**FUNCTION jab hum koi code likhte h to wo main k ander he execute hota he par program bada ho jaye to code of lines baar baar repeat hoti ho to hum usko function bana k use kar sakte he.**

**line up code ya sub program is called function with particular name,quality, features,abd sub program for reuse also..**

2 kind of dividation in function

1. Built in function (printf,scanf (stdio.h> ,getch,clrscr (conio.h))
2. User defined function use k according banaye gaye or reuse kiye jane wale code.

(add) Iska apna element apna header hota he..jo user define karega..

Element of user define function

1. Function declaration //user define k liye declare
2. Function call //call krke use
3. Function definition //wo code jisme likha hota h ki function call hoga to work kese hoga.

Ager hum khud ka user define function banana chahte he hume y element use karne honge..

Function declaration

1. Function type (return type)
2. Function name
3. Parameters list
4. Termination semicolon

Hume sbse pahle y batana hota h ki function koi value return mkarega ya nahi jo koi use call karta h value return hoti h to return type h..

Function khud create kar rahe h to hum naam raknge jisko reuse kiya ja sake

Parameters list ko arguments bhi kehte he, isse meanes usko kitne int diye jaynge jese 2 no add k parameters int hue eses hum list me arguments pass karte he.

Fumction ko diye jane wale formal arguments list..

Termination semicolon.. (add);

Function k termination l time hum iska use karte h..

Syntax for declatre a function

Addition return syntax

Type function name (parameter list);

Example int add (int,int);

1. Function call

Jab bhi hum function ko use karna chahte he kisi program me kisi bhi jagah pr to hum keval usko call karte he..

Syntax int add(int a, int b);

Ager main program ne ise use karna ho ya call karna ho to iske liye simple code hoga

Main()

{

Int y;

Y=add(10,20); // y line function call ki h( actual argu 10,20 ). code hota he

nction call ki line he

Printf(“%d”,y);

Yaha par jab actual agruments

Yaha par int type ki 1 value return hogi add 2 no. 10 or 20 jo ki actual arguments h unko call karega or jo iska addition hoga y ko return karega..

Y add kese work karega 10 or 20 pr ye sab function definition me likha jata he,jo kii function ka actual code hota h wo tay karta he ki diye gaye actual agrments k sath kese call hokr value return karega..

Function definition

We need 6 parts

1. Function type
2. Function name
3. Parameters list

In teeno part ko hum function header kehte he.ktki jab hum define karte he to sbse upper me y part likhe jate he.

1. Local variablr declarations
2. Function statement
3. A return statement

Y code k ander aate he jaha function kese work liye jayga y likha hota h y part function body k ander aate he

Function header

Syntax type function name parameters list

Aap dekh sakte he y header wala part same function declaration me bhi tha bas 1 main difference y h ki last me terminator use isme nahi hoga..

Int add(int x,int y)

Function body

Header

{

Y sara code function body me aata he…

}

Function users define and pre define…

**WAY TO DEFINE A FUNCTION**

* **Takes nothing, returns nothing**
* **Takes something, returns nothing**
* **Takes nothing, returns something**
* **Takes something, return something**

**1st examples (takes nothing, returns nothing)..**

#include <stdio.h>

Main()

{

Clrscr();

Add();

Getch(); //yaha iska matalb y ki phle add function ka code run hoga then getch(); function…

}

Void add() or void add(void) // yaha void lagane ka matlab y define karna he ki y user defined add() function koi value return nahi karega ,,its not a return types….

{

Int a,b,c;

Printf(“enter a number”);

Scanf(“%d%d”,&a,&b);

C=a+b;

Printf(“result is %d”,c);

}

Ye takes nothings ,returns nothing nature ka h

Par define karna,declare karna,call karna alag alag bath he…

Add() ko define kiya he par ye execute tab hoga jab isko call kiya jayga,to main function k through call, karwane k liye he hu phle main function banate he…

Jese main

{

Clescr();

Add();

Getch();

}

Tab add() function ka code execute hoga or jab y add() function execute ho jayga tab y main function k 3 lines chalegi.

Ab function k imp points

* Yadi koi bhi function takes nothing or return nothing nature kahoga to isko define kiye gaye parenthesis empty hone.isse patachalta he ki y takes nothing he kyki ager y takes something hota to yaha hum kuch variables declaed kar chuke hote..
* Jese aap predefine clrscr(); getch(); ka use karte he to y function takes nothimg nature ka h par printf(); scanf hamesha (takes somethimg nature he shoew karta he)
* Ager takes nothing h to usko define karte waqt us function k naam k phle hum void likhte h y yaha mention kar raha h ki function yaha kuch bhi return nahi karega..

