# Pakistan Shipowners' Govt. College

## *MUBASHEER*

## Roll No:

# *C-Language & Database Practical*

## 2023-24

***XII-Practical of Board of Intermediate Education Karachi***

## (دوئم) سال انٹرسال تعلیمی

## ۲۰۲۳-۲۴

| | |
|---|---|
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| **SESSION** | **2023-2024** |

# *Certificate*

***This is to certify that Mr. Mubasheer s/o Javaid Ameer Ahmed, holding Roll No. of XI class, section, has successfully completed all the requirement of this practical file for the session 2023-24.***

**Head of the Department**

***Mohsin Ahmed Khan Ghori***
***(Lecturer, Computer Science)***

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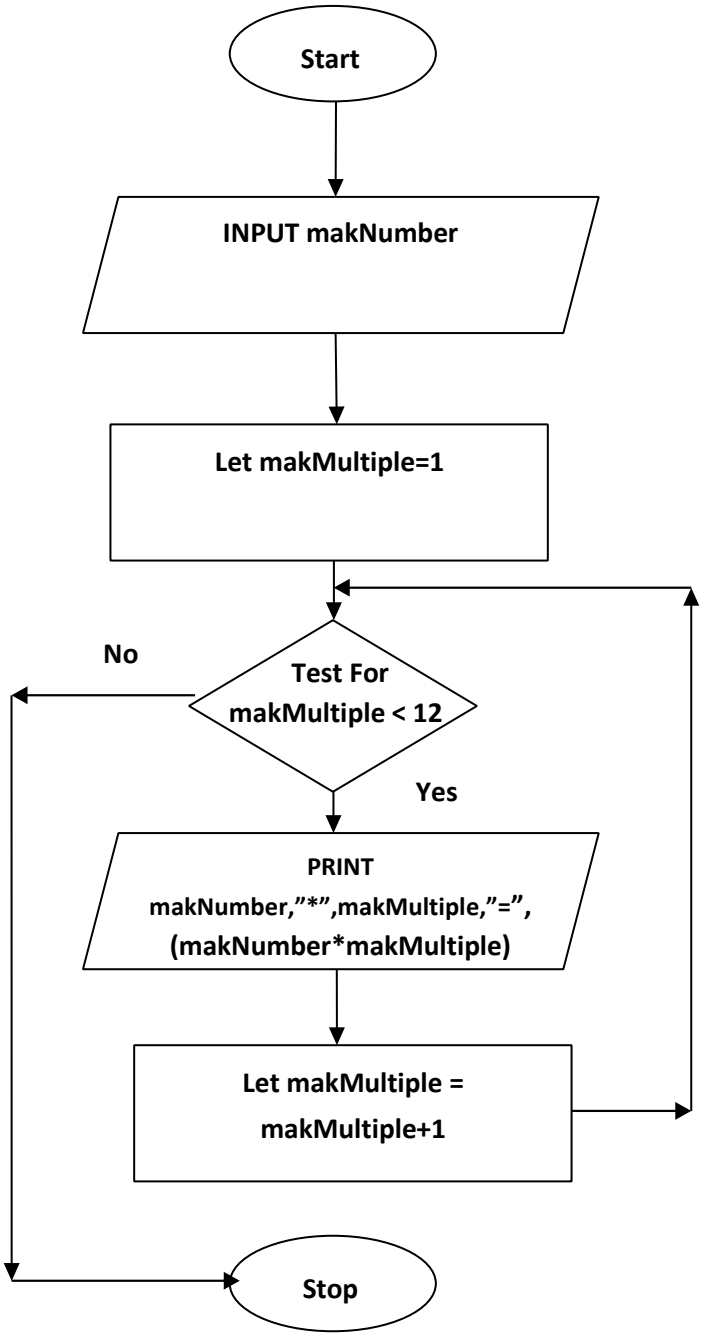
# ***Practical No.1 (Flow Chart – No of Table)***



# ***Practical No.1 (Algorithm- No of TABLE.)***

Step1: BEGIN
Step2: DECLARE makNumber,makMultiple as integer
Step3: WRITE “Enter any number to generate it’s table? "
Step4: READ makNumber
Step5: FOR makMultiple=1 TO 12 STEP 1
Step6: WRITE
makNumber,”*”,makMultiple,”=”,(makNumber*makMultiple)
Step7: NEXT makMultiple
Step8: READ character
Step9: END

# Practical No.1 (Coding/Programming)

*PRACTICAL01: Write program to generate the table of any number:*

```
#include <stdio.h>
int main() {
  int n;
printf("\n\t\t_____ ");
printf("\n\t\tThis is sample Practical No.1\n\n");
printf("Enter an integer: ");
scanf("%d", &n);

for (int i = 1; i <= 10; ++i) {
printf("%d * %d = %d \n", n, i, n * i);
}
return 0;
}
```

*OUTPUT:*

---

*This is sample Practical No.01*
*Enter any number to generate it's table? 100*

*100 * 1 = 100*

*100 * 2 = 200*

*100 * 3 = 300*

*100 * 4 = 400*

*100 * 5 = 500*

*100 * 6 = 600*

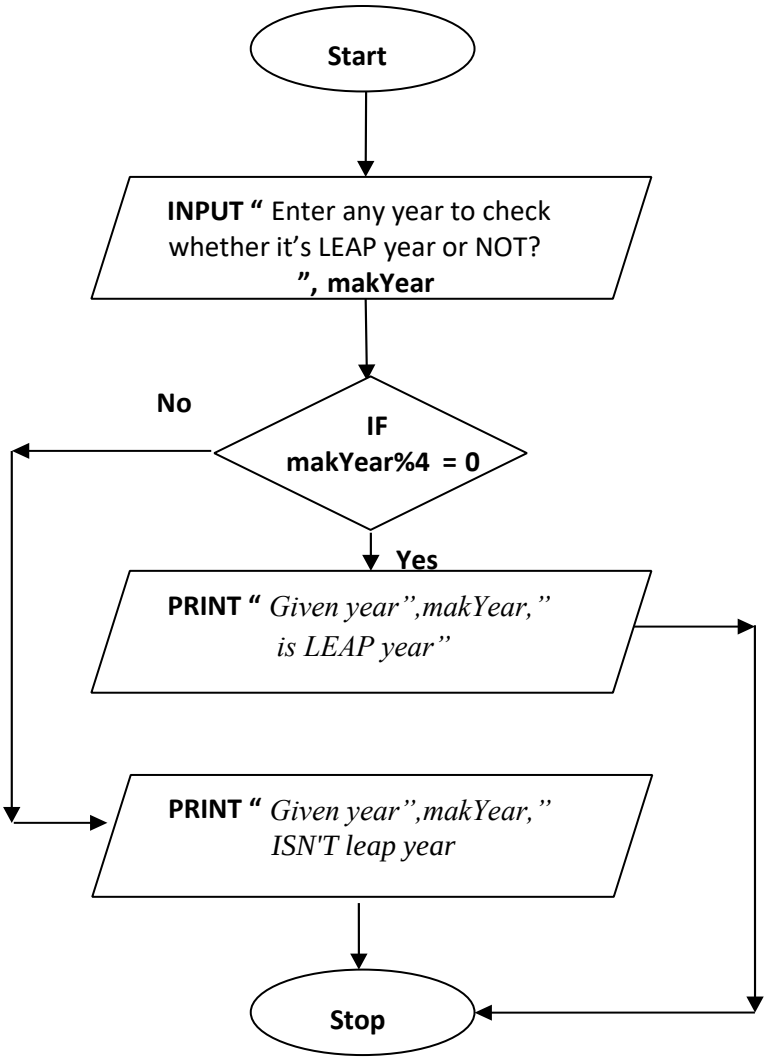
*100 * 7 = 700*

*100 * 8 = 800*

*100 * 9 = 900*

*100 * 10 = 1000*

# ***Practical No.2 (Flow Chart – Leap Year)***



# ***Practical No.2(Algorithm- LEAP YEAR.)***

Step1: BEGIN

Step2: DECLARE makYear AS integer

Step2: WRITE “Enter any year to check whether it’s LEAP year or NOT? "

Step3: READ, makYear

Step4: IF (makYear%4) = 1 THEN

WRITE “Given year “, makYear,” is LEAP year”

ELSE

WRITE “Given year”, makYear,” ISN’T leap year”

Step5: READ a character

Step6: END

# Practical No.2 (Coding/Programming)

*PRACTICAL02: Write a program that input a year and then check whether its leap year or Not:*

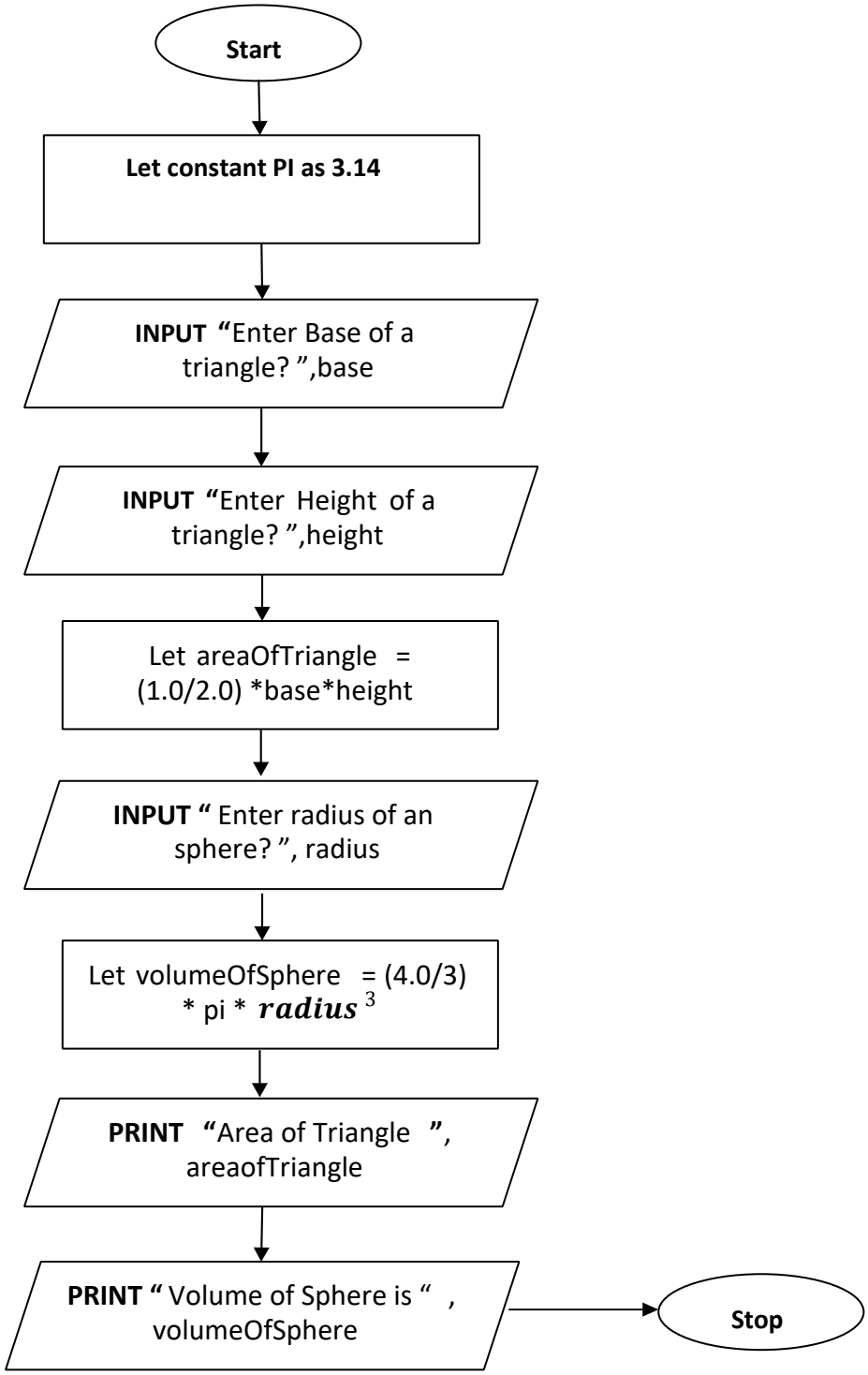
```
#include <stdio.h>
int main() {
   int year;
printf("\n\t\t_____ ");
printf("\n\t\tThis is sample Practical No.2\n\n");
printf("Enter a year: ");
scanf("%d", &year);
// leap year if perfectly divisible by 400
if (year % 400 == 0) {
printf("%d is a leap year.", year);
}
// not a leap year if divisible by 100
else if (year % 100 == 0) {
printf("%d is not a leap year.", year);
}
// leap year if not divisible by 100
// but divisible by 4
else if (year % 4 == 0) {
printf("%d is a leap year.", year);
}
// all other years are not leap years
else {
printf("%d is not a leap year.", year);
```

```
}
return 0;
}
```

*OUTPUT:*

```
This is sample Practical No.02;

Enter any year to check whether it's LEAP year or NOT? 2023

Given year 2023 ISN'T leap year
```

# ***Practical No.3 (Flow Chart - Calculating the Area and Volume)***



# ***Practical No.3 (Algorithm- Calculating the Area and Volume.)***

Step1: BEGIN
Step2: DECLARE pi AS 3.14
Step3: DECLARE areaOfTriangle, volumeOfSphere AS RealNumber
Step4: DECLARE radius,base,height AS integer
Step5: WRITE “Enter Base of a triangle? "
Step6: READ base
Step7: WRITE “Enter Height of a triangle? "
Step8: READ height
Step9: SET areaOfTriangle= (1.0/2.0)*base*height
Step10: WRITE “Enter radius of an sphere? "
Step11: READ radius
Step12: SET volumeOfSphere= (4.0/3) * pi * $\boldsymbol{radius}^3$
Step13: WRITE “ Area of Triangle[base= ]”, base, “height= “, height, “] is “, areaofTriangle
Step14: WRITE “ Volume of Sphere[radius= “, radius ,”] is “, volumeOfSphere
Step15: READ character
Step16: END

# Practical No.3(Coding/Programming)

*Practical No3: Write a program which uses arithmetic operators to calculate the area of triangle and volume of sphere. area of a triangle=(1/2)Base x Height*
*volume of sphere=(4/3 x pi x radius x radius x radius)*

```
#include <stdio.h>
#include <conio.h>
#define PI 3.142
int radius,height,base;
float areaOfTriangle,volumeOfSphere;
main()
{
printf("\n\t\t_____");

printf("\n\t\tThis is sample Practical No.3\n\n");

printf("\n\t Enter radius of sphere? ");
scanf("%d" , &radius);

printf("\n\t Enter height of triangle? ");
scanf("%d" , &height);

printf("\n\t Enter base of triangle? ");
scanf("%d" , &base);

areaOfTriangle=1.0/2*base*height;
volumeOfSphere=3.0/4*pow(radius,3)*PI;

printf("\n\t Volume of Sphere whose radius is %d = %f
",radius,volumeOfSphere);

printf("\n\t Area of triangle whose height =%d is %.2f
",height,base,areaOfTriangle);

printf("\n\t\t\t Press Enter to this program");
getch();
}
```

*OUTPUT:*

---

*This is sample Practical No.03*

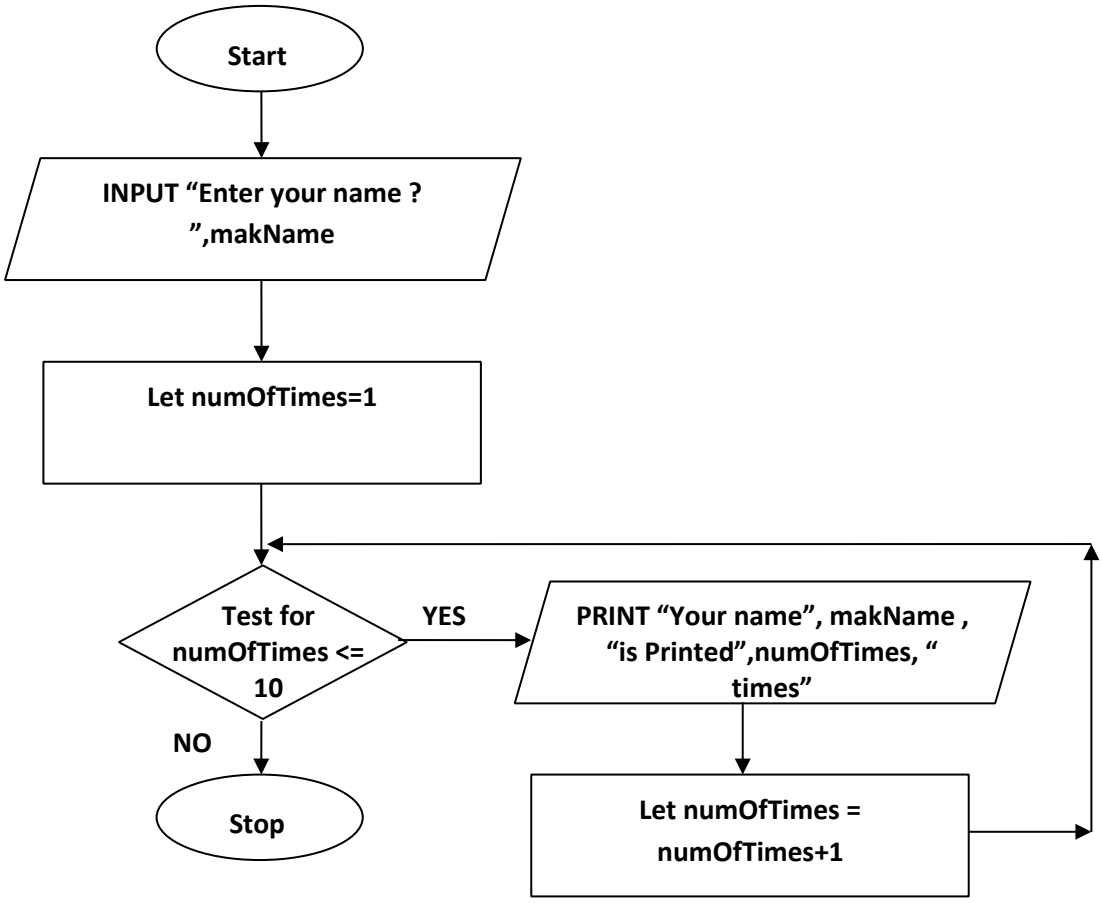
*Enter Base of a triangle? 2*

*Enter Height of a triangle? 3*
*Enter radius of an sphere? 4*

*Area of Triangle is 3.000000 with 2 base and 3 height*

*Volume of Sphere is 267.946655 with 4 radius*

# ***Practical No.4 (Flow Chart- Printing name 10 times)***



# ***Practical No.4 (Algorithm- Print name 10 times)***

Step1: BEGIN

Step2: DECLARE Dim makName(20) AS character,
numOfTimes as integer

Step3: WRITE “Enter your name ? “

Step4: READ makName

Step5: FOR numOfTimes=1 to 10

Step6: WRITE “Your Name”, makName , “ is printed“,
numOfTimes, “ times

Step7: READ character

Step8: END

# ***Practical No.4(Coding/Programming)***

*Practical No4: Write a program that finds your name 10 times:*

```
#include <stdio.h>
char makName[20];
int numOfTimes;
 main(){
printf("\n\t\t_____");
printf("\n\t\tThis is sample Practical No.4\n\n");
printf("\n\t Enter your name ? ");
  scanf("%s",makName);
  for(numOfTimes=1;numOfTimes<=10;numOfTimes++)
{
printf("\n\t Your Name %s is printed %d times " ,makName, numOfTimes);
}
```

