C Langugage

```
void myBusinessLogic();

int main(){
myBusinesssLogic();
return 0;
}

void myBusinessLogic(){
//code
}
```

10

int num1

int int

4 bytes

10

200

0Xff200d

num1

CPP

```
void myBusinessLogic();

int main(){
myBusinesssLogic();
return 0;
}

void myBusinessLogic(){
//code
}
```

OOSD (Object Oriented Software Development)
1. OOA -> (Object Oriented Analysis)
2. OOD -> (Object Oriented Design)
3. OOP -> (Object Oriented Programming)

OOA ->
Data ?
related ?

In Punch
Out Punch
Student
Date

```
Student{
int rollno;
string name;
string mobile;

}

Attendance{
Student s;
Time inpunch;
Time outpunch;
Date d;
}

Date{
int day;
int month;
int year;
}

Time{
int hrs;
int mins;
}
```

```
struct Person{
int age;
char name[10];
};
```

```
main(){
int arr[5]
char* ptrarr[]
}
```

- Object-oriented programming

Process, Methodology

Major Pillars (Required)
- Abstraction
- Encapsulation
- Modularity
- Hirerachy

Minor Pillars (Optional)
- Polymorphism/Typing
- concurrency
- Persisitance

Major Pillars -

1. Abstraction
   - Getting to know the essesntial details
   - printf("Hello world\n");

2. Encapsulation
   - Implementation of Abstraction is encapsulation
   - Definining/ Implemention a function is encapsulation

3. Modularity
   - Dividing the problem statement into smaller statements

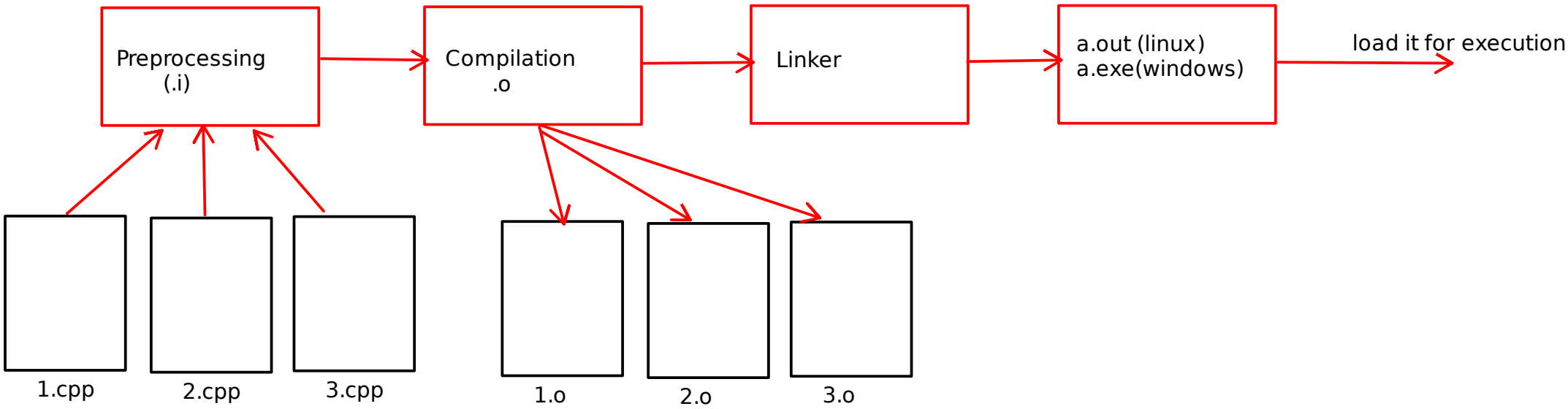
4. Hirerachy
   - Reusing the objects based on the realtionship

Minor Pillars -

1. Polymorphism/Typing
   - An entity that can take multiple forms we call it as Polymorphism
2. Concurrency
   - Support for Executing the multiples tasks concurrently.
3. Persistance
   - File IO

```
void add(int n1, int n2){
      printf(n1+n2);
}

void add(double n1, double n2){
      printf(n1+n2);
}

void add(Time t1, Time t2){
      //logic
}
```

```
add(10,20);

add(10.20,20.30);

add(t1,t2);
```



Data Types	Memory	Nature	Operations
int	4 bytes	Whole numbers Integer numbers	Arthmetic Operatins
bool	1 byte	boolean values	true,false , Logical Operation

1. Fundamental Datatypes

It will be helpful for learning Java datatypes

void, char,int,float,double,bool,wchar_t

2. Derived Datatypes

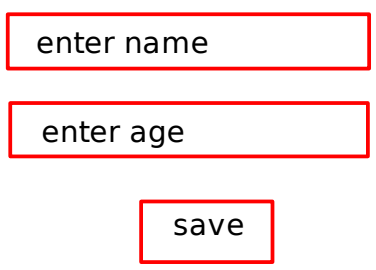
array, pointer,....