**FUNCTION DECLARATION ?**

Isko function prototype bhi kehte he jese 1 program me jitney bhi woeds likhe hote h jo predefine h to compller ko smjh aata he easily but user define d.t or variables k sath ager koi declaration ho raha to uska type define karna he uska definition hota h ese he function ka bhi declaration hota h…

Void add(void);

Yehota he function ka declaration

Y define karne se kabhi compiler koi error nahi dega …

* **Takes something, returns nothing………………….**

/\*takes something returns nothing\*/

#include<stdio.h>

#include<conio.h>

Void main()

{

Int x,y;

Void add(int, int); y takes nothing return something ko show kar raha h right side return or left side takes ka h confuse nahi hona h ..

Clrscr();

Printf(“enter two numbers”);

Scanf(“%d%d”,&x,&y);

add(x,y); //function call hua isi ko hum bolte he call by value . function call by passing values x or y pass nahi ho rahe h jo a or b me ja rahi h …

getch();

}

Void add(int a,int b) ye definition part he isme bhi () kuch likhna padega

{

Int c;

C=a+b;

Printf(“sum is %d”,c);

}

Is program ko smjhte he…

Hum chahte he ki hamara add function ko call kate he x or y ko call kar le or phle hum 1 imp baat padh chuke heki add ki definition me hum xor y ka use nahi kar sakte y sochkar ki main me bane x or y isme use ho jayge ager hum c=x+y ke denge to main me bane variable me x or y ka dta add ho jayga to esa nahi hoga kyki koi bhi functions sirf unhi variables ko accesss kar sakta he jo uski body me bane ho dusre nahi pr hum chahe he ki add() function me x or ya ka data call ho.

Uska tarila y he ki jab aap add(x,y) function ko call kar rahe he to uske parenthesis me likh dijiye x ,y jese he function call hota he is line se control kaha jata he jaha function define hua h….

To define krte waqt bhi parenthesis me kich likhna padega

Void add(int a,int b) isme varriables ka declaration …jab aap declaration ko define karna chahte he to hamesha usme variables ka declaration hoga or yaad rakhiye yaha int a,b nahi likh sakte jitney variables ka declaration karenge utne baar likhna padega upper x or y me int nahi likha h kyki already declare kar chuke he..

Actual me hum add function call krte waqt hum x or y ki value skar rahe he pass jo ki a or b me ho jaygi copy..

Y takes something kyu h? kyki add() function kisi dusre function ki values take kar raha h..

Hum printf scanf nahi likhnge kyki user se value lene ki jarurat nahi h. yani ki jo a or b me he wo ab x or y k through copy hua h .. means

void add(int a,int b) y confirm kar raha ki values aane wali h..

add() function ko call karega to wo value bhejega jo a or b me a jaygi

ab user se koi naye value alag se mangna logically wrong h.

y smjhna he ki jab takes something ho raha he to user se data lene ki jarurat nahi h.

void add(int,int);

isme akser students confuse hote he ki takes something ka kya matlab h ..takes mreans parenthesis me likhi baat oe return means jo naam k phle likha h void kyki returns nothing he….

Do baat int ka freason y ki hum function ko declare karte waqt hum complier ko y bata rahe he ki jab bhi add () function call hoga usme 2 values likhi jaygi …(x ,y)

* **Takes nothing, returns something**

/\*takes something returns nothing\*/

#include<stdio.h>

#include<conio.h>

Void main()

{

Int s;

Clrscr();

S=Add();

Printf(“sum is %d”,s);

Getch();

}

int add()

{

Int a,b,c;

Printf(“enter two numbers”);

Scanf(“%d%D”,&a,&b”);

C=a+b;

Return (c); or return(a+b);

}

Ab dekhte he is rule me kya hua…

Hum chahte he add function ko call kare or add me kuch bhi pass nahi kar rahe he matlab takes nothing he means define karoge tab bhi yaha kuch nahi likhna tabhi to y takes nothing mana jayga.

Means nothing nature ke function ko koi data nahi mila he. To wo data wo user se he mangega.