***return 0;***

***}***

*OUTPUT:*

---

*This is sample Practical No.04*

*Enter your name? Mubashir*

*Your Name Mubashir is printed 1 times*

*Your Name Mubashir is printed 2 times*

*Your Name Mubashir is printed 3 times*

*Your Name Mubashir is printed 4 times*

*Your Name Mubashir is printed 5 times*

*Your Name Mubashir is printed 6 times*

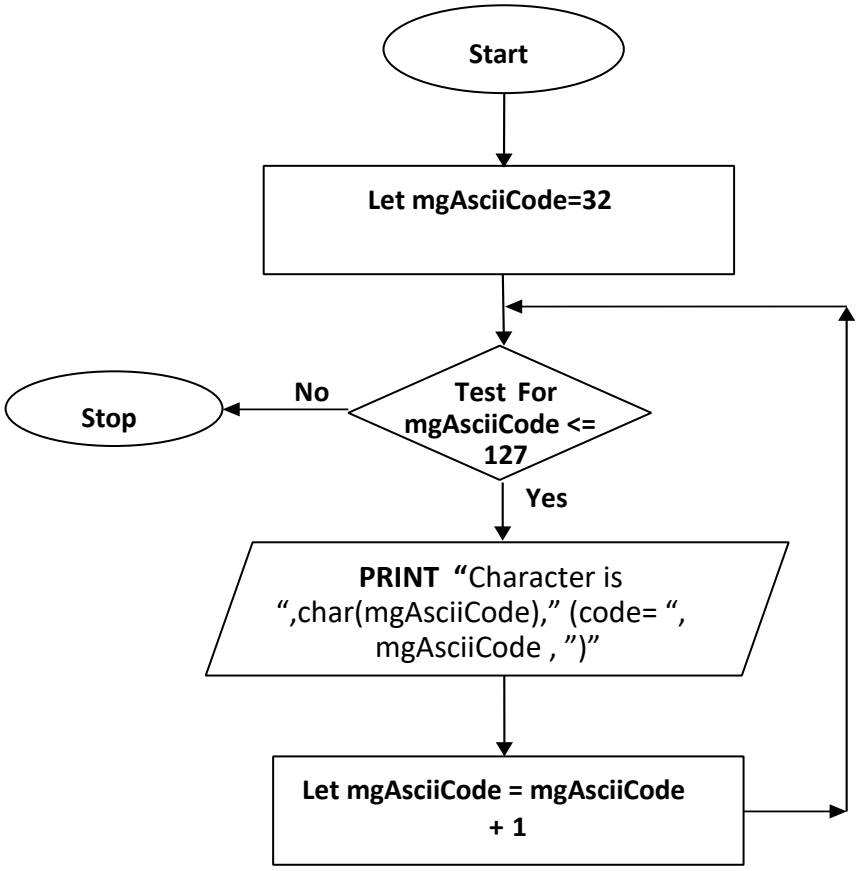
*Your Name Mubashir is printed 7 times*

*Your Name Mubashir is printed 8 times*

*Your Name Mubashir is printed 9 times*

*Your Name Mubashir is printed 10 times*

# ***Practical No.5 (Flow Chart- ASCII Code)***



# *Practical No.5 (Algorithm- ASCII Code)*

Step1: BEGIN
Step2: DECLARE mgAsciiCode AS integer
Step3: FOR mgAsciiCode=32 to 127
Step4: WRITE “Character is “,char(mgAsciiCode),” (code= “, mgAsciiCode , ”)”
Step5: READ character
Step6: END

# *Practical No.5 (Coding/Programming)*

*PRACTICAL05: Write a program that generate characters corresponding to ASCII codes from 32 to 127 (using any loop).*

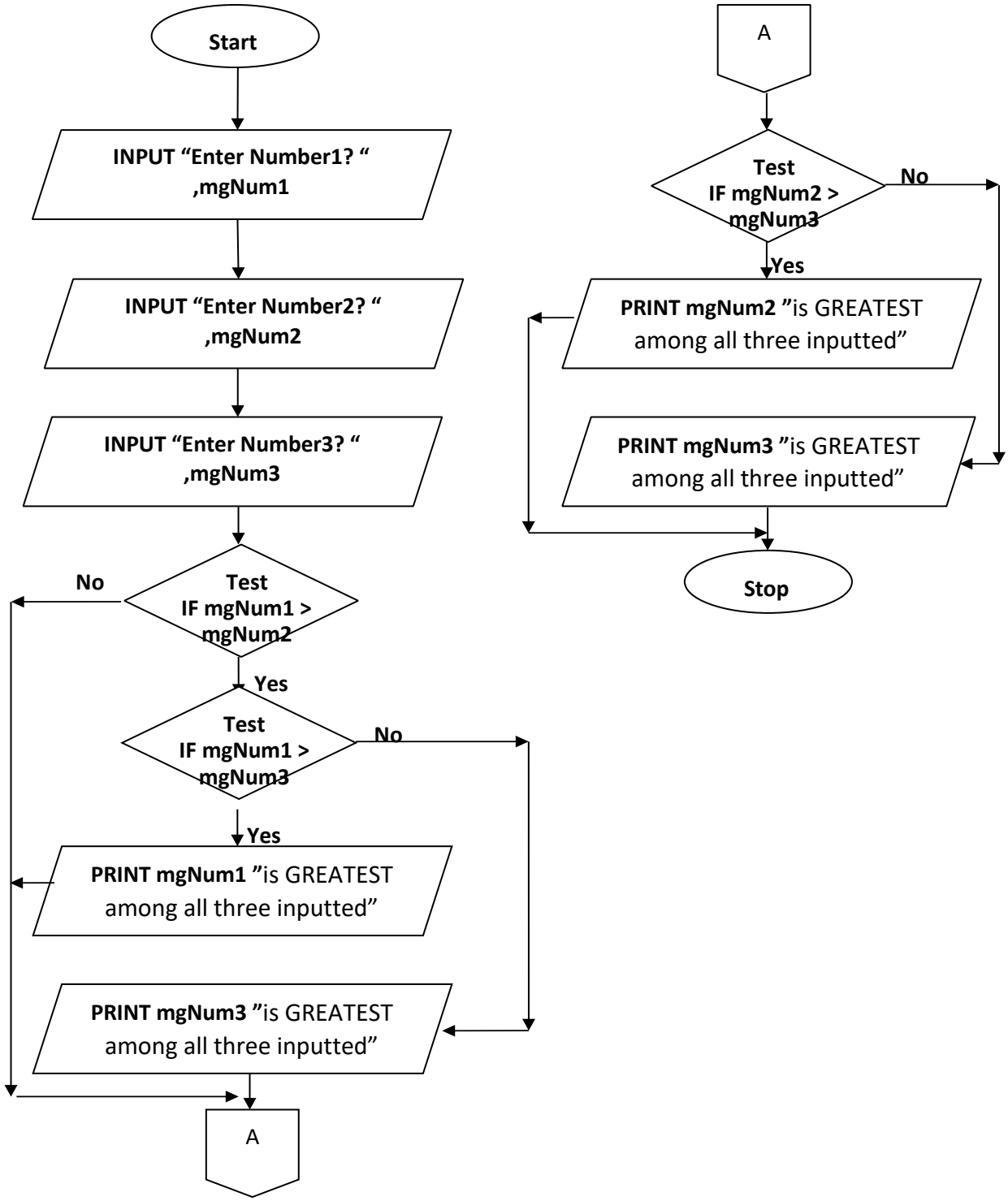
```
#include <stdio.h>
#include <conio.h>

int mgAsciiCode;
main()
{
printf("\n\t\t_____ ");

printf("\n\t\tThis is sample Practical No.5\n\n");

for(mgAsciiCode=32;mgAsciiCode<=127;mgAsciiCode++)
{
printf("\tCharacter is %c(code=%d)",mgAsciiCode,mgAsciiCode);
}
getch();
 }
```

*OUTPUT:*

*This is sample Practical No.05*

*Character is  (code=32) Character is !(code=33) Character is "(code=34)*
*Character is #(code=35) Character is $(code=36) Character is %(code=37)*
*Character is &(code=38) Character is '(code=39) Character is ((code=40)*
*Character is )(code=41) Character is *(code=42) Character is +(code=43)*
*Character is ,(code=44) Character is -(code=45) Character is .(code=46)*
*Character is /(code=47) Character is 0(code=48) Character is 1(code=49)*
*Character is 2(code=50) Character is 3(code=51) Character is 4(code=52)*
*Character is 5(code=53) Character is 6(code=54) Character is 7(code=55)*
*Character is 8(code=56) Character is 9(code=57) Character is :(code=58)*
*Character is ;(code=59) Character is <(code=60) Character is =(code=61)*
*Character is >(code=62) Character is ?(code=63) Character is @(code=64)*
*Character is A(code=65) Character is B(code=66) Character is C(code=67)*
*Character is D(code=68) Character is E(code=69) Character is F(code=70)*
*Character is G(code=71) Character is H(code=72) Character is I(code=73)*
*Character is J(code=74) Character is K(code=75) Character is L(code=76)*
*Character is M(code=77) Character is N(code=78) Character is O(code=79)*
*Character is P(code=80) Character is Q(code=81) Character is R(code=82)*
*Character is S(code=83) Character is T(code=84) Character is U(code=85)*
*Character is V(code=86) Character is W(code=87) Character is X(code=88)*
*Character is Y(code=89) Character is Z(code=90) Character is [(code=91)*
*Character is \(code=92) Character is ](code=93) Character is ^(code=94)*
*Character is _(code=95) Character is `(code=96) Character is a(code=97)*
*Character is b(code=98) Character is c(code=99) Character is d(code=100)*
*Character is e(code=101) Character is f(code=102) Character is g(code=103)*
*Character is h(code=104) Character is i(code=105  Character is j(code=106)*
*Character is k(code=107) Character is l(code=108) Character is m(code=109)*
*Character is n(code=110) Character is o(code=111) Character is p(code=112)*
*Character is q(code=113) Character is r(code=114) Character is s(code=115)*
*Character is t(code=116) Character is u(code=117) Character is v(code=118)*
*Character is w(code=119) Character is x(code=120) Character is y(code=121)*
*Character is z(code=122) Character is {(code=123) Character is |(code=124)*
*Character is }(code=125)  Character is ~(code=126) Character is ⌂(code=127)*

# ***Practical No.6 (Flow Chart- Greatest among 3 no.)***



# ***Practical No.6 (Algorithm- Greatest among 3 no.)***

Step1: BEGIN

Step 2: Initialize three integer variables as num1, num2, and num3 to store three input numbers.

Step 3; Read three integer numbers num1, num2, and num3 from the user.

Step 4: Compare num1 with num2 and num3 to find the largest of num1, num2, and num3.

4.1 – If num1 is greater than num2 and num3, then output "num1 is the largest number".

4.2 – Otherwise, compare num2 and num3 to find the largest of the two numbers.

4.3 – If num2 is greater than num3, then output " num2 is the largest number".

4.4 – Otherwise, output " num3 is the largest number".

Step 5: END.

# Practical No.6 (Coding/Programming)

*Practical No 06: Write a program that finds out the greatest number among three inputted numbers*

```
#include <stdio.h>
int main()
{
int A, B, C;
printf("\n\t\t_____");
printf("\n\t\tThis is sample Practical No.6\n\n");
printf("Enter the numbers A, B and C: ");
scanf("%d %d %d", &A, &B, &C);
// finding max using compound expressions
if (A >= B && A >= C)
printf("%d is the largest number.", A);
else if (B >= A && B >= C)
printf("%d is the largest number.", B);
else
printf("%d is the largest number.", C);
return 0;
}
```

*OUTPUT:*

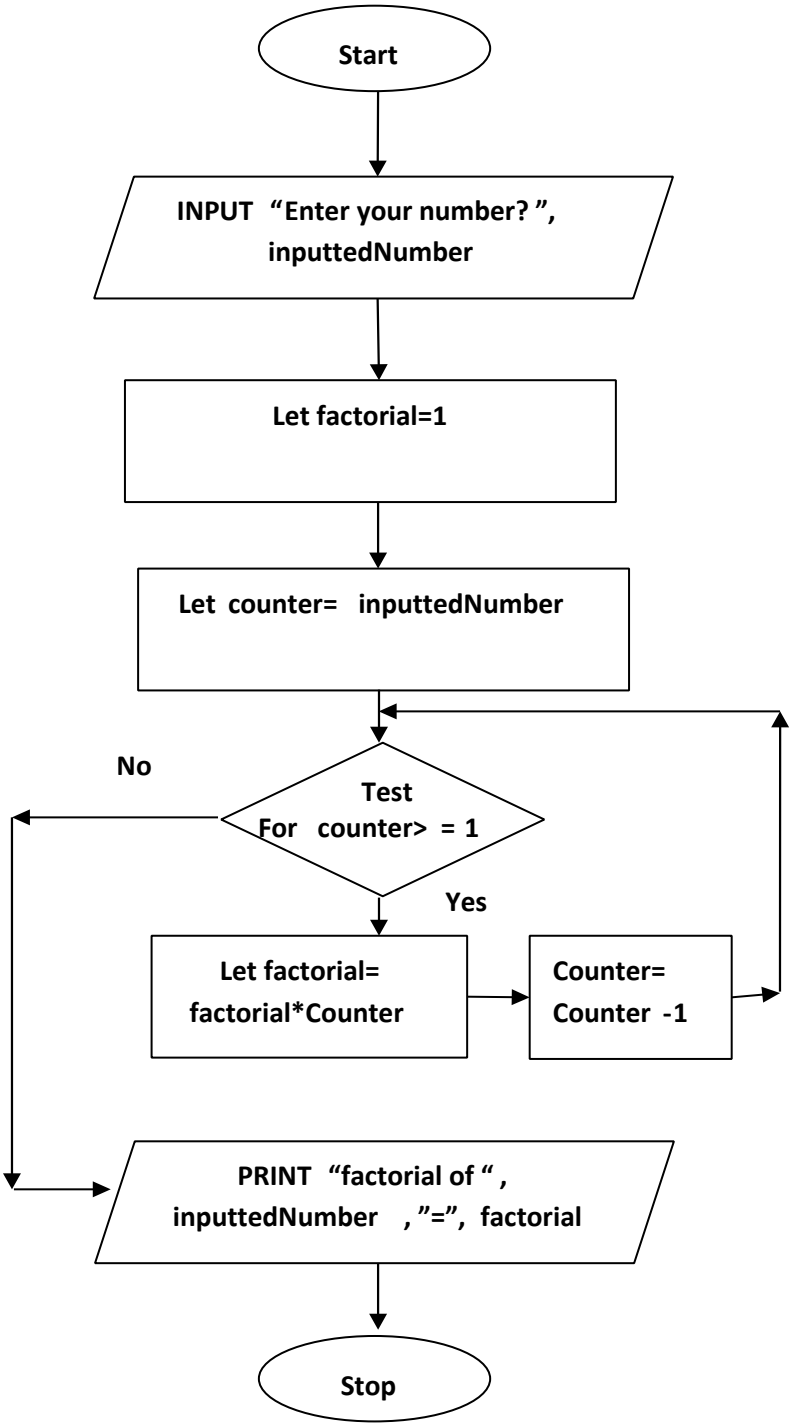
---

*This is sample Practical No.06*

*Enter the numbers A, B and C: 3 5 9*

*9 is the Greatest number*

# *No.7 (Flow Chart-Factorial of inputted No.)*



# ***No.7 (Algorithm- Factorial of inputted No.)***

Step1: BEGIN
Step2:DECLARE counter,factorial, inputtedNumber AS long integer
Step2: WRITE “Enter Number for Factorial? "
Step3: READ inputtedNumber
Step4: SET factorial=1
Step5: FOR counter= inputtedNumber down to 2 STEP=-1
Step6: SET factorial=factorial*counter
Step7: NEXT counter
Step8:WRITE “Factorial of”, inputtedNumber, “ = " ,factorial
Step9:END

# Practical No.7 (Coding/Programming)

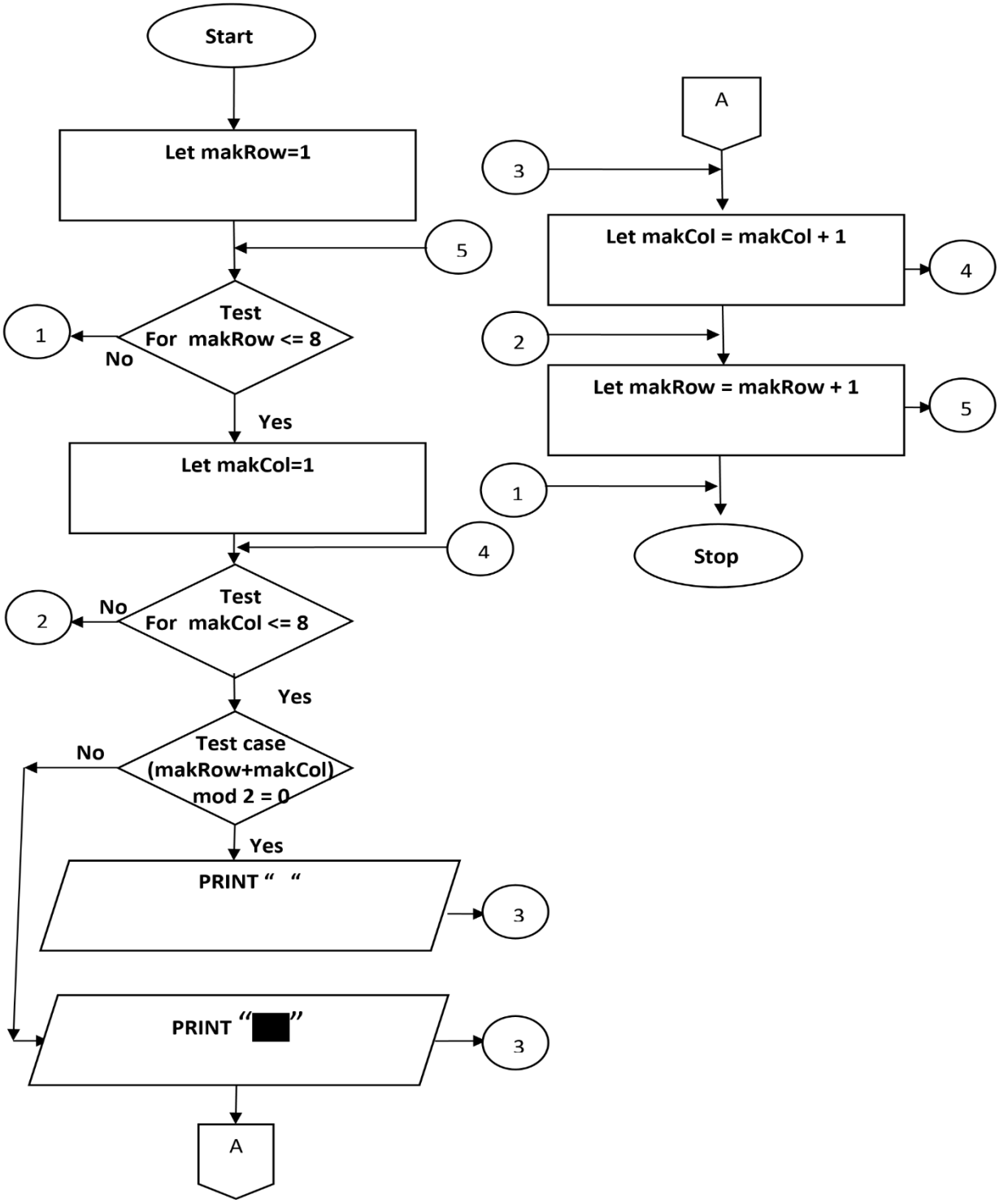
*PRACTICAL No 07: Write a program that finds the factorial of an inputted number.*

```
#include <stdio.h>
#include <string.h>

unsigned long factorial;
int multiple;

main()
 {
printf("\n\t\t_____");

printf("\n\t\tThis is sample Practical No.7\n\n");

printf("\n\t Enter any  number to find it's factorial ? ");
scanf("%lud",&factorial);
printf("\n\t you enter number %lu whose factorial is  ",
factorial);

for(multiple=factorial-1;multiple>=1;multiple--)
{
factorial*=multiple;
}
printf(" %lu ",factorial);
}
```

*OUTPUT:*

```
_____
This is sample Practical No.07

Enter any number to find it's factorial?  5

you enter number 5 whose factorial is   120
```

# *Practical No.8 (Flow Chart- Switch statement)*



# ***Practical No.8 (Algorithm- Switch Statement)***

Step1: BEGIN
Step2: DECLARE makRow,makCol,result AS integer
Step3: FOR makRow=1 TO 8 STEP=+1
Step4: WRITELINE
Step5: FOR makCol=1 TO 8 STEP=+1
Step6: SET result=(makRow+makCol) MOD 2
Step7: IF result= 0 THEN WRITE “ “ ELSE WRITE ” ■”
Step8: END IF
Step9: NEXT makCol
Step10: NEXT makRow
Step11: READ character Step12:
END

# Practical No.8 (Coding/Programming)

*PRACTICAL NO8: Write a program which uses Switch and break statement*

```
#include <stdio.h>
 int makRow,makCol,result;
main()
{
printf("\n\t\t_____ ");
printf("\n\t\tThis is sample Practical No.8\n\n");
for(makRow=1;makRow<=8;makRow++)
{
// printing line gap on screen.
printf("\n");
for(makCol=1;makCol<=8;makCol++)
{
result=(makRow+makCol)%2;
switch(result)
{
case 0:
printf("  ");
break;
default:
printf("%c%c",219,219);
// Ascii code of ▒ is 219 can also be used.
}
```

***}***

***}***

***return 0;***

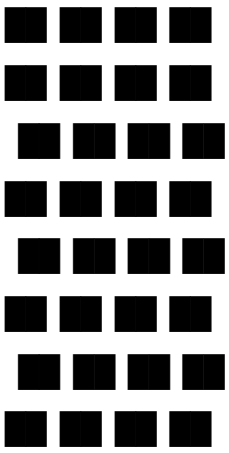
***}***

*OUTPUT:*

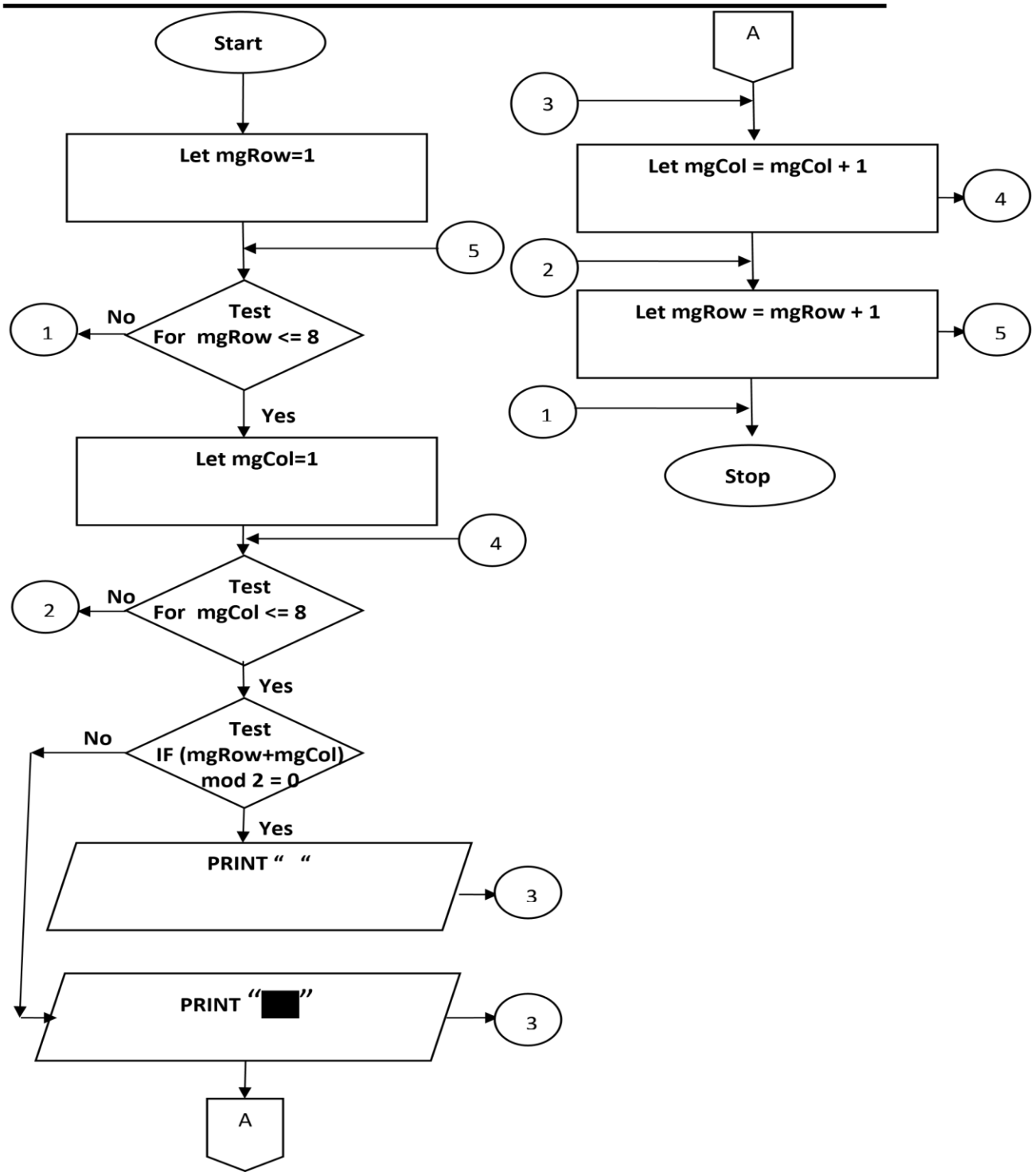
---

*This is sample Practical No.08*

.



# *No.9 (Flow Chart- Chess Board)*



# ***Practical No.9 (Algorithm- Chess Board)***

Step1: BEGIN
Step2: DECLARE mgRow,mgColumn AS integer
Step3: FOR mgRow=1 to 8 Step=1
Step4: WRITELINE
Step5: FOR mgColumn=1 to 8 Step=1
Step6: IF (mgRow+mgColumn) Mod 2= 0 THEN WRITE " " ELSE
WRITE "■■"
Step7: NEXT mgColumn
Step8: NEXT mgRow
Step9: READ character
Step10: END

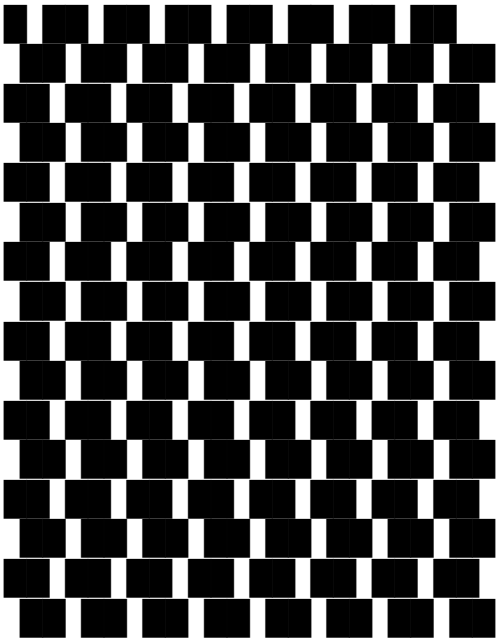
# Practical No.9 (Coding/Programming)

*PRACTICAL09: Write a program to draw a check-board using if-else statement and Nested for loops.*

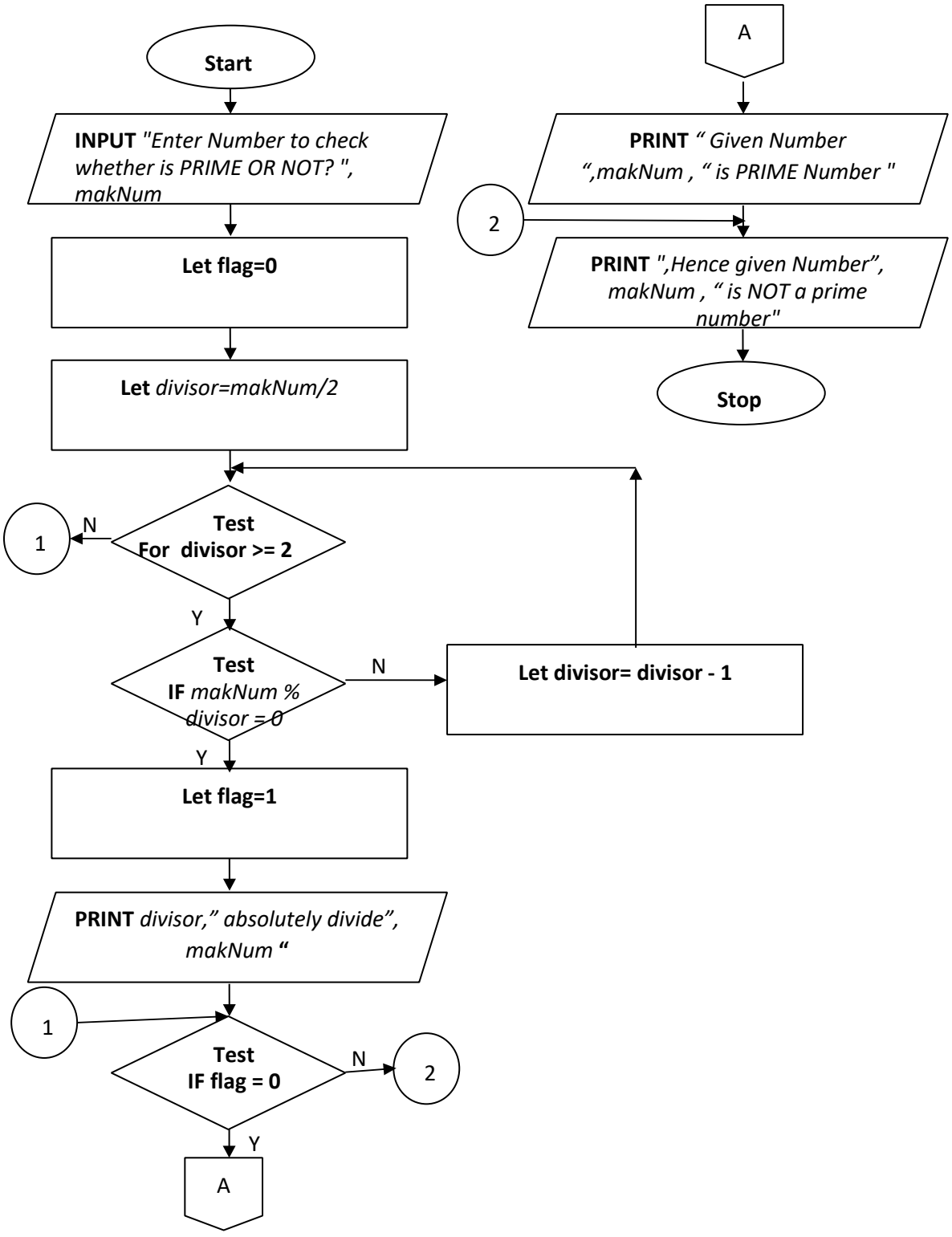
```
#include <stdio.h>
  main()
{
printf("\n\t\t_____ ");
printf("\n\t\tThis is sample Practical No.9\n\n");
   unsigned mgRow,mgColumn;
        for(mgRow=1;mgRow<=16;mgRow++)
{
         for(mgColumn=1;mgColumn<=16;mgColumn++)
{
if((mgRow+mgColumn)%2==0)
{
   printf("%c%c",219,219);
 }
else{
   printf("%c%c",32,32);
}
}
printf("\n");
}
return 0;
 }
```

*OUTPUT:*

*This is sample Practical No.09*



# *Practical No.10 (Flow Chart- Prime Number)*



# ***Practical No.10 (Algorithm- Prime Number)***

Step1: BEGIN

Step2: DECLARE makNum,flag, divisor as integer

Step3: WRITE" Enter Number to check whether is PRIME OR NOT? "

Step4: READ makNum

Step5: flag=0

Step6: FOR divisor=makNum/2 to 2 STEP= -1

Step7: IF (makNum MOD divisor)= 0 THEN

Step8: SET flag=1

Step9: WRITE divisor," absolutely divide", makNum

Step10: GOTO Step 13

Step11: END IF

Step12: NEXT divisor

Step13: IF flag=0 THEN WRITE " Given Number ",makNum , " is PRIME Number " ELSE WRITE ",Hence given Number", makNum , " is NOT a prime number"

Step14: ENDIF

Step15: END

# Practical No.10 (Coding/Programming)

*PRACTICAL10:Write a program that input a number and then check it whether it is prime or not .*

```
#include <stdio.h>
int makNum,divisor,flag;
main()
{
 printf("\n\t\t_____ ");
printf("\n\t\tThis is sample Practical No.10\n\n");

printf("\n\t Enter Number to check whether is PRIME OR NOT? ");
 scanf("%d",&makNum);
flag=0;
for(divisor=makNum/2;divisor>=2;divisor--)
{
if(makNum%divisor==0) {flag=1;printf("%d absolutely divide
%d",divisor,makNum); break;}
}

if(flag==0) printf("\n\t Given Number %d is PRIME number",makNum);
 else
printf(",Hence given Number %d is NOT a prime number",makNum);
 return 0;
}
```

*OUTPUT:*

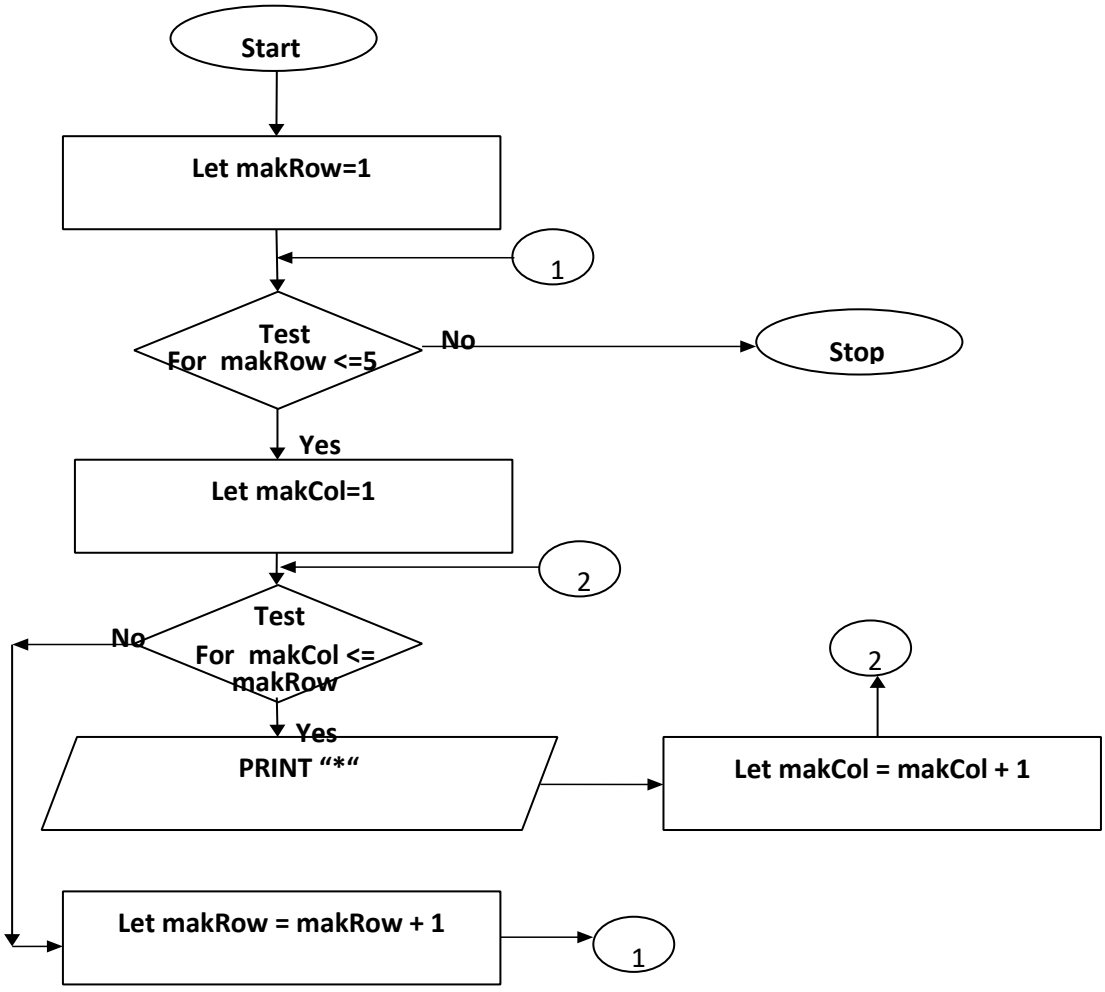
---

*This is sample Practical No.10*

*Enter Number to check whether is PRIME OR NOT? 3*

*Given Number 3 is PRIME number*

# ***Practical No.11(Flow Chart- Pattern Printing)***



# ***Practical No.11 (Algorithm- Pattern Printing)***

Step1: BEGIN
Step2: DECLARE makRow,makCol,result AS integer
Step3: FOR makRow=1 TO 5 STEP=+1
Step4: WRITELINE
Step5: FOR makCol=1 TO makRow  STEP=+1
Step6: WRITE " * "
Step7: NEXT makCol
Step8: NEXT makRow
Step9: READ character
Step10:  END

# ***Practical No.11 (Coding/Programming)***

*Practical No11: Write a program to print pattern printing:*

```
#include <stdio.h>
#include <conio.h>
int makRow,makCol;
  main()
 {
printf("\n\t\t_____ ");
printf("\n\t\tThis is sample Practical No.11");
printf("\n\n");      .

for(makRow=1;makCol<=5;makRow++)
```

```
{
printf("\n\t\t\t");
for(makCol=1;makCol<=makRow;makCol++)
{ printf(" *");
}
}
return 0;
}
```

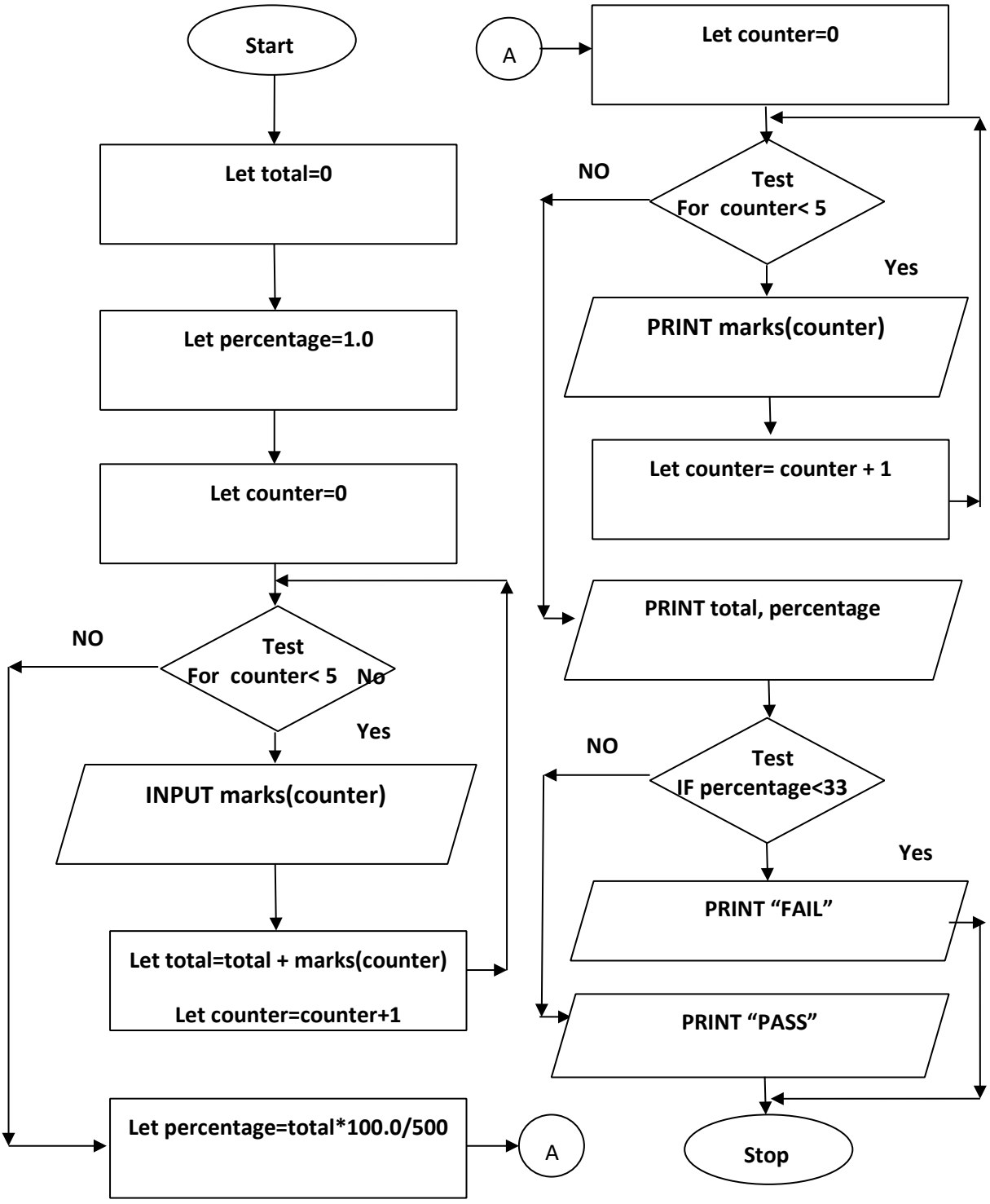
*OUTPUT:*

---

*This is sample Practical No.11*

```
*
* *
* * *
* * * *
* * * * *
```

# *Practical No.12 (Flow Chart- Marks sheet)*



# ***Practical No.12 (Algorithm- Marks sheet)***

Step1: BEGIN
Step2:DECLARE total,counter AS integer, percentage as real
Step3:DIM marks(5) as integer
Step5: Set total=0, percentage=1.0
Step6: FOR counter=0 to 4 STEP 1
Step7:WRITE “Enter Subject[“,(counter+1),”] marks? “
Step8: READ marks[counter]
Step9: SET total= total + marks[counter]
Step10: NEXT counter
Step11: SET percentage = total * 100.0/500
Step12: FOR counter=0 to 4 STEP 1
Step13:WRITE “ Subject[“, (counter+1), ”= “ ,marks[counter]
Step14: NEXT counter
Step15: WRITE “ Total= “,total, “out of 500”
Step16:WRITE “ Percentage= “,percentage
Step17: IF percentage<33 THEN WRITE “FAIL” ELSE WRITE “PASS”
Step18:READ character
Step19:END

# Practical No.12 (Coding/Programming)

*PRACTICAL12: Write a program that read marks of 5 subjects, calculate the total marks, percentage & state whether candidate is Pass or Fail.*

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
int marks[6],marksObtained=0,counter;
char grade[5],remarks[20];
float percentage(int);
const grandTotal=600;
main()
{
float percent=1.0;
printf("\n\t\t_____ ");
printf("\n\t\tThis is sample Practical No.12\n\n");
printf(" Enter Marks of Student below");

for(counter=0;counter<6;counter++)
{
printf("\n\t Enter student subject[%d] marks? ",counter+1);
scanf("%d",&marks[counter]);

marksObtained=marksObtained+marks[counter];
}
percent=percentage(marksObtained);
printf("Showing the Prepared Marks sheet of Student");

for(counter=0;counter<6;counter++)
{
printf("\n\tStudent subject[%d] marks = %d",counter+1,marks[counter]);
```

```
}
printf("\n\tStudent Marks of all subjects= %d",marksObtained);
printf("\n\tStudent Percentage= %.2f",percent);

if(percent<33)
{
strcpy(grade,"FAIL");strcpy(remarks,"Very BAD");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);
}
else if(percent>=33 && percent<40)
{
strcpy(grade,"E");strcpy(remarks,"BAD");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);

}
else if(percent>=40 && percent<50)
{
strcpy(grade,"D");strcpy(remarks,"Unsatisfactory");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);
}
else if(percent>=50 && percent<60)
{
strcpy(grade,"C");strcpy(remarks,"Just Satisfactory");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);

}
else if(percent>=60 && percent<70)
{
strcpy(grade,"B");strcpy(remarks,"Good");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);
}
else if(percent>=70 && percent<80)
```

```
{
strcpy(grade,"A");strcpy(remarks,"Very Good");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);
}
else if(percent>=80 && percent<=100)
{
strcpy(grade,"A+");strcpy(remarks,"EXCELLENT");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);
}
else
{
strcpy(grade,"X");strcpy(remarks,"Result With held");
printf("\n Grade is %s, \n\t Remarks are %s",grade,remarks);
}
}
float percentage(int a);
{
        return (a*100.0/grandTotal)
}
```

*OUTPUT:*

---

*This is sample Practical No.12*

*Enter Marks of Student below*

*Enter student subject[1] marks? 90*

*Enter student subject[2] marks? 80*

*Enter student subject[3] marks? 88*

*Enter student subject[4] marks? 95*

*Enter student subject[5] marks? 65*

*Enter student subject[6] marks? 76*

*Showing the Prepared Marks sheet of Student*

*Student subject[1] marks = 90*

*Student subject[2] marks = 80*

*Student subject[3] marks = 88*

*Student subject[4] marks = 95*

*Student subject[5] marks = 65*

*Student subject[6] marks = 76*

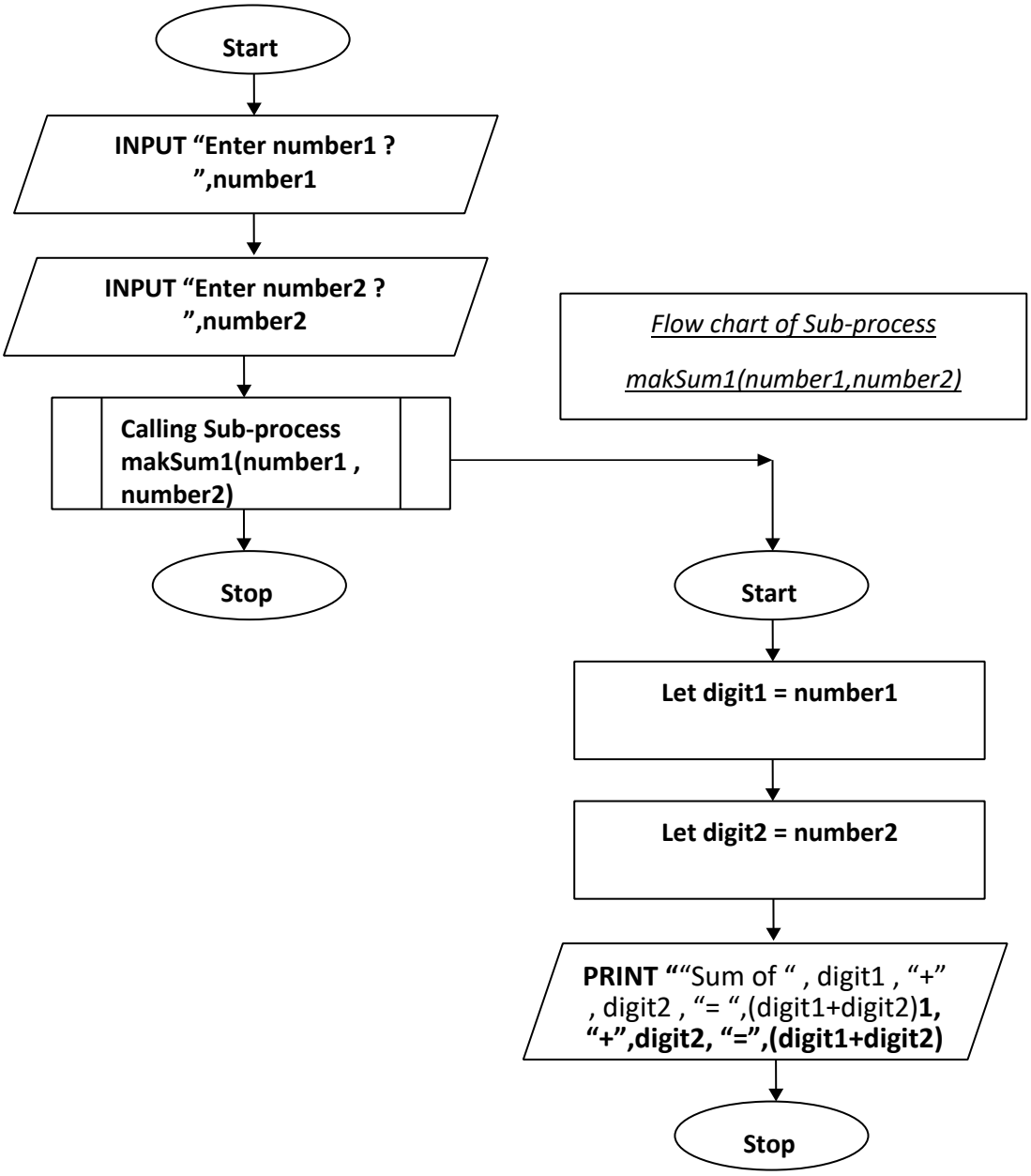
*Student Marks of all subjects= 494*

*Student Percentage= 82.33*

*Grade is A+,*

*Remarks are EXCELLENT*

# ***Practical No.13(Flow Chart- User defined Function For Addition)***



# ***Practical No.13 (Algorithm- User defined Function For Addition)***

Step1: BEGIN
Step2: DECLARE makSum1(integer,integer) AS integer
Step3: DECLARE number1,number2 AS integer
Step4: WRITE “Enter Number1 ?”
Step5: READ number1
Step6: WRITE “Enter Number2 ?”
Step7: READ number2
Step8: *Call makSum1(number1,number2)*
Step9: READ character
Step10: END

Step11: BEGIN makSum1(digit1 AS integer,digit2 AS integer)
Step12: WRITE “Sum of “ , digit1 , “+” , digit2 , “= “,(digit1+digit2)
Step13: END makSum1

# Practical No.13(Coding/Programming)

*PRACTICAL13: Write a program that input any two number and then pass these numbers as arguments to function sum1 and then print their sum.*

```
#include <stdio.h>
int addNumbers(int a, int b);
int main()
{
printf("\n\t\t_____");
printf("\n\t\tThis is sample Practical No.13\n\n");
int number1,number2,sum;
printf("Enters Number1: ");
scanf("%d",&number1);
printf("Enters Number2: ");
scanf("%d",&number2);
sum = addNumbers(number1, number2);
printf("sum is = %d",sum);
return 0;
}
int addNumbers(int a, int b)
{
int result;
result = a+b;
return result;
```

*OUTPUT:*

---

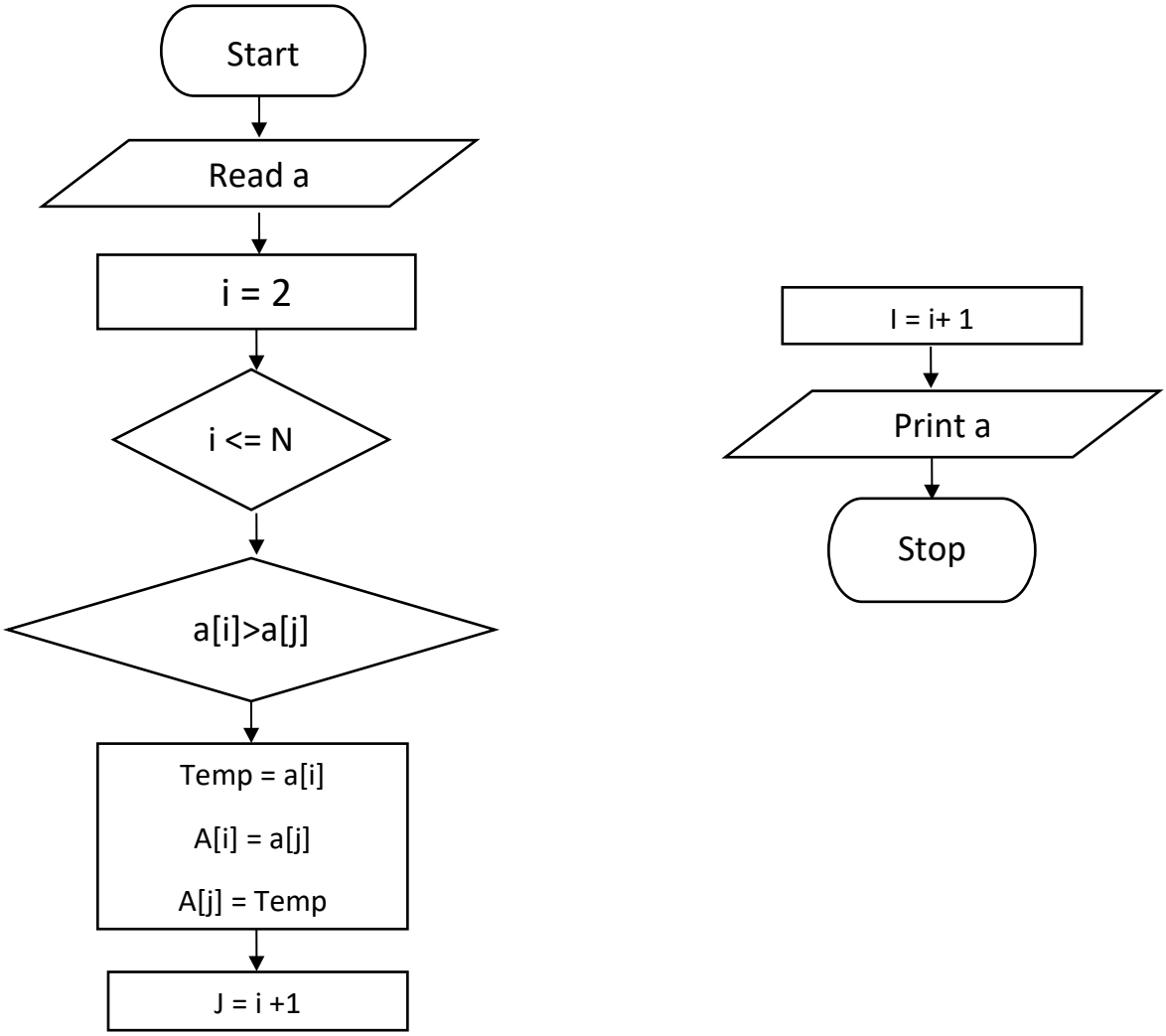
*This is sample Practical No.13*

***Enters Number1: 2***

***Enters two Number2: 7***

***Sum is = 9***

# ***Practical No.14 (Flow Chart- Sorting No with Array in ASCENDING & DECENDING Order)***



# ***Practical No.14 (Algorithm- Sorting Number with Array in ASCENDING & DECENDING Order)***

Step:1 BEGIN

Step:2 INITIALIZE arr[] ={5, 2, 8, 7, 1 }.

Step:3 SET temp =0

Step:4 length= sizeof(arr)/sizeof(arr[0])

Step:5 PRINT "Elements of Original Array"

Step:6 SET i=0. REPEAT STEP 7 and STEP 8 UNTIL i<length

Step:7 PRINT arr[i]

Step:8 i=i+1.

Step:9 SET i=0. REPEAT STEP 10 to STEP UNTIL i<n

Step:10 SET j=i+1. REPEAT STEP 11 UNTIL jarr[j]) then
temp = arr[i]
arr[i]=arr[j]
arr[j]=temp

Step:11 j=j+1.

Step:12 i=i+1.

Step:13 PRINT new line

Step:14 PRINT "Elements of the array sorted in ascending order"

Step:15 SET i=0. REPEAT the below steps UNTIL i < length

Step:16 PRINT arr[i]

Step:17 i=i+1.

Step:18 PRINT "Elements of the array sorted in decending order"

Step:19 SET i=0. REPEAT the below steps UNTIL i > length

Step:20 PRINT arr[i]

Step:21 i=i+1.

Step:22 RETURN 0.

Step:23 END.

# Practical No.14(Coding/Programming)

## For Ascending Order:

```
#include <stdio.h>
int main()
{
int a[5],i,j,temp;
printf("\n\t\t_____");
printf("\n\t\tThis is sample Practical No.14\n\n");
printf("Enter the numbers \n");
for (i = 0; i < 5; i++)
{
scanf("%d", &a[i]);
}
for (i = 0; i < 5; i++)
{
for (j = i + 1; j < 5; j++)
{
if (a[i] > a[j])
{
temp =  a[i];
a[i] = a[j];
a[j] = temp;
}
```

```
}
}
printf("The numbers arranged in ascending order are given below \n");
for (i = 0; i < 5; i++)
{
printf("%d\n", a[i]);
}
return 0;
}
```

## For Decending Order:

```
#include <stdio.h>
int main()
{
int a[5],i,j,temp;
printf("Enter the numbers \n");
for (i = 0; i < 5; i++)
{
scanf("%d", &a[i]);
}
for (i = 0; i < 5; i++)
{
for (j = i + 1; j < 5; j++)
{
```

```
if (a[i] < a[j])
{
temp =  a[i];
a[i] = a[j];
a[j] = temp;
}
}
}
printf("The numbers arranged in Decending order are given below \n");
for (i = 0; i < 5; i++)
{
printf("%d\n", a[i]);
}
return 0;
}
```

*OUTPUT:*

---

```
This is sample Practical No.14
Enter the numbers
10 8 6 4 2
The numbers arranged in ascending order are given below
2
4
6
```

***8***

***10***

---

***This is sample Practical No.14***

***Enter the numbers***

***1 3 5 7 9***

***The numbers arranged in Decending order are given below***

***9***

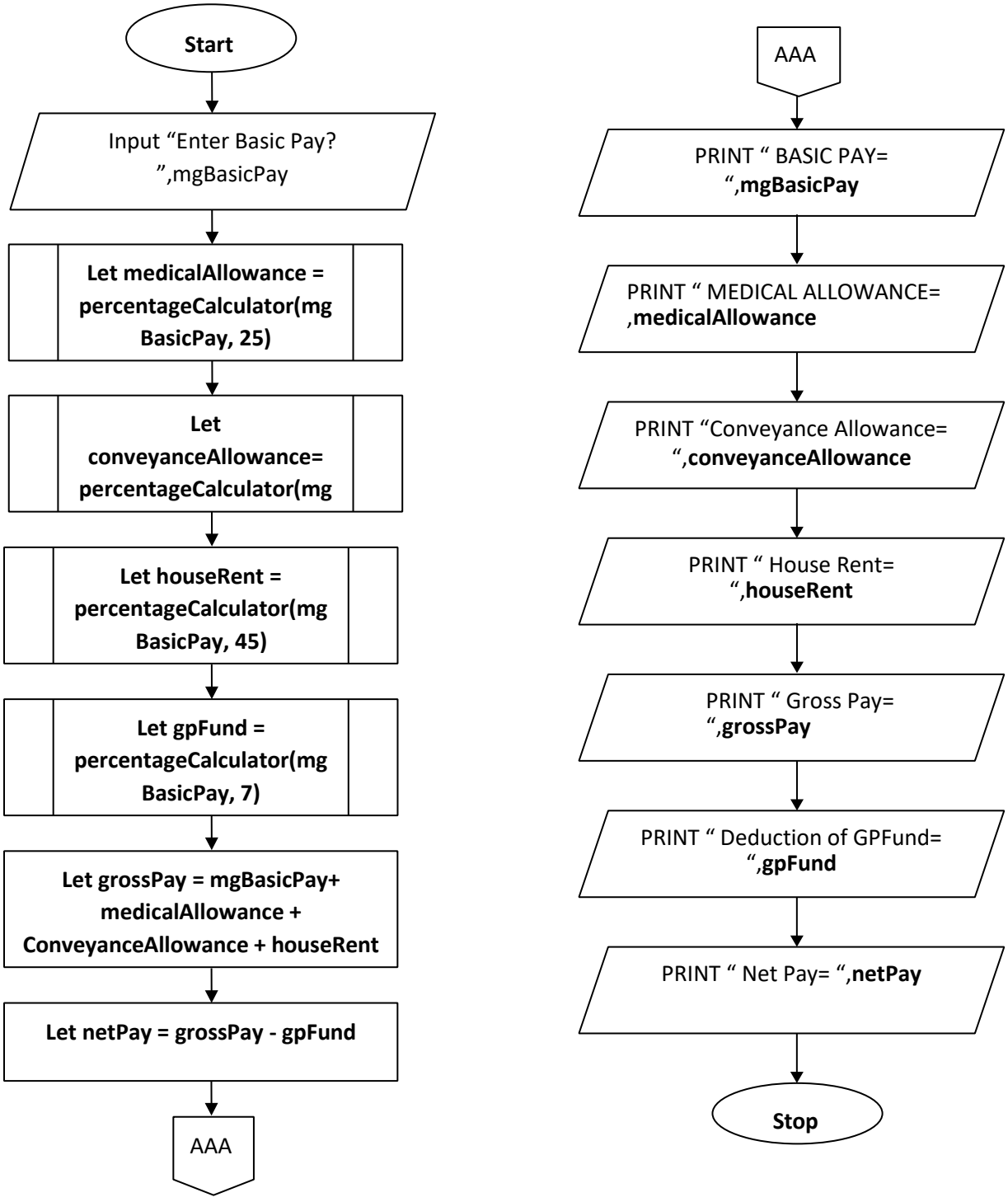
***7***

***5***

***3***

***1***

# ***Practical No.15 (Flow Chart- Payroll of Employee)***



# ***Practical No.15 (Algorithm- Payroll of Employee)***

Step1: BEGIN

Step2: DECLARE percentageCalculator(Realnumber, integer) AS Real Number

Step3: DECLARE mgBasicPay, medicalAllowance, conveyanceAllowance, houseRent, gpFund, grossPay, netPay AS Real Number

Step4: WRITE “Enter Basic Pay? “

Step5: READ mgBasicPay

Step6: SET medicalAllowance=CALL percentageCalculator(mgBasicPay,25)

Step7: SET conveyanceAllowance = CALL percentageCalculator(mgBasicPay,20)

Step8: SET houseRent = CALL percentageCalculator(mgBasicPay,45)

Step9: SET gpFund = CALL percentageCalculator(mgBasicPay,7)

Step10: SET grossPay= mgBasicPay + medicalAllowance + conveyanceAllowance + houseRent

Step11: SET netPay= grossPay-gpFund

Step12: WRITE “ BASIC PAY= “,mgBasicPay

Step13: WRITE “ MEDICAL ALLOWANCE= “,medicalAllowance

Step14: WRITE “ Conveyance Allowance= “,conveyanceAllowance

Step15: WRITE " House Rent= ",houseRent
Step16: WRITE " Gross Pay= ",grossPay
Step17: WRITE " Deduction of GPFund= ",gpFund
Step18: WRITE " Net Pay= ",netPay
Step19: READ character
Step20: END
Step21: BEGIN FUNCTION percentageCalculator(amount AS Real Number,percent AS integer)
Step22: RETURN (amount*percent/100.0)
Step23: END FUNCTION percentageCalculator

# ***Practical No.15 (Coding/Programming)***

*PRACTICAL15: Write a program to calculate a pay roll of employees Read the Basic pay from key board Calculate medical allowance as 25% of basic pay, conveyance allowance as 20% and house rent 45 % of basic pay and deduction of GP fund 7% of basic pay. Calculate gross pay and net pay.*

```
#include <stdio.h>
float percentageCalculator(float,int);
float mgBasicPay,medicalAllowance,conveyanceAllowance,
houseRent,gpFund
,grossPay,netPay;
 main()
 {
printf("\n\t\t_____");
printf("\n\t\tThis is sample Practical No.15");
```

```
 printf("\n\n");
printf("\n\t Enter Basic Pay ? ");
scanf("%f",&mgBasicPay);

medicalAllowance=percentageCalculator(mgBasicPay,25);
conveyanceAllowance=percentageCalculator(mgBasicPay,20);
houseRent=percentageCalculator(mgBasicPay,45);
gpFund=percentageCalculator(mgBasicPay,7);

grossPay=mgBasicPay+medicalAllowance+conveyanceAllowance+houseRent;
netPay=grossPay-gpFund;
printf("\n\t BASIC PAY= %.2f",mgBasicPay);
printf("\n\t MEDICAL ALLOWANCE= %.2f",medicalAllowance);
printf("\n\t Conveyance Allowance= %.2f",conveyanceAllowance);
printf("\n\t House Rent= %.2f",houseRent);

printf("\n\t Gross Pay= %.2f",grossPay); printf("\n\t Deduction of GPFund=
%.2f",gpFund);
printf("\n\t Net Pay= %.2f",netPay);
getch();
}
float percentageCalculator(float amount,int percent)
{
return (amount*percent/100.0);
}
```

*OUTPUT:*

---

This is sample Practical No.15

Enter Basic Pay? **50000**

BASIC PAY= **50000.00**

MEDICAL ALLOWANCE= **12500.00**

Conveyance Allowance= **10000.00**

House Rent= **22500.00**

Gross Pay= **95000.00**

Deduction of GPFund= **3500.00**

Net Pay= **91500.00**

# ***Part-2***

# ***Database***

# ***Practical***

# *Practical No.16*

**Object** Write a procedure to create a table Teacher having the following fields

**FacultyId, TeacherName, Designation, Department.**

**Queries**

1. Assign primary key to a suitable column.
2. Input 5 records
3. Display All records having same department
4. List all the record with designation lecturer.

# Procedure

## Switching on Computer

1- Switch on your computer. Wait till the operation system **"Windows"** let you give access to interact with the computer.

## Searching and Opening MS-Access

2-With the help of mouse click **"Start"** Icon, generally present at bottom left side of the computer screen-

3-Use Mouse click **"Search Bar"**, type **"Microsoft Office Access"** in it with the help of computer keyboard to search and open **MS-Access**.

## Creating Database

4-Point Mouse Cursor to Blank Database, it will be highlighted then click it with mouse.

5- New panel at right hand side will be open, point your mouse cursor to the file name location, type new name **"TeacherDatabase"** there then click **"Create"** button.

## Creating & Renaming Table

6-Another big new panel at right hand side will be open, point your mouse cursor to **"Table1: Table"** icon, it will be highlighted then right click it, with the mouse. A **"drop-down menu"** will be open, click second option **"Design View"** from it.

7- Now **"Save As"** panel will be open, give new name **"Teacher"** in the text box to Save **"Table1"** as **"Teacher"**, then press **"ok"** Button.

8-Type in the **"Field Name"** text value **"FacultyID"**.

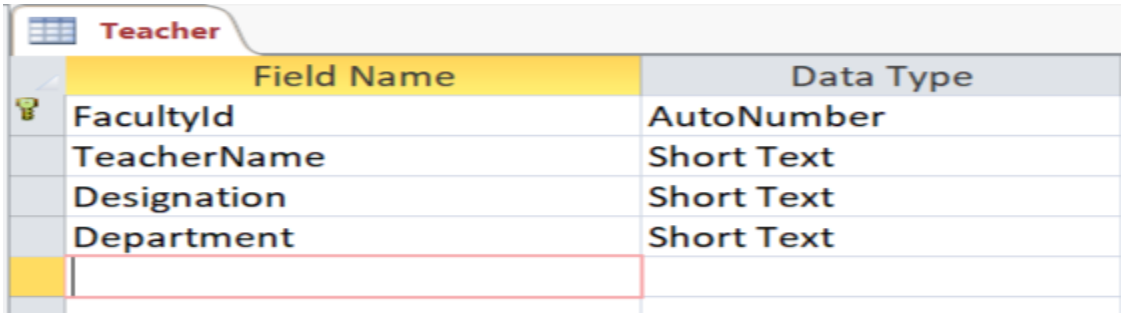
9- Use mouse to point the cell below **"Data Type"**, select there **"Auto Number"** from the available **"combo box"** option list.
10- Use mouse to point the next cell present under **"Description"** heading, type the description whatever you want to write for your future reference or let it remain empty.

11- Repeat above steps till all the remaining **fields (TeacherName, Designation, Department) with "data types" and "description"** are properly typed into the corresponding cell of Database Design Window. Always use **"Text"** data type for fields like [Name, Address, Contact, Email etc.], **"AutoNumber"** for automatic assignment of numbers. **"Numeric"** for fields on which calculation are performed, **"Currency"** for fields like [wages, salary], **"Date"** for fields which are supposed to store dates, **"Hyperlink"** for fields holding [websites / urls etc.], **"OLE Object"** for picture, photographs, **"Yes/No"** for status showing field, **"Attachment"** for external files, **"Memo"** for descriptive fields."**Lookup Wizard"** for foreign fields from other tables of the database.

12-

## Requirement#1- Assigning Primary Key

to the suitable field i.e **"FacultyId"** which can be capable of identifying each record uniquely. If it is already assigned by computer then no need to re-assign it.




13-Save the Table once again to update changes.

## Requirement#2- Entering Five (5) Records

14-Now double click **"Teacher"** table to open it. Enter valid data into it. Use mouse to toggle b/w the fields of each record. Continue adding the record until you complete entering desired records. After it, close & finish record entry.

Teacher

| FacultyId | TeacherNam | Designation | Department |
|---|---|---|---|
| 1 | Mubashir | Lecturer | Computer |
| 2 | Rayyan | Assistant Profofesor | Mathematics |
| 3 | Shehroz | Lecturer | Physics |
| 4 | haseeb | Lecturer | Computer |
| 5 | Hammad | Assistant Professor | Computer |
| 6 | hassan | Assistant Professor | Computer |

## Queries Design

15-With the help of mouse click **"Create"**, then point and left click **"Query Design"**.

17- **"Show table"** panel will be open, select **" Table"** tab from **"Table/Query/Both"**. Point and double left click the desired tables from available list of tables, to add these tables then left click **"cross/close"** present on top-right hand side of the panel, to close it.

18- Select field name from the available list of "combo-box", which you want to display or manipulate. Table name of that particular field will automatically be added after your selection of field. Mention the criteria if you want. Uncheck the "CheckBox" if you don't want to display this field.

19- Do repeat above step number 19 for each and every field, you want more to display or manipulate until you complete all desired field entries

20- Now in the **"criteria"** cell of field **"Department"** enter the contents **"Computer Science"** to create the query of "all records having same department" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"TeacherQuery1"**, again left click **"Ok"** Button. You can save query with your desired name as well.

21- Repeat from above step number 17 to 21 for creating remaining queries, just remove the contents of criteria cell, as per your requirement i.e. remove the contents of field "Department" and enter the contents **"Lecturer"** in the criteria cell of **"Designation"** field, to "list all the records with designation (Lecturer)".

## Obtaining Query Results

22-Double click any query to display its result, if there is a need of passing any value then just type-in the value you want to pass into the panel that appears before you.

# OUTPUT

## Requirement#3. Teachers of same Department.

Teacher | Teacher Query

| TeacherNam | Department | FacultyId | Designation |
|---|---|---|---|
| Mubashir | Computer | 1 | Lecturer |
| hassan | Computer | 6 | Assistant Professor |
| Hammad | Computer | 5 | Assistant Professor |
| * | Computer | (New) | Lecturer |

## Requirement#4. Teachers of same Designation.

Teacher | Teacher Query1

| FacultyId | TeacherNam | Designation | Department |
|---|---|---|---|
| 1 | Mubashir | Lecturer | Computer |
| 3 | Shehroz | Lecturer | Physics |
| 4 | haseeb | Lecturer | Physics |

# Practical No.17

**Object** Write a procedure to create a table Student having the following fields

**StudentId, StudentName, Address, Cellno**

**Queries**

1. Assign primary key to a suitable column.
2.Input 5 records
3. Dispay all records
4. Search record with StudentID.

# Procedure

## Switching on Computer

1- Switch on your computer. Wait till the operation system **"Windows"** let you give access to interact with the computer.

## Searching and Opening MS-Access

2-With the help of mouse click **"Start"** Icon, generally present at bottom left side of the computer screen-

3-Use Mouse click **"Search Bar"**, type **"Microsoft Office Access"** in it with the help of computer keyboard to search and open **MS-Access**.

## Creating Database

4-Point Mouse Cursor to Blank Database, it will be highlighted then click it with mouse.

5- New panel at right hand side will be open, point your mouse cursor to the file name location, type new name **"StudentDatabase"** there then click **"Create"** button.

## Creating & Renaming Table

6-Another big new panel at right hand side will be open, point your mouse cursor to **"Table1: Table"** icon, it will be highlighted then right click it, with the mouse. A **"drop-down menu"** will be open, click second option **"Design View"** from it.

7- Now **"Save As"** panel will be open give new name **"Student"** in the text box to Save **"Table1"** as **"Student"**, then press **"ok"** Button.

8-Type in the **"Field Name"** text value **"StudentId"**.

9- Use mouse to point the cell below **"Data Type"**, select there **"Auto Number"** from the available **"combo box"** option list.

10- Use mouse to point the next cell present under **"Description"** heading, type the description whatever you want to write for your future reference or let it remain empty.

11- Repeat above steps till all the remaining **fields (StudentName, Address, Cellno) with "data types" and "description"** are properly typed into the corresponding cell of Database Design Window. Always use **"Text"** data type for fields like [Name, Address, Contact, Email etc.], **"AutoNumber"** for automatic assignment of numbers. **"Numeric"** for fields on which calculation are performed, **"Currency"** for fields like [wages, salary], **"Date"** for fields which are supposed to store dates, **"Hyperlink"** for fields holding [websites / urls etc.], **"OLE Object"** for picture, photographs, **"Yes/No"** for status showing field, **"Attachment"** for external files, **"Memo"** for descriptive fields.**"Lookup Wizard"** for foreign fields from other tables of the database.

12-

## Requirement#1- Assigning Primary Key

to the suitable field i.e **"StudentId"** which can be capable of identifying each record uniquely. If it is already assigned by computer then no need to re-assign it.

Student

| Field Name | Data Type | |
|---|---|---|
| StudentId | AutoNumber | Primary Key/field |
| StudentName | Short Text | Name of Student |
| Address | Short Text | Address of Student |
| CellNo | Number | phone Number |
| | | |
| | | |

13-Save the Table once again to update changes.

## Requirement#2- Entering Five (5) Records

14-Now double click **"Student"** table to open it. Enter valid data into it. Use mouse to toggle b/w the fields of each record. Continue adding the record until you complete entering desired records. After it, close & finish record entry.

Teacher

| FacultyId | TeacherNam | Designation | Department |
|---|---|---|---|
| 1 | Mubashir | Lecturer | Computer |
| 2 | Rayyan | Assistant Profofesor | Mathematics |
| 3 | Shehroz | Lecturer | Physics |
| 4 | haseeb | Lecturer | Computer |
| 5 | Hammad | Assistant Professor | Computer |
| 6 | hassan | Assistant Professor | Computer |

## Queries Design

15-With the help of mouse click **"Create"**, then point and left click **"Query Design"**.

17- **"Show table"** panel will be open, select**" Table"** tab from **"Table/Query/Both"**. Point and double left click the desired tables from available list of tables, to add these tables then left click **"cross/close"** present on top-right hand side of the panel, to close it.

18- Select field name from the available list of "combo-box", which you want to display or manipulate. Table name of that particular field will automatically be added after your selection of field. Mention the criteria if you want. Uncheck the "CheckBox" if you don't want to display this field.

19- Do repeat above step number 19 for each and every field, you want more to display or manipulate until you complete all desired field entries

20- Now in the **"criteria"** cell of field **"StudentId"** enter the contents **"[Enter Student Id?]"** to create the query of "Showing student record by Student Id" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"Student By ID"**, again left click **"Ok"** Button. You can save query with your desired name as well.

21- Repeat from above step number 17 to 21 for creating remaining queries, just remove/change the contents of criteria cell, as per your requirement.

| Field: | StudentId | StudentName | Address | Cellno |
|---|---|---|---|---|
| Table: | Student | Student | Student | Student |
| Sort: | | | | |
| Show: | ☑ | ☑ | ☑ | ☑ |
| Criteria: | [Enter Student Id? ] | | | |
| or: | | | | |

## Obtaining Query Results

22-Double click any query to display its result, if there is a need of passing any value then just type-in the value you want to pass into the panel that appears before you.

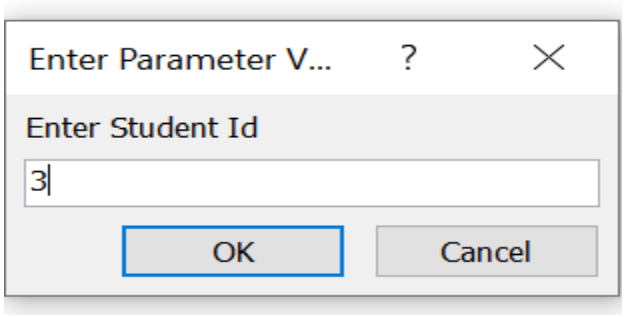
# Output

## Requirement#3- Showing all Five(5) Records

Teacher

| FacultyId | TeacherNam | Designation | Department |
|---|---|---|---|
| 1 | Mubashir | Lecturer | Computer |
| 2 | Rayyan | Assistant Profofesor | Mathematics |
| 3 | Shehroz | Lecturer | Physics |
| 4 | haseeb | Lecturer | Computer |
| 5 | Hammad | Assistant Professor | Computer |
| 6 | hassan | Assistant Professor | Computer |

## *Requirement#4- Showing Record by Student Id*




Student Query

| StudentId | StudentNam | Address | CellNo | DOB |
|---|---|---|---|---|
| 3 | Sheroz | Block R NN Karachi | 989009990 | 2/1/2004 |
| (New) | | | 0 | |

# Practical No.18

**Object** Write a procedure to create a table Students having the following fields

**StudentId, Name, Class, Group, Gender.**

**Queries**

1. Assign primary key to StudentId.
2.Input 5 records
3. Display all records of Female students
4. List all the records of students

# Procedure

## Switching on Computer

1- Switch on your computer. Wait till the operation system **"Windows"** let you give access to interact with the computer.

## Searching and Opening MS-Access

2-With the help of mouse click **"Start"** Icon, generally present at bottom left side of the computer screen-

3-Use Mouse click **"Search Bar"**, type **"Microsoft Office Access"** in it with the help of computer keyboard to search and open **MS-Access**.

## Creating Database

4-Point Mouse Cursor to Blank Database, it will be highlighted then click it with mouse.

5- New panel at right hand side will be open, point your mouse cursor to the file name location, type new name **"StudentsDatabase"** there then click **"Create"** button.

## Creating & Renaming Table

6-Another big new panel at right hand side will be open, point your mouse cursor to **"Table1: Table"** icon, it will be highlighted then right click it, with the mouse. A **"drop-down menu"** will be open, click second option **"Design View"** from it.

7- Now **"Save As"** panel will be open, give new name **"Students"** in the text box to Save **"Table1"** as **"Students"**, then press **"ok"** Button.

8-Type in the **"Field Name"** text value **"StudentID"**.

9- Use mouse to point the cell below **"Data Type"**, select there **"Auto Number"** from the available **"combo box"** option list.

10- Use mouse to point the next cell present under **"Description"** heading, type the description whatever you want to write for your future reference or let it remain empty.

11- Repeat above steps till all the remaining **fields (StudentName, Class, Group, Gender) with "data types" and "description"** are properly typed into the corresponding cell of Database Design Window. Always use **"Text"** data type for fields like [Name, Address, Contact, Email etc.], **"AutoNumber"** for automatic assignment of numbers. **"Numeric"** for fields on which calculation are performed, **"Currency"** for fields like [wages, salary], **"Date"** for fields which are supposed to store dates, **"Hyperlink"** for fields holding [websites / urls etc.], **"OLE Object"** for picture, photographs, **"Yes/No"** for status showing field, **"Attachment"** for external files, **"Memo"** for descriptive fields."**Lookup Wizard"** for foreign fields from other tables of the database.

12-

## Requirement#1- Assigning Primary Key

to the suitable field i.e **"StudentID"** which can be capable of identifying each record uniquely. If it is already assigned by computer then no need to re-assign it.

Student2

| Field Name | Data Type |
|---|---|
| StudentId | AutoNumber |
| Name | Short Text |
| Class | Short Text |
| Group | Short Text |
| Gender | Short Text |

13-Save the Table once again to update changes.

## Requirement#2- Entering Five (5) Records

14-Now double click **"Students"** table to open it. Enter valid data into it. Use mouse to toggle b/w the fields of each record. Continue adding the record until you complete entering desired records. After it, close & finish record entry.

Student2 | Student2 Query

| StudentId | Name | Class | Group | Gender |
|---|---|---|---|---|
| 1 | Mubashir | XII | Science General | Male |
| 2 | Eshal | XII | Science General | Female |
| 3 | Daniyal | XII | Science General | Male |
| 4 | Warda | XII | Science General | Female |
| 5 | Rayyan | XII | PRE Engineering | Male |
| 6 | Irtiza | XII | Science General | Male |
| (New) | | XII | | |

## Queries Design

15- With the help of mouse click **"Create"**, then point and left click **"Query Design"**.

17- **"Show table"** panel will be open, select**" Table"** tab from **"Table/Query/Both"**. Point and double left click the desired tables from available list of tables, to add these tables then left click **"cross/close"** present on top-right hand side of the panel, to close it.

18- Select field name from the available list of "combo-box", which you want to display or manipulate. Table name of that particular field will automatically be added after your selection of field. Mention the criteria if you want. Uncheck the"CheckBox" if you don't want to display this field.

19- Do repeat above step number 19 for each and every field, you want more to display or manipulate until you complete all desired field entries

20- Now in the **"criteria"** cell of field **"Gender"** enter the contents **"Female"** to create the query of "all female records" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"FemaleStudents"**, again left click **"Ok"** Button. You can save query with your desired name as well.

21- Repeat from above step number 17 to 21 for creating remaining queries, just remove/change the contents of criteria cell, as per your requirement.

## Obtaining Query Results

22-Double click any query to display its result, if there is a need of passing any value then just type-in the value you want to pass into the panel that appears before you.

# Output

## Requirement#3- Showing all records of female students

Student2 | Student2 Query

| StudentId | Name | Class | Group | Gender |
|---|---|---|---|---|
| 2 | Eshal | XII | Science General | Female |
| 4 | Warda | XII | Science General | Female |
| (New) | | XII | | |

## Requirement#4- Showing all Five (5) Records

Student2 | Student2 Query

| StudentId | Name | Class | Group | Gender |
|---|---|---|---|---|
| 1 | Mubashir | XII | Science General | Male |
| 2 | Eshal | XII | Science General | Female |
| 3 | Daniyal | XII | Science General | Male |
| 4 | Warda | XII | Science General | Female |
| 5 | Rayyan | XII | PRE Engineering | Male |
| 6 | Irtiza | XII | Science General | Male |
| (New) | | XII | | |

# Practical No.19

**Object** Write a procedure to create a table MyBank having the following fields

**AccountNo, AccountName,Credit, Debit.**

**Queries**

1. Assign primary key to a suitable column.
2.Input 5 records
3. Add a column Balance
4. Update the Column

BaLance

# Procedure

## Switching on Computer

1- Switch on your computer. Wait till the operation system **"Windows"** let you give access to interact with the computer.

## Searching and Opening MS-Access

2-With the help of mouse click **"Start"** Icon, generally present at bottom left side of the computer screen-

3-Use Mouse click **"Search Bar"**, type **"Microsoft Office Access"** in it with the help of computer keyboard to search and open **MS-Access**.

## Creating Database

4-Point Mouse Cursor to Blank Database, it will be highlighted then click it with mouse.

5- New panel at right hand side will be open, point your mouse cursor to the file name location, type new name **"MyBankDatabase"** there then click **"Create"** button.

## Creating & Renaming Table

6-Another big new panel at right hand side will be open, point your mouse cursor to **"Table1: Table"** icon, it will be highlighted then right click it, with the mouse. A **"drop-down menu"** will be open, click second option **"Design View"** from it.
7- Now **"Save As"** panel will be open, give new name **"MyBank"** in the text box to Save **"Table1"** as **"MyBank"**, then press **"ok"** Button.

8-Type in the **"Field Name"** text value **"AccountNo"**.

9- Use mouse to point the cell below **"Data Type"**, select there **"Auto Number"** from the available **"combo box"** option list.
10- Use mouse to point the next cell present under **"Description"** heading, type the description whatever you want to write for your future reference or let it remain empty.

11- Repeat above steps till all the remaining **fields (AccountName, Credit, Debit) with "data types" and "description"** are properly typed into the corresponding cell of Database Design Window. Always use **"Text"** data type for fields like [Name, Address, Contact, Email etc.], **"AutoNumber"** for automatic assignment of numbers. **"Numeric"** for fields on which calculation are performed, **"Currency"** for fields like [wages, salary], **"Date"** for fields which

are supposed to store dates, **"Hyperlink"** for fields holding [websites / urls etc.], **"OLE Object"** for picture, photographs, **"Yes/No"** for status showing field, **"Attachment"** for external files, **"Memo"** for descriptive fields.**"Lookup Wizard"** for foreign fields from other tables of the database.

12-

**Requirement#1- Assigning Primary Key** to the suitable field i.e **"AccountNo"** which can be capable of identifying each record uniquely. If it is already assigned by computer then no need to re-assign it.

Account

| Field Name | Data Type |
|---|---|
| AccountId | AutoNumber |
| AccountName | Short Text |
| Credit | Currency |
| Debit | Currency |

13-Save the Table once again to update changes.

## Requirement#2- Entering Five (5) Records

14-Now double click **"MyBank"** table to open it. Enter valid data into it. Use mouse to toggle b/w the fields of each record. Continue adding the record until you complete entering desired records. After it, close & finish record entry.

Account | MyBank Query

| AccountId | AccountName | Credit | Debit | Click to Add |
|---|---|---|---|---|
| 1 | Hasan | $530.00 | $210.00 | |
| 2 | Mubashir | $110.00 | $100.00 | |
| 3 | Haseeb | $1,100.00 | $900.00 | |
| 4 | Rayyan | $2,390.00 | $120.00 | |
| 5 | Rohan | $10,000.00 | $110.00 | |
| (New) | | $0.00 | $0.00 | |

## Queries Design

15-With the help of mouse click **"Create"**, then point and left click **"Query Design"**.

17- **"Show table"** panel will be open, select**"** **Table"** tab from **"Table/Query/Both"**. Point and double left click the desired tables from available list of tables, to add these

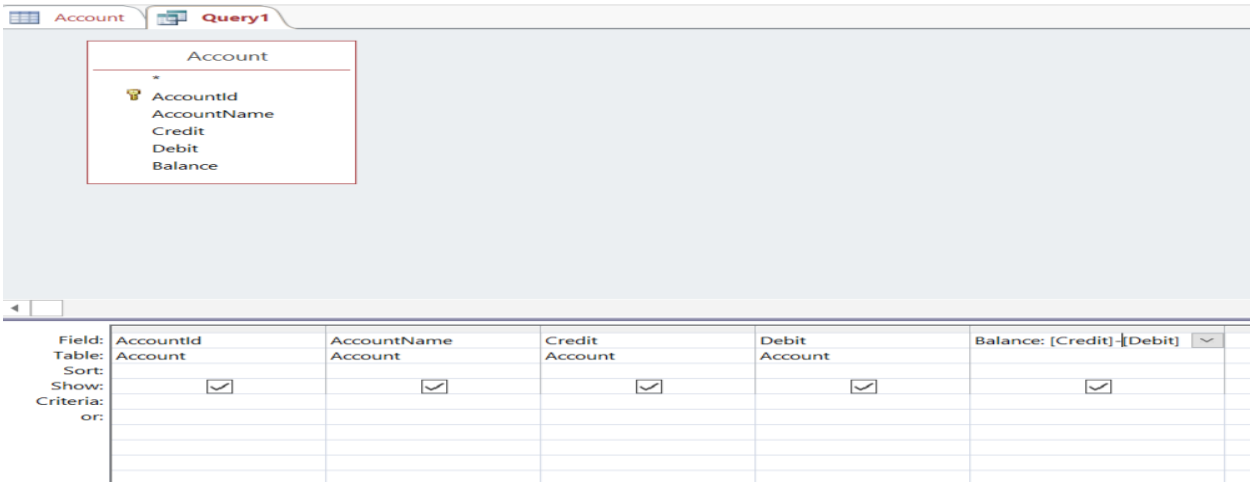
tables then left click **"cross/close"** present on top-right hand side of the panel, to close it.

18- Select field name from the available list of "combo-box", which you want to display or manipulate. Table name of that particular field will automatically be added after your selection of field. Mention the criteria if you want. Uncheck the "CheckBox" if you don't want to display this field.

19- Do repeat above step number 19 for each and every field, you want more to display or manipulate until you complete all desired field entries

20- Now add new column **"Balance"** in the query **"MyBank Query"** in **"design view"**. Write like this **"Balance: [Credit]-[Debit]"** in the Field corresponding cell to make it calculated field to create the query of "all records show balance" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"MyBank Query"**, again left click **"Ok"** Button. You can save query with your desired name as well.

21- Repeat from above step number 17 to 21 for creating remaining queries, just remove the contents of criteria cell, as per your requirement.




## Obtaining Query Results

22-Double click any query to display its result, if there is a need of passing any value then just type-in the value you want to pass into the panel that appears before you.

# Output

## Requirement#3- Inserting Balance Column

Account | MyBank Query

| AccountId | AccountName | Credit | Debit | Balance |
|---|---|---|---|---|
| 6 | Hasan | $0.00 | $0.00 | $0.00 |
| (New) | | $0.00 | $0.00 | |

## Requirement#4- Updating Balance Column

Account | MyBank Query

| AccountId | AccountName | Credit | Debit | Balance |
|---|---|---|---|---|
| 1 | Hasan | $530.00 | $210.00 | $320.00 |
| 2 | Mubashir | $110.00 | $100.00 | $10.00 |
| 3 | Haseeb | $1,100.00 | $900.00 | $200.00 |
| 4 | Rayyan | $2,390.00 | $120.00 | $2,270.00 |
| 5 | Rohan | $10,000.00 | $110.00 | $9,890.00 |
| (New) | | $0.00 | $0.00 | |

# Practical No.20

**Object** Write a procedure to create a table Library having the following fields

**Book Id, Name, Reference, Book Issued.**

## Queries

1. Assign primary key to a suitable column.
2.Input 5 records
3. Dispay all books which are not for lending
4 Find list of books issued.

# Procedure

## Switching on Computer

1- Switch on your computer. Wait till the operation system **"Windows"** let you give access to interact with the computer.

## Searching and Opening MS-Access

2-With the help of mouse click **"Start"** Icon, generally present at bottom left side of the computer screen-

3-Use Mouse click **"Search Bar"**, type **"Microsoft Office Access"** in it with the help of computer keyboard to search and open **MS-Access**.

## *Creating Database*

4-Point Mouse Cursor to Blank Database, it will be highlighted then click it with mouse.

5- New panel at right hand side will be open, point your mouse cursor to the file name location, type new name **"LibraryDatabase"** there then click **"Create"** button.

## Creating & Renaming Table

6-Another big new panel at right hand side will be open, point your mouse cursor to **"Table1: Table"** icon, it will be highlighted then right click it, with the mouse. A **"drop-down menu"** will be open, click second option **"Design View"** from it.

7- Now **"Save As"** panel will be open, give new name **"Library"** in the text box to Save **"Table1"** as **"Library"**, then press **"ok"** Button.

8-Type in the **"Field Name"** text value **"BookId"**.

9- Use mouse to point the cell below **"Data Type"**, select there **"Auto Number"** from the available **"combo box"** option list.

10- Use mouse to point the next cell present under **"Description"** heading, type the description whatever you want to write for your future reference or let it remain empty.

11- Repeat above steps till all the remaining **fields (BookName, Reference, Issued) with "data types" and "description"** are properly typed into the corresponding cell of Database Design Window. Always use **"Text"** data type for fields like [Name, Address, Contact, Email etc.], **"AutoNumber"** for automatic assignment of numbers. **"Numeric"** for fields on which calculation are performed, **"Currency"** for fields like [wages, salary], **"Date"** for fields which are supposed to store dates, **"Hyperlink"** for fields holding [websites / urls etc.], **"OLE Object"** for picture, photographs, **"Yes/No"** for status showing field, **"Attachment"** for external files, **"Memo"** for descriptive fields.**"Lookup Wizard"** for foreign fields from other tables of the database.

12-

**Requirement#1- Assigning Primary Key** to the suitable field i.e **"BookId"** which can be capable of identifying each record uniquely. If it is already assigned by computer then no need to re-assign it.

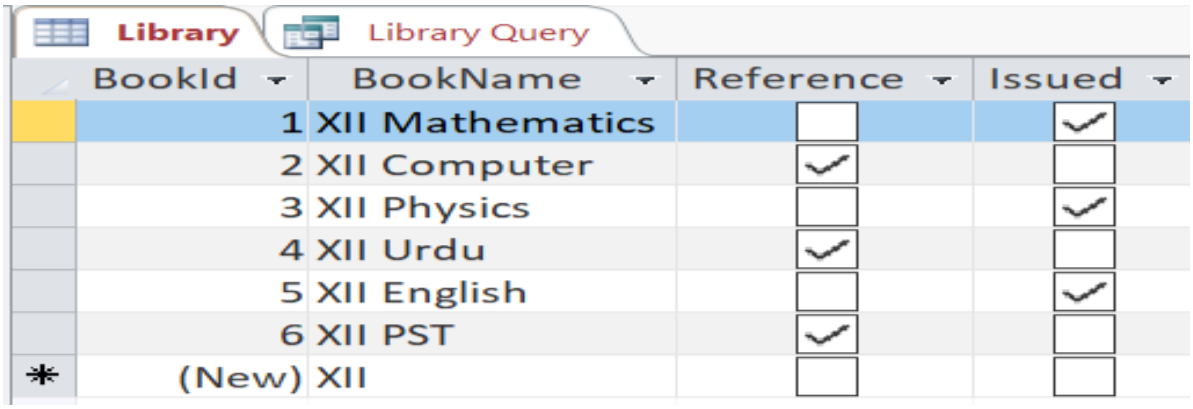
Library

| Field Name | Data Type |
|---|---|
| BookId | AutoNumber |
| BookName | Short Text |
| Reference | Yes/No |
| Issued | Yes/No |

13-Save the Table once again to update changes.

## Requirement#2- Entering Five (05) Records

14-Now double click **"Library"** table to open it. Enter valid data into it. Use mouse to toggle b/w the fields of each record. Continue adding the record until you complete entering desired records. After it, close & finish record entry.



Library | Library Query

| BookId | BookName | Reference | Issued |
|---|---|---|---|
| 1 | XII Mathematics | ☐ | ☑ |
| 2 | XII Computer | ☑ | ☐ |
| 3 | XII Physics | ☐ | ☑ |
| 4 | XII Urdu | ☑ | ☐ |
| 5 | XII English | ☐ | ☑ |
| 6 | XII PST | ☑ | ☐ |
| (New) | XII | ☐ | ☐ |

## Queries Design

15-With the help of mouse click **"Create"**, then point and left click **"Query Design"**.

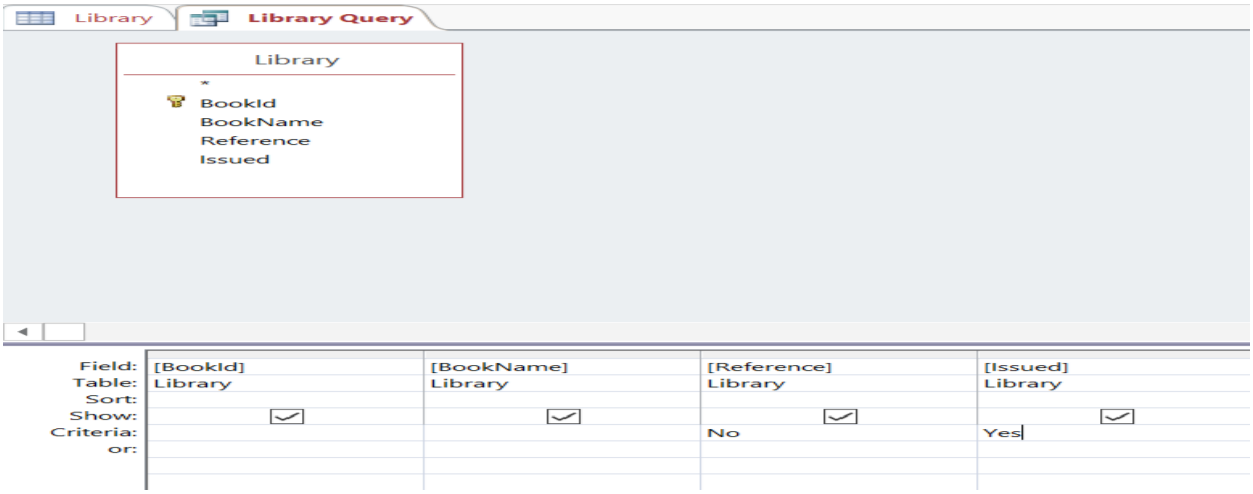
17- **"Show table"** panel will be open, select**" Table"** tab from **"Table/Query/Both"**. Point and double left click the desired tables from available list of tables, to add these tables then left click **"cross/close"** present on top-right hand side of the panel, to close it.

18- Select field name from the available list of "combo-box", which you want to display or manipulate. Table name of that particular field will automatically be added after your selection of field. Mention the criteria if you want. Uncheck the "CheckBox" if you don't want to display this field.

19- Do repeat above step number 19 for each and every field, you want more to display or manipulate until you complete all desired field entries

20- Now in the **"criteria"** cell of field **"Reference"** enter the contents **"Yes"** to create the query of "all books not for lending (Reference Books)" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"Reference Books(Not for Lending)"**, again left click **"Ok"** Button. You can save query with your desired name as well.

21- Repeat from above step number 17 to 21 for creating remaining queries, just remove/change the contents of criteria cell, as per your requirement.

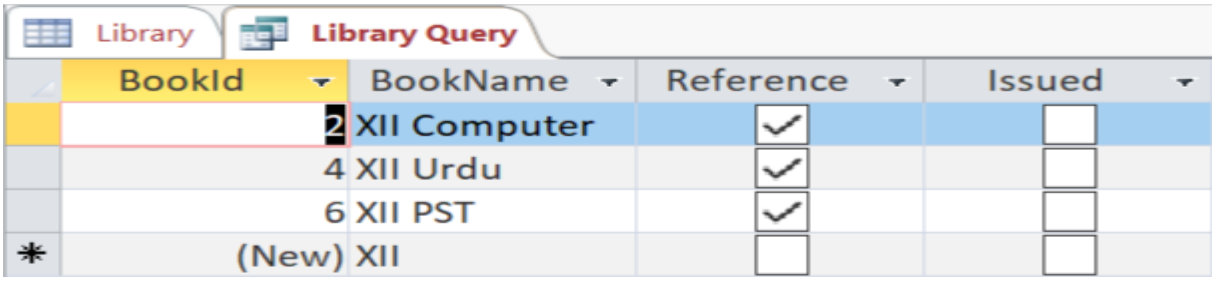



## Obtaining Query Results

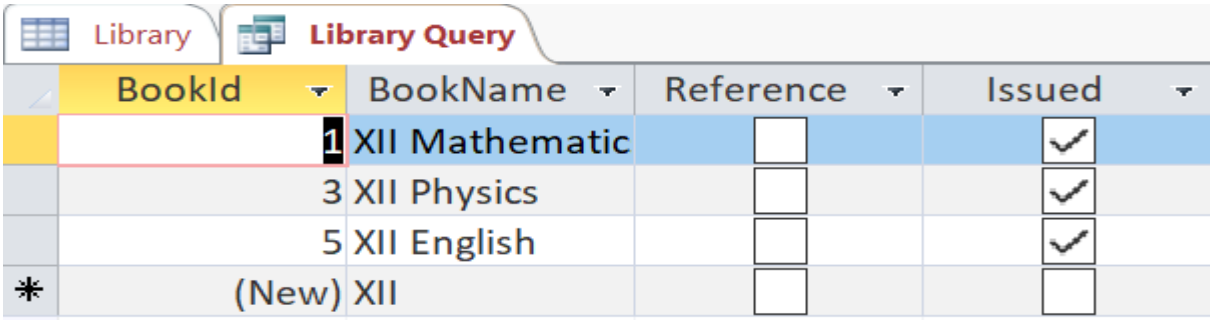
22-Double click any query to display its result, if there is a need of passing any value then just type-in the value you want to pass into the panel that appears before you.

# Output

## Requirement# 3- Showing Reference Books which are not for lending




## Requirement#4- List of issued Books



# Practical No.21

**Object** Write a procedure to create a table Employees having the following fields

**EmployeeId, EmployeeName, Address, Postcode, DateHired, Wages.**

## Queries

1. Assign primary key to a suitable column.
2.Input 5 records
3. Display particular record by EmployeeId
4. Display those records who have the same Address.

# Procedure

## Switching on Computer

**1-** Switch on your computer. Wait till the operation system "Windows" let you give access to interact with the computer.

## Searching and Opening MS-Access

2-With the help of mouse click **"Start"** Icon, generally present at bottom left side of the computer screen-

3-Use Mouse click **"Search Bar"**, type **"Microsoft Office Access"** in it with the help of computer keyboard to search and open **MS-Access**.

### Creating Database

4-Point Mouse Cursor to Blank Database, it will be highlighted then click it with mouse.

5- New panel at right hand side will be open, point your mouse cursor to the file name location, type new name **"EmployeeDatabase"** there then click **"Create"** button.

## Creating & Renaming Table

6-Another big new panel at right hand side will be open, point your mouse cursor to **"Table1: Table"** icon, it will be highlighted then right click it, with the mouse. A **"drop-down menu"** will be open, click second option **"Design View"** from it.
7- Now **"Save As"** panel will be open, give new name **"Employee"** in the text box to Save **"Table1"** as **"Employee"**, then press **"ok"** Button.

8-Type in the **"Field Name"** text value **"EmployeeID"**.

9- Use mouse to point the cell below **"Data Type"**, select there **"Auto Number"** from the available **"combo box"** option list.
10- Use mouse to point the next cell present under **"Description"** heading, type the description whatever you want to write for your future reference or let it remain empty.

11- Repeat above steps till all the remaining **fields (EmployeeName, Address, Postcode, DateHired) with "data types" and "description"** are properly typed into the corresponding cell of Database Design Window. Always use **"Text"** data type for fields like [Name, Address, Contact, Email etc.], **"AutoNumber"** for automatic assignment of numbers. **"Numeric"** for fields on which calculation are performed, **"Currency"** for fields like [wages, salary], **"Date"** for fields which are supposed to store dates, **"Hyperlink"** for fields holding [websites / urls etc.], **"OLE Object"** for picture, photographs, **"Yes/No"** for status showing field, **"Attachment"** for external files, **"Memo"** for descriptive fields.**"Lookup Wizard"** for foreign fields from other tables of the database. 12-

**Requirement#1- Assigning Primary Key** to the suitable field i.e **"EmployeeID"** which can be capable of identifying each record uniquely. If it is already assigned by computer then no need to re-assign it.

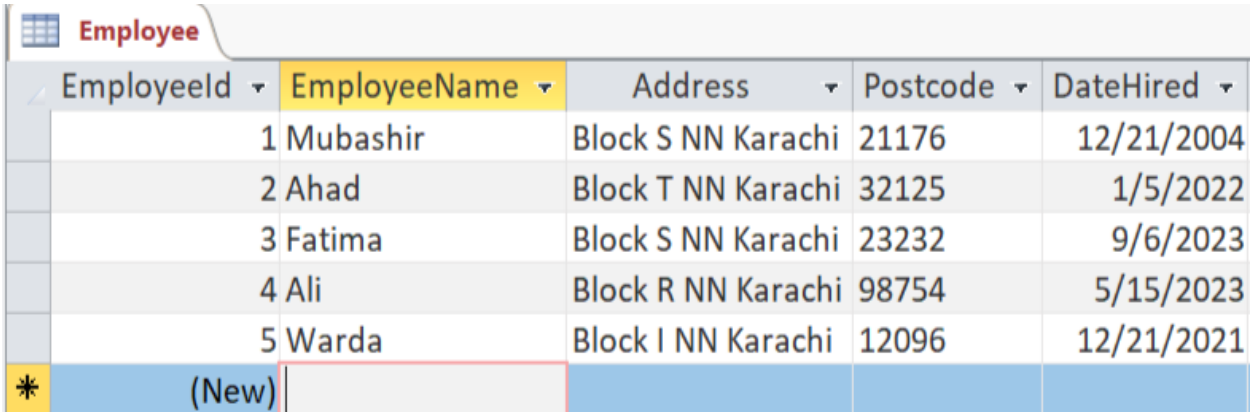
Employee

| Field Name | Data Type |
|---|---|
| EmployeeId | AutoNumber |
| EmployeeName | Short Text |
| Address | Short Text |
| Postcode | Short Text |
| DateHired | Date/Time |

13-Save the Table once again to update changes.

## Requirement#2-Entering Five (5) Records

14-Now double click **"Employee"** table to open it. Enter valid data into it. Use mouse to toggle b/w the fields of each record. Continue adding the record until you complete entering desired records. After it, close & finish record entry.



Employee

| EmployeeId | EmployeeName | Address | Postcode | DateHired |
|---|---|---|---|---|
| 1 | Mubashir | Block S NN Karachi | 21176 | 12/21/2004 |
| 2 | Ahad | Block T NN Karachi | 32125 | 1/5/2022 |
| 3 | Fatima | Block S NN Karachi | 23232 | 9/6/2023 |
| 4 | Ali | Block R NN Karachi | 98754 | 5/15/2023 |
| 5 | Warda | Block I NN Karachi | 12096 | 12/21/2021 |
| (New) | | | | |

## Queries Design

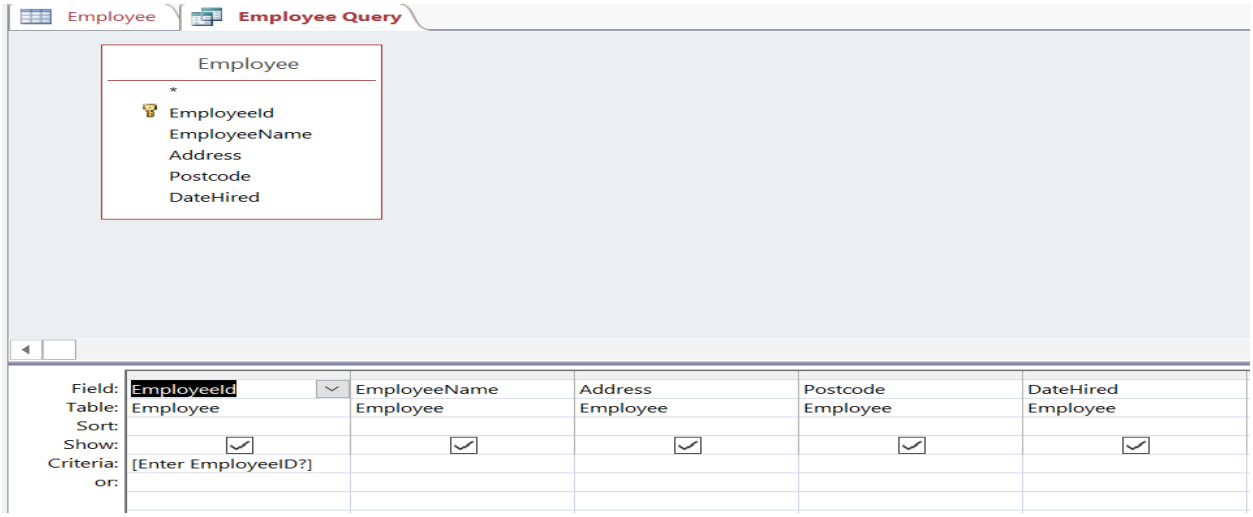
15-With the help of mouse click **"Create"**, then point and left click **"Query Design"**.

17- **"Show table"** panel will be open, select**" Table"** tab from **"Table/Query/Both"**. Point and double left click the desired tables from available list of tables, to add these tables then left click **"cross/close"** present on top-right hand side of the panel, to close it.

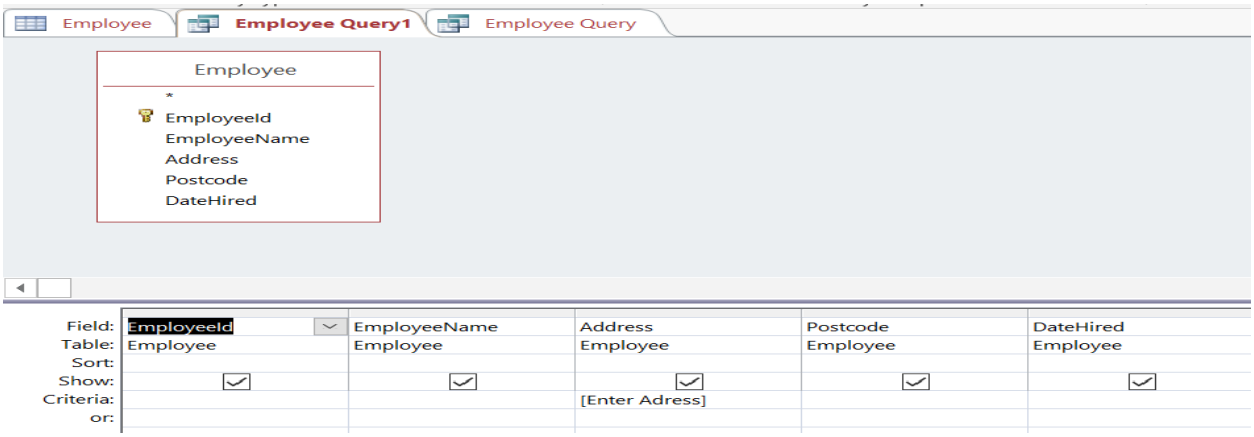
18- Select field name from the available list of "combo-box", which you want to display or manipulate. Table name of that particular field will automatically be added after your selection of field. Mention the criteria if you want. Uncheck the "CheckBox" if you don't want to display this field.

19- Do repeat above step number 19 for each and every field, you want more to display or manipulate until you complete all desired field entries

20- Now in the **"criteria"** cell of field **"EmployeeID"** enter the contents **"[Enter EmployeeID?]"** to create the query of "Display Particular Record by Employee ID" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"Employees By ID"**, again left click **"Ok"** Button. You can save query with your desired name as well.




21- Now in the **"criteria"** cell of field **"Address"** enter the contents **"Enter Address"** to create the query of "Records having same address" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"Employees By Address"**, again left click **"Ok"** Button. You can save query with your desired name as well.



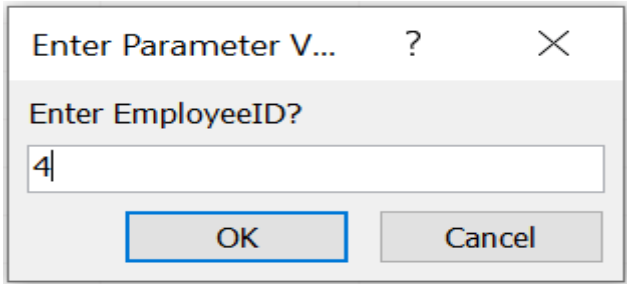

22- Repeat from above step number 17 to 21 for creating remaining queries, just remove the contents of criteria cell, as per your requirement.

## Obtaining Query Results

22-Double click any query to display its result, if there is a need of passing any value then just type-in the value you want to pass into the panel that appears before you.

# Output

## Requirement#3. Display particular record by EmployeeId




Employee | Employee Query1 | **Employee Query**

| EmployeeId | EmployeeName | Address | Postcode | DateHired |
|---|---|---|---|---|
| 4 | Ali | Block R NN Karachi | 98754 | 5/15/2023 |
| (New) | | | | |

## Requirement#4- Display All records having the same Address

Employee | Employee Query | **Employee Query1**

| EmployeeId | EmployeeNa | Address | Postcode | DateHired |
|---|---|---|---|---|
| 1 | Mubashir | Block S NN Karachi | 21176 | 12/21/2004 |
| 3 | Fatima | Block S NN Karachi | 23232 | 9/6/2023 |
| 5 | Warda | Block S NN Karachi | 12096 | 12/21/2021 |
| (New) | | | | |

# Practical No.22

**Object** Write a procedure to create a two tables having the following fields

**Table1: AccountNo, AccountName, HolderAddress, Contact, Email.**

**Table2: AccountNo, AccountStatus.**

## Queries

1. Input 5 records
2. Search the desired AccountNo
3. Delete the desired AccountNo
4. Update desired AccountId.

## Procedure

### Switching on Computer

1- Switch on your computer. Wait till the operation system **"Windows"** let you give access to interact with the computer.

### Searching and Opening MS-Access

2-With the help of mouse click **"Start"** Icon, generally present at bottom left side of the computer screen-

3-Use Mouse click **"Search Bar"**, type **"Microsoft Office Access"** in it with the help of computer keyboard to search and open **MS-Access**.

### Creating Database

4-Point Mouse Cursor to Blank Database, it will be highlighted then click it with mouse.

5- New panel at right hand side will be open, point your mouse cursor to the file name location, type new name **"BankAccountDatabase"** there then click **"Create"** button.

## Creating & Renaming Tables

6-Another big new panel at right hand side will be open, point your mouse cursor to **"Table1: Table"** icon, it will be highlighted then right click it, with the mouse. A **"drop-down menu"** will be open, click second option **"Design View"** from it.
7- Now **"Save As"** panel will be open, give new name **"BankAccount"** in the text box to Save **"Table1"** as **"BankAccount"**, then press **"ok"** Button.

8-Type in the **"Field Name"** text value **"AccountNo"**.

9- Use mouse to point the cell below **"Data Type"**, select there **"Auto Number"** from the available **"combo box"** option list.
10- Use mouse to point the next cell present under **"Description"** heading, type the description whatever you want to write for your future reference or let it remain empty.

11- Repeat above steps till all the remaining **fields (AccountName, HolderAddress, Contact, Email) with "data types" and "description"** are properly typed into the corresponding cell of Database Design Window. Always use **"Text"** data type for fields like [Name, Address, Contact, Email etc.], **"AutoNumber"** for automatic assignment of numbers. **"Numeric"** for fields on which calculation are performed, **"Currency"** for fields like [wages, salary], **"Date"** for fields which are supposed to store dates, **"Hyperlink"** for fields holding [websites / urls etc.], **"OLE Object"** for picture, photographs, **"Yes/No"** for status showing field, **"Attachment"** for external files, **"Memo"** for descriptive fields.**"Lookup Wizard"** for foreign fields from other tables of the database.
12- Repeat steps 6 to 11 for "AccountStatus" Table having fields (AccountNo as Foreign Key from BankAccount Table, AccountStatus)

13-

**Assigning Primary Key** to the suitable field i.e **"AccountNo" in "BankAccount"** table as well as in **"Account Status"** table which can be capable of identifying each record uniquely.

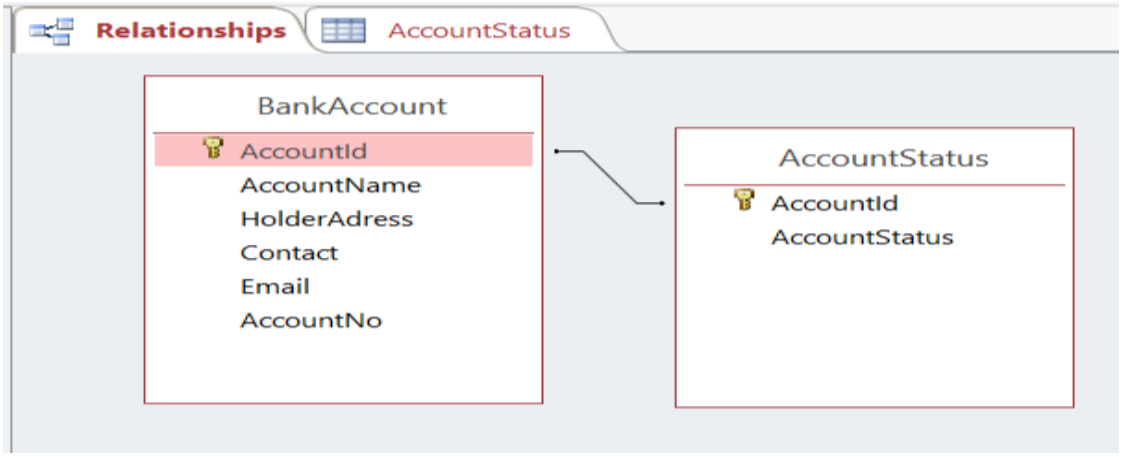
14-Save the Tables once again to update changes.

Relationships | AccountStatus | **BankAccount**

| Field Name | Data Type |
|---|---|
| AccountId | AutoNumber |
| AccountName | Short Text |
| HolderAdress | Short Text |
| Contact | Short Text |
| Email | Short Text |
| AccountNo | Number |

Relationships | **AccountStatus** | BankAccount

| Field Name | Data Type |
|---|---|
| AccountId | AutoNumber |
| AccountStatus | Yes/No |

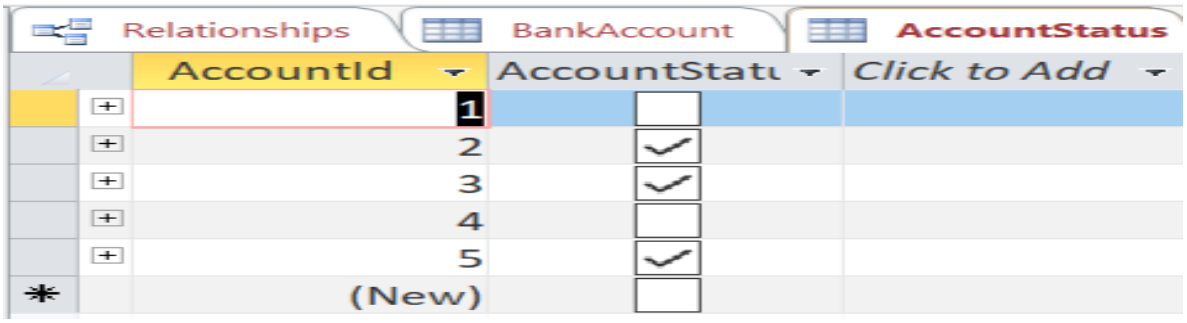