3. User Defined Datatypes
struct,class

```
bool status= false;
```

int -> 4

```
bool flag = true;
```




```
if(nameisentered() && ageisentered()){
enableSavebutton()
}
else{
disablesaveButton()
}
```

char

wchar_t wide Character

windows - 2 bytes

linux - 4 bytes

wchar_t
A - 65

ASCII Char set
A - 65

print("Enter your first char of name in hindi")

wcout,wcin is used in CPP to dsiplay wide char on console and to take wide char input from user

Type Modifiers

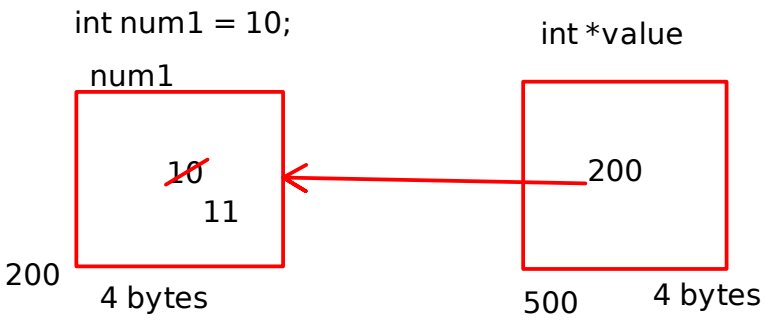
int -> 4 bytes

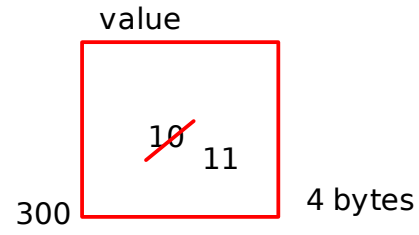
long int -> 8 bytes

Type Qualifiers

const

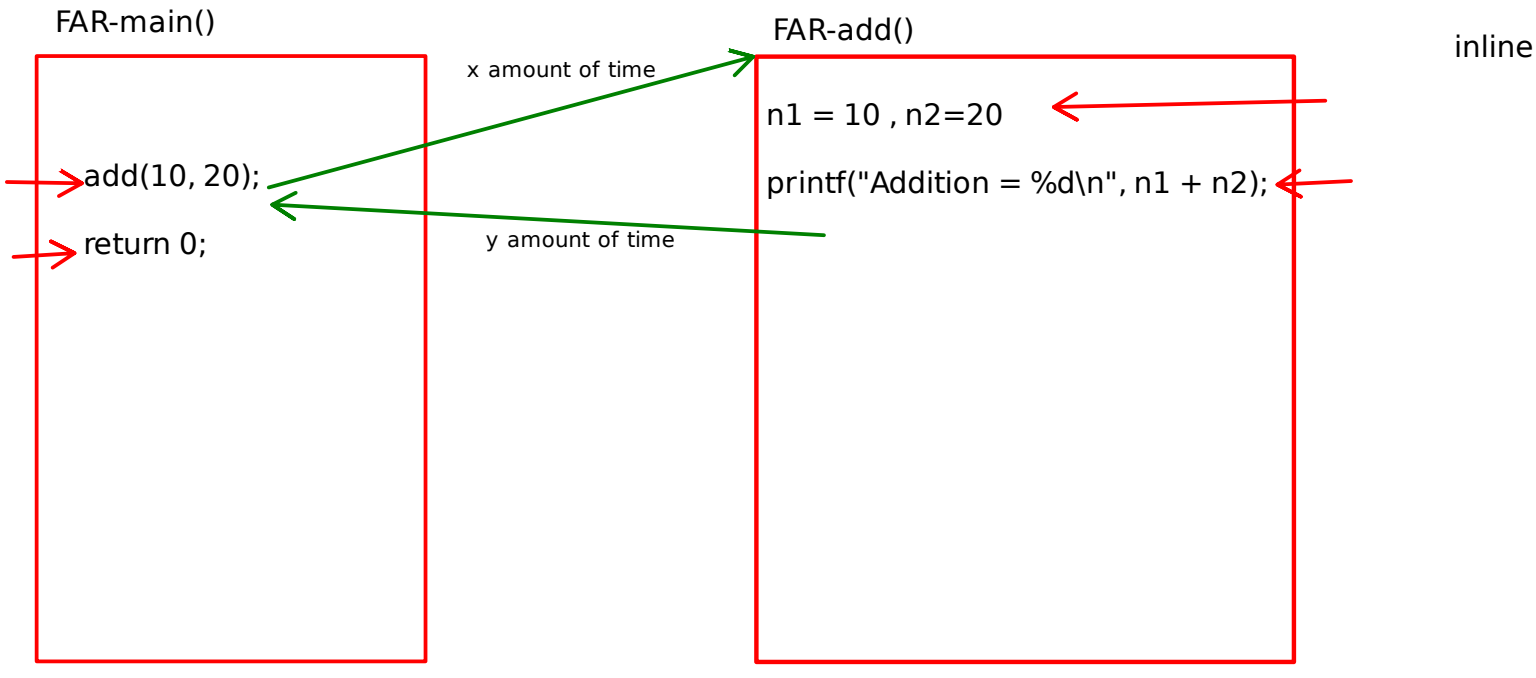
const int num = 10;






```
                                        10
void changevalue(int value){
value++;
}

main(){
int num1 = 10;
changevalue(num1); pass by address
                    10
printf(num1); // 10
}
```

```
                                        200
void changevalue(int *value){
(*value) ++;
}

main(){
int num1 = 10;
changevalue(&num1); // pass by address
                    200
printf(num1); // 11
}
```



add-execution time < total time of(creating + destructing FAR)

inline is just a request made towards the compiler
compiler can accept or reject the request.

un -
pw(token) -

// to insta