To hum yaha a,b c 3 variables banaker printf scanf use karnge.. ir inko hum add bhi karwana chahte he par is baar alag kya h? is result ko hum printf nahi balki return karana chahte he.. acha kya fark hota h.isme…… matlab reason y he.. yadi is baar hum value ko return karwana chahte he yani add function ne jo kaam kiya he uska result add() function kar dega return kisko return karega jisne add ko call kiya tha yani main function ko. To esa soch lo aap main ho or me add hu apne muje call kiya kyu call kiya..kyki app 2 numbers ko add karwana chaahte ho ..me add hu mujhe 2 numbers add karna aata he .apne mujhe call kiya to apne mujhe numbers nahi diye ..numbers mene user se directly mange..pr mera nature returns something wala he to mene result apko return kiya.jo result aaya mene apko return kiya..

To yaad rakhiye return something jab bhi hum karte he. To hum us result ko khud use nahi karte return karteb he or jisne call kiya uske pass wo value pahuch jati h.to y jo printf humne likha hua h last add function k ander wo hum nahi likhna chahte or iski jagah par hum kya ,ikhne wale he return keyword to y return karane k liye jaruri he ki y keyword likha jaye

Uske baad app parenthesis me () me likhe dete he c to c me jo value h wo return ho jaygi…

Return(c);

Ab bataiye y c kis type ka he jo value return kar raha he int ka h na.. isliye hum add function k phle void ko hatakar int liknge.

Int add() likhne void tab likhte he jab function kuch bhi return nahi karta he.right.

Jab hum return kara rahe he to jis type ki value hum return karayge wo type humko likhna padta he

Matlab hum ab shmj gaye he to return ki gayi value gai kaha? Waha jaha se y function call hua h. to to iske liye ki hum us value ka main me use ar sake variable banayge or uske ander is value ko assign karwayge. To uske liye phle 1 variable ceclare karna padega to

S=add(); humne kiya

To ab jo c ki value return(c); se return ho rahi h wo sidhe is portion par jaygi s=add();

Jese c me 2 no. ka sum rakha hua h 30 to 30 kaha chala gaya is add ki jagah. 30 a jayga. Ab jab s me 30 chala gaya to print krwaynge to hum sum is %d k baad kya hum c likhne .. nahi.. kyki ab wo value return hokr s me a chukka he . to hum s likhne ..or ager is type ko globally declare kawana chahte he to header files k niche hum int add(void); show karwa dete he…..

Ab wo imp baate jo return k bare me hee

Return ki help se hum 1 se jyada values return nahi kara sakte.. kyu?

Kyki jo value aap return karwaoge wo function call ki jagah par jaygi. To we can return any 1 value

Ager hum return (c,a,b); is tarah se likhne ki koshish karnge to last ki value yani b ki he jaygi error show nahi hogi… one more imp.. aap return k baad koi bhi lineprintff me nahi likh sakte kyki jese he return execute hoga wo us fuction me jayga jaha se call hua he to stmt ki nechje wali line nahi chalegi…….

* **Takes something, return something**

/\*takes something returns someting\*/

#include<stdio.h>

#include<conio.h>

Int add(int,int); // 2 arguments pass hone chahiye

Void main()

{

Int s,x,y;

Printf(“enter 2 numbers”);

Scanf(“%d%d”,&x,&y);

Clrscr();

S=Add(x,y);

Printf(“sum is %d”,s);

Getch();

}

int add(int a,int b) //define karte waqt variables bhi declare karne padenge..to ander nahi karnge

{

Int c; // c jarur karenge

C=a+b;

// yaha hum printf scanf nahi likhne kyki hum jante h ki takes somethimg nature ka h

Return (c); or return(a+b);

}

Simple he jaha se humne function ko call kiya waha 2 arguents suplly kiye he x or y ki values jo a or b me transwer ho jaygi or jese add function ki coddin g chalega y value c me chali jaygi oer c ki value exactly wahi jaygi jaha se function hua tha call. Yaani s=add(x,y);

Sum a chukka he s me or s ki value ko print kara diya h is tarike se takes something returns something humne dekha…

**HOW WE CAN USE FUNCTION TO POINTER**

**function to pointer syntax <function return type> (\*pointer name) (function argu.types)**

Examples void(\*prt) (int, int);

Hum jo function k pointer bana rahe he usko bhi uske address ki jarurat hogi?

Syntax = pointer name=&function name;

Example = prt=&add;

Ab hum isko call kese karenge means ager is pointer k through hume function ko call karna he to?

Ager function se call hota to hum siddha add(); ka use karte par y pointer he to syntax y hoga….

Ptr(10,20) [\\argument](file:///\\argument)

Is prt k pass add ka address he ki add function ko 2 arguments pass karega then funcrion call hoga…

Start program

#include<stdio.h>

#include<conio.h>

Void add(int x,int y) //function ready with arguments

{

Printf(“first value %d”,x);

Printf(“second value %d”,y);

Ab x or y ka addition print hoga..

Printf(“addition is %d”,x+y);

We r not using extra variable here because of pointer……..

}

Ab user se value enter karwane k liye main function me.

Main()

Int a,b;

Void (\*prt)(int,int); //function declaration

Ab hum program ne pointer ko function ka address denge..

Prt=add;

//add pointer ko mil gaya he isliye ab only ptr ka bhi use hum kar sakte he..

Printf(“enter first value”);

Scanf(“%d”,&a);

Printf(“enter second value”);

Scanf(“%d”,&b);

//ab function call hoga ptr k through..

Ptr(a,b); //2 arguments pass hoke x or y me copy ho chuke h or isse call ho jaynge...

Getch();

}

**HOW WE CAN PASS STRUCTURE TO FUNCTION**

Jab hum kisi structure ko function me pass karenge to disp(stu);

Jese function pass hote he to variables k type likhte he wese he structure pass hoga to uska type struct likhnge.

Jab hum function define karte h to formal parameters me unka naam bhi likhte h jese(int x,int y)

To is tarike se use karte he.

Declaration = disp(int x, int y);

Display = disp(int a,int b)

Isliye hum ye kehte h ki declaration k samay hume variable type declare kar sakte he jese..

Int,int

#include<stdio.h>

#include<conio.h.

//ab hume structure banate he

Struct student

{

Int roll;

Char name[10];

};

//ab function declare karte he

Void disp(struct student);

// struct me elements store karwane k liye mai function me code liknge

Main()

{

Struct student st; // new variable

Printf(“enter student name”);

Scanf(“%s”,&st.name);

[\\ager](file:///\\ager) yaha & hata de to bhi sahi h kyki %s string type he..

Printf(“entert roll no”);

Scanf(“%d”,&st.roll);

//as a arguments pass lkarna chahte he.

Disp(st);

Getch();

}

// main me structure ka variable st banaya he waha par elements store kiye he or disp function me pass karwaya he ab function definition likhte h..

Void disp(struct student stu) //new variable

{

Printf(“student name %s”,stu.name);

Printf(“student roll no %d”,stu.roll);

}

**HOW TO PASSING ARRAY TO FUNCTION**

#include<stdio.h.

#include<conio.h>

// function declare karte he.

Void disp(int(),int); //array ka subscript..

Ab yaha main function me 1 array banana he or user sevalue enter karani h….

Main()

{

Int arr[5],i; //yaha array me values enter karwani h or usko pass karna he function ko function un values ko print karwayga or uske elements ka sum humko answer k roop me milega function me

Printf(“enter the values in array”);

Ab yaha loop k need he uske liye I variable

For(i=0;i<5;i++)

{

Scanf(“%d”,&arr[i]);

}

//ab array ko pass karna he function k liye..

Disp(arr,5); //function name,pass karne ewala variable arr or sath me uski size jo ki 5 h..ese function call kiya or arrays ko as a agruments pass kiya.. yaha se uska base address pass hota h.

Ab last getch();

}

Ab hum function ko define karte he

Void disp(int ar[],int s) //formal parameters me humne name diya ar[] or s for size

{

Int I,sum=0;

Printf(“elements are”);

For(i=0;i<s;i++)

{

Elements print krwaynge or sum krnge

Printd(“%d”,ar[i]); //arr[]ka base address pass hokr ar[] me aaya wahi liknge

Ab iske jo element he w ar[o],ar[1]………..4 tak exec ute hoga..or elements print honge..

Sum=sum+ar[i];

}

Ab loop se baher aker elements print karwaynge..

Printf(“total=%d”,sum);

}

Is tarah function me y sare elemnets access kiye jaynge….1.naam likhkr as aargument pass karenge

2. function declare hoga to parameters array k tarah hoga.

3. ab size bhi pass ke sakte he jiska use hum loop me karte he…