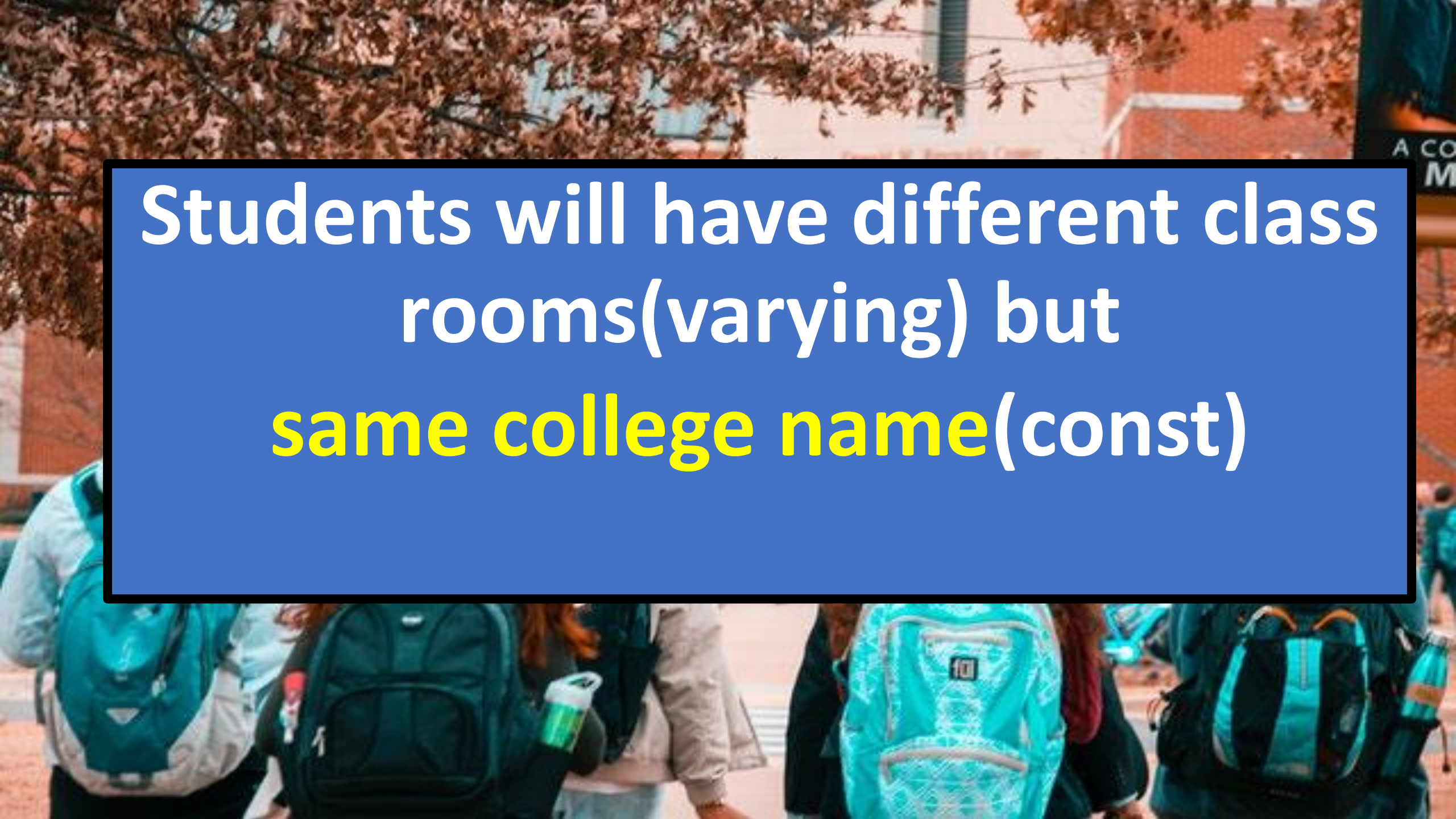
C PROGRAMMING COURSE

What is a Variable?

- **Used to store data** and that can be **changed at anytime later**

- What **if you don't want to** change data inside a variable 🤔 may be accidently?

```c
#include<stdio.h>
int main(){
    int a;
    int b;
    a = 10;
    b = 30;
    int sum = a+b;
    printf("%d\n",sum);
    a = 90;
    int sub = a-30;
    b = sub;
    printf("a = %d, b = %d",a,b);
    return 0;
}
```



Students will have different class rooms(varying) but same college name(const)

```c
#include<stdio.h>
int main(){
    int SUM = 10;
    printf("sum is: %d\n",SUM);
    SUM = 20;//works fine
    printf("sum after change: %d",SUM);
return 0;
}
```

