"I william

```
> vosite a program with a function to swap two numbers using pointers.
```

```
#include < stdio. h>
int main() }
int a, b, temp;
 int * ptort, * ptr2;
 point & ("enter the value of a and 6: ");
 sconf ("./.d //d", &a, D&b);
 pointf("in before obwaffing the numbers a= 1.d and
                100 - 100 - 100 by 100 d' (100 a b) i)
 ptonte & a jar alle 1 en promony 1) I tring
  pk2 = & b;
  demp = *pH1;
  * p#1 = * p#2;
pte 2 = temp;
   point ("In after dwapping a = 1.d and b= 1.d", a, b);
   neturn 0;
                                 ai (Pry) art
   It interpretates promote sollary ) ? tring
output iteration pulymonic
                          proposition of the second
enter the value of a and 60: 2013
before swapping the numbers a= 2 and b=3
After swapping a=3 (and 6=20)
```

```
2) write a program to implement agrance memory
allocation junctions like melloc, calloc, free, realloc
      #include < stdio. h>
      # include < 5+dli b.h>
       int main ()
        int *pH, * pH1;
        int mi;
        n=5;
        print[" Enter number og elements: "d \n", n);
        pt = (int *) malloc (n * ligeoz (int));
    pts: (int *) calloc (n, rigeoz(ind));
         if (by == NOTE | by = == NOTE) &
                printf ("memory not allo coted. in);
                 exi+(0);
          y
             print & (" memory Successfully allo coted wing
              malioc. In ");
          free (pts);
           printf ("Malloc Memory Luccesfully jud. \n");
          print (" In Memory &ucceptully allocated ming
                (alloc. \n");
           ku (pk1); a monu
           print f (" Callo c Manory Juccersfully freed . In");
       return 0;
```

```
realloc:
 # include < stdio. h>
  # include < stdlib. h>
int main () }
                                       Section paralise H.
  int * pts, i, n1, n2;
  printf ("Enter lige!");
                                       ilasine Jabaha to
   Scanf (" 1/d" , & n1);
   pts = (int *) malloc (nx * lize oz (int));
   prints ("Addresses of previously allocated memby: \n');
     for (i=0; i<n1; ++i)
       printf(". pc/n", pt +i);
      printf (" In Enter the new size!");
      Scanf (" /. d", &n2);
       pte=realloc(pts, nr * ling of (int));
        print + ("Addresser of newly allocated memory: \n");
         for (i=0; i<n2; ++i) (T. 8) ) Larry
            prints (" r. pc)n", pt. ti) it ....
        free (pts);
        returno;
                              ( whom ) defined
outfut :-
                           allocated Memory:
  Addresser of previously
   0000000000736F50c
    6000000°136F58C
    • 0000000°136F5cc
    000000000 TSEF 60 C
    Enter the new rige: 3.
              newly allocated memory:
    0000000000 736F 50C. Jungaico
0000000000 736F 54C - North
```

```
3> Stack implementation:
                                    Aletor in
#include < stdio. h >
# define SIZE 5
int stack[SIZE];
int Job = -1;
vold puh (int elements);
void pop();
 int mais () ?
       int choice, element;
     do ?
        printf ("In stack operations.is In");
       Print + ("1. push (n');
        print(("a.p.pin"); ander
        print+ ("3. Display In");
        print + ("4. Exit \n));
        print ( "Enter your choice: ');
scanf (" ".d", & choice);
       switch (choice){
              point & C' Enter the element to puch: ");
              Scan (" /.d" & element );
            push (element);
              break;
            Carez:
                 bob ();
                 break;
             Cole 3:
                 display ();
                break;
```

```
printf ("Exiting the program. \n");
          break;
      default:
          printé ("Invalid choice. please entre a valid
                 option . \n");
                                   : Whi
  golile (choice!=4);
   return 0', 1 igger :
     (1) I durch " AN" | 4 tung
neid push (int element) }
     if (top == SIZE - 1) 8. (" ) 7 by
          print f (" steck overflow! cannot push element. In');
         geln ?
             toptt;
              Stack[top] = element;
                                         this
              point (" 1. d pushed out the stack. In",
                       element);
void pope ?
       ig (top == -1) ?
              prints ("Stack underflow! Cannot pop
                    cleanent. In");
         y else &
             print+ (" " d popped : from the stack. In",
                   Stack [top]);
                   top --;
```

First of equals

```
roid display () &
          y (top==-1) ?
              print & (" Stack in empty: No thing to
                  display. In");
        Jelre ?
           print + (" E cements in the Stack: "In");
           for (int i = 0; i < = tobi it+) &
                printf(",d", stack [i]);
                             f (trainedo tui) lung
         print + ("\n"); (" = 10)
           Louis 1 coeffee : stool ? ) I have
              towards = 1 jot jabold
  - tuftus
 Stack offerations:
                 E. J. Wals
 1. push
 2. pop
 3. display
 4. Exit
                         8 (1- = gar) ju
 Enter your choice: 1.
Enter the element to pain! 34 ?!
Stack operations:
 1. push
2. pop
 3 display
 4. Exit
       your disice = 1
        the clament to push: 9 onto the stack
```

stack operation: 1. Pull 3. dieplay 4. Exit Enter your choice: 3 Elements in the stack: Hack operations: 2. pep 3 display u. Exit Enter your choir = 2 9 popped from the stack. Stack operations: 1. push 2. pop 3. Display 4. Eni+ Enter your choice: 4 Exiting the program.

1 21/12/2023