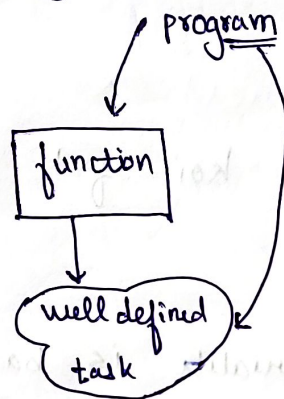# Class 3 Week 2 :-

Why functions?

(To avoid) lengthy - or Bulky - code.

• Not Reusing

• Buggy code ko htanu k liye

• They provide readibility

1) -

```
void printName(){
        int n;
        cout <<"Enter value of n" << endl;
        cin>>n;
        for(int i=0; i<n; i++){
                cout << "Akshat" << endl;
        }
}

int main(){
        // function call
        printName();

        return 0;
}
```
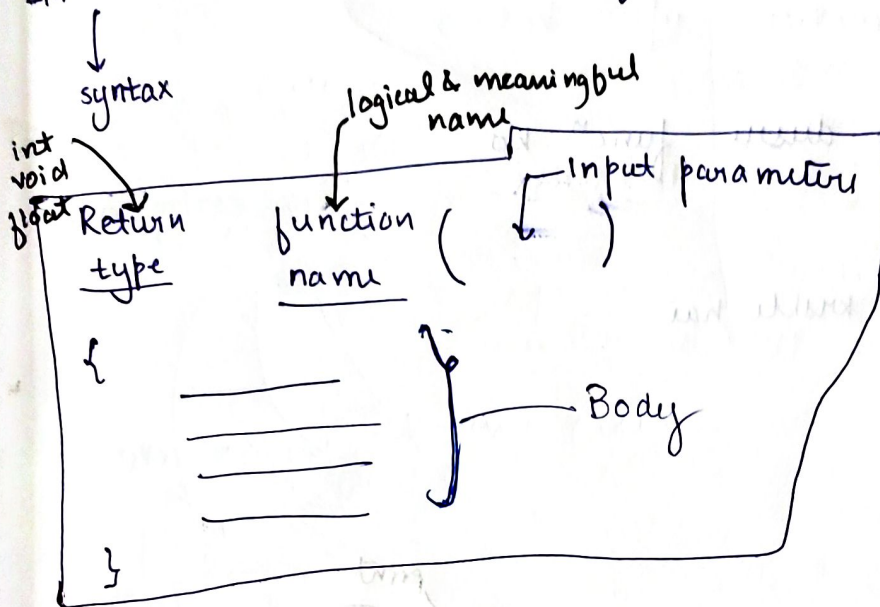
Linked with a well defined ~~to~~ task.

↓

syntax

int
void
float   Return   function   ( ) ← Input parameter
        type   name

logical & meaningful name

{
_____
_____
_____   } — Body

}

Exploration ↑

Spoonfeeding

0 – 1%

99%

function name

void   printName (✓) ← No input parameter

return type   {   → syntax

_____
_____
_____

}
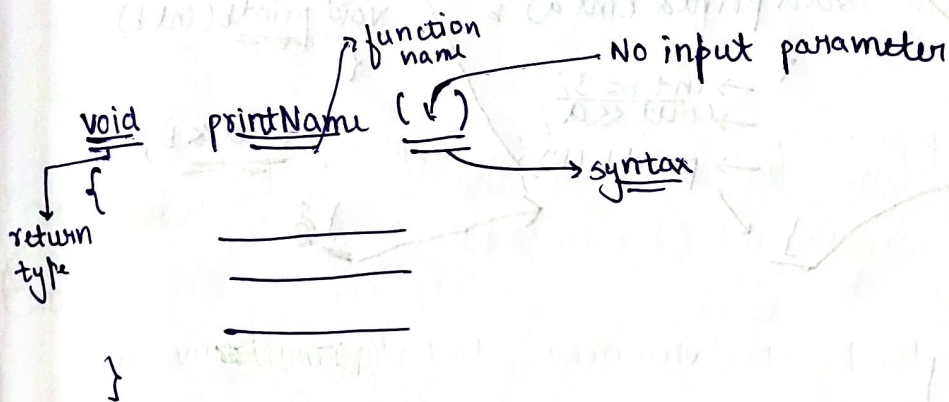
int main()