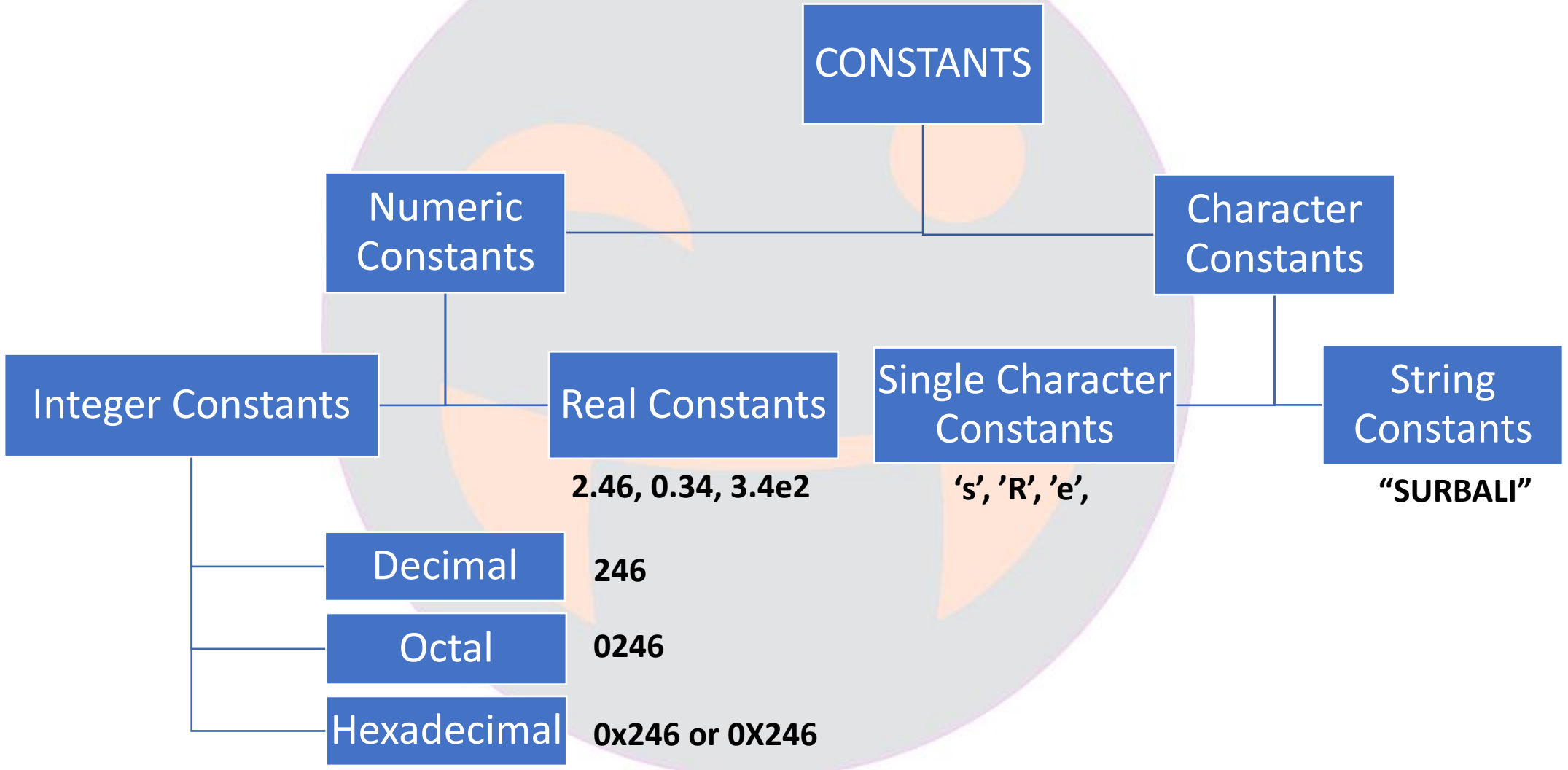
```c
#include<stdio.h>
int main(){
    const int SUM = 10;
    printf("sum is: %d",SUM);
    SUM = 20;//assignment of read-only variable 'SUM'
    printf("sum after change: %d",SUM);
return 0;
}
```

Constants

- Constants are **like variables**, except that **their value never changes** during the execution.
- Syntax: **const** type constantname
- **const keyword** defines a constant in C
- It is **best practice to define constants using upper-case names**

```c
#include<stdio.h>
int main(){
    const int SUM = 10;
    printf("sum is: %d",SUM);
    SUM = 20;//assignment of read-only variable 'SUM'
    printf("sum after change: %d",SUM);
return 0;
}
```

Types of constants



Difference between variable and constant

Variable	Constant
Value is varying	Value is fixed
Can be changed if required	Can not be changed
Ex: int sum = 10; sum = 20;	const int sum = 10; sum = 20; //Error: constants can not be modified once defined

```c
#include<stdio.h>
int main(){
    int SUM = 10;
    printf("sum is: %d\n",SUM);
    SUM = 20;//works fine
    printf("sum after change: %d",SUM);
return 0;
}
```

```c
#include<stdio.h>
int main(){
    const int SUM = 10;
    printf("sum is: %d",SUM);
    SUM = 20;//assignment of read-only variable 'SUM'
    printf("sum after change: %d",SUM);
return 0;
}
```

Note

- We can also use #define pre-processor to define constants

```c
#define SUM 10
#include<stdio.h>
int main(){
    printf("sum is: %d\n",SUM);
    SUM = 20;//Error
    printf("sum after change: %d",SUM);
return 0;
}
```

```c
#include<stdio.h>
int main(){
    int num1 = 10;
    int num2 = 20;
    int sum = num1+num2;
    printf("Sum is: %d",sum);
    return 0;
}
```

```
Sum is: 30
```

Enter number 1: 40
Enter number 2: 50
Sum is: 90

Enter number 1: 400
Enter number 2: 1150
Sum is: 1550

Reading data from the keyboard

scanf

What next?

To understand scanf(), we should understand more about **printf()** first