{
_____
_____
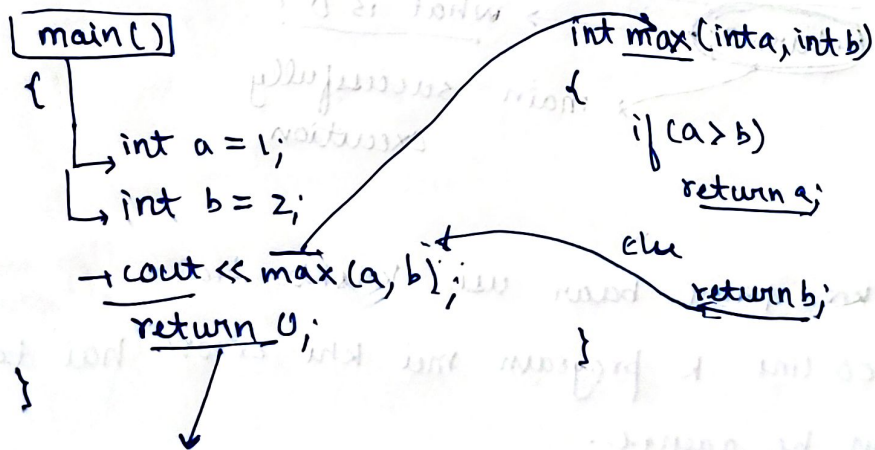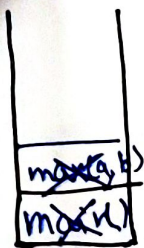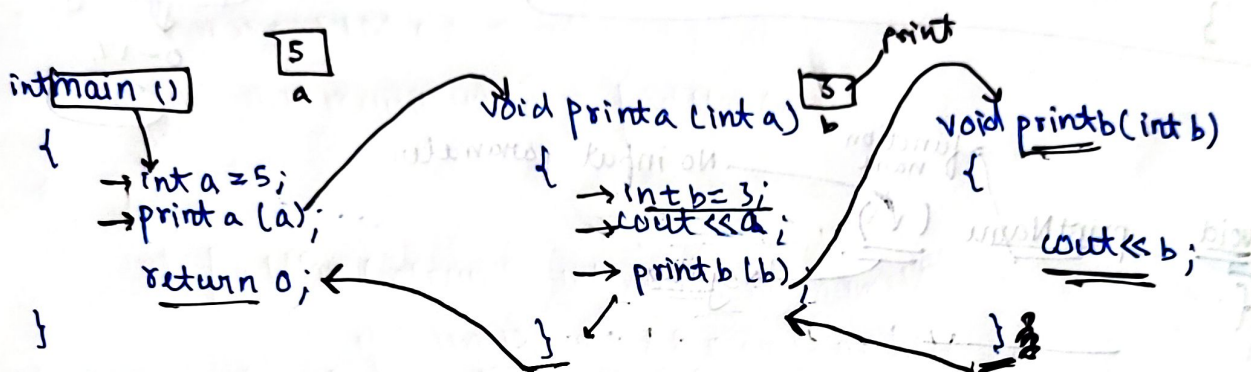return 0; ——————→ what is 0?

}   ——→ main successfully
                     execution

• Code ko baar baar use krskte hain.

• Agr 100 line k program mei khi error hai toh, seedhe function pe aaenge.

• Readibility ✓

Function call stack:-

→ function call

→ kis function ne dusre func^n ko call kiya.

→ function k kya krskta hai

```
int main ()        [5]
{                   a
  → int a = 5;
  → print a (a);
    return 0; ←
}
```

```
void printa (int a)              [5] → print
{                                 void printb (int b)
  → int b = 3;                    {
  → cout << a ;                     cout << b;
  → printb (b);
}                                 }
```

```
| printb(b) |
| printa    |
| main      |
```

```
|        |
|        |
| empty  |
```

```
|          |
| max(a,b) |
| main()   |
```

```
main ()
{
  ↳ int a = 1;
  ↳ int b = 2;
  → cout << max (a, b);
    return 0;
}
```

```
int max (int a, int b)
{
  if (a > b)
    return a;
  else
    return b;
}
```

kisko ja rha hai ? (Operating System)

→ function call or invoke same hota hai !

Pass by value → (copy create hoga) actual value pass nhi
hogi

```cpp
void printNumber (int num){
        cout << num << endl;
}


int main ()
{
        int num = 5;
        print Num (a);
}
```

1) Function to add two Numbers

```cpp
int main (){
    int a;
    cout << " Enter value of a "<< endl;
    cin>>a
    int b;
    cout << " Enter value of b" << endl;
    cin> b;
    int sum = add (a, b);
    int main () {
        cout << sum << endl;
        return 0;
}

void print Number (int num){
        cout << num << endl;
}

int add (int a, int b){
        int result = a + b;
        return result ;
}
```

O/P
Enter value of a : 3
Enter value of b : 4
7

7
result

kisi bhi function ko call, invoke karne k liye uss
funcn ki decleration upar kahi ho.

2) Find max of three numbers.

```cpp
findMax (int num1, int num2, int num3);

int main(){
int a,b,c;
cin >> a >> b >> c;
int maximumNumber = findMax(a,b,c);
cout << maximumNumber;
}

int findMax (int num1, int num2, int num3){
        if (num1 > num2 && num1 > num3){
            return num1;
        }
        else if (num2 > num1 && num2 > num3){
            return num2;
        }
        else{
            return num3;
        }
}
```

3) To write first N no.s.

```cpp
void printCounting (int n){
        for (int i=0; i<=n; i++){
                cout <<i <<" ";
        }
        cout << endl;
}
int main (){
    cout <<
    cin >> n;
    print counting (n);

    return 0;
}
```

4) Grade Problem

```cpp
char getGrade (int marks){
        if (marks >= 90)
                return 'A';
        else if (marks >= 80)
                return B;
        else if (marks >= 70)
                return 'c';
        else if (marks >= 60)
                return 'D';
        else
                return 'F';
}
```

```cpp
int main(){
    int marks;
    cout <<
    cin >> marks;
    char finalGrade = getGrade(marks);
    cout << finalGrade << endl;

    return 0;
}
```

5) Sum of first N even no.s.

```cpp
int getSum(int n){
    int sum = 0;
    for(int i=2; i<=n; i++){
```

```cpp
int getEvenSum(int n){
    int sum = 0;
    for(int i=2; i<=n; i=i+2){
        sum = sum + i;
    }
    return sum;
}
```

```cpp
int main(){

    int n;
    cout << "Enter the value " << endl;
    cin >> n;
    int ans = getEvenSum(n);
    cout << "Even sum is: " << endl;

    return 0;

}
```

o/p

Enter value of n
10
Even sum is 30

% → operator heavy operation krta hai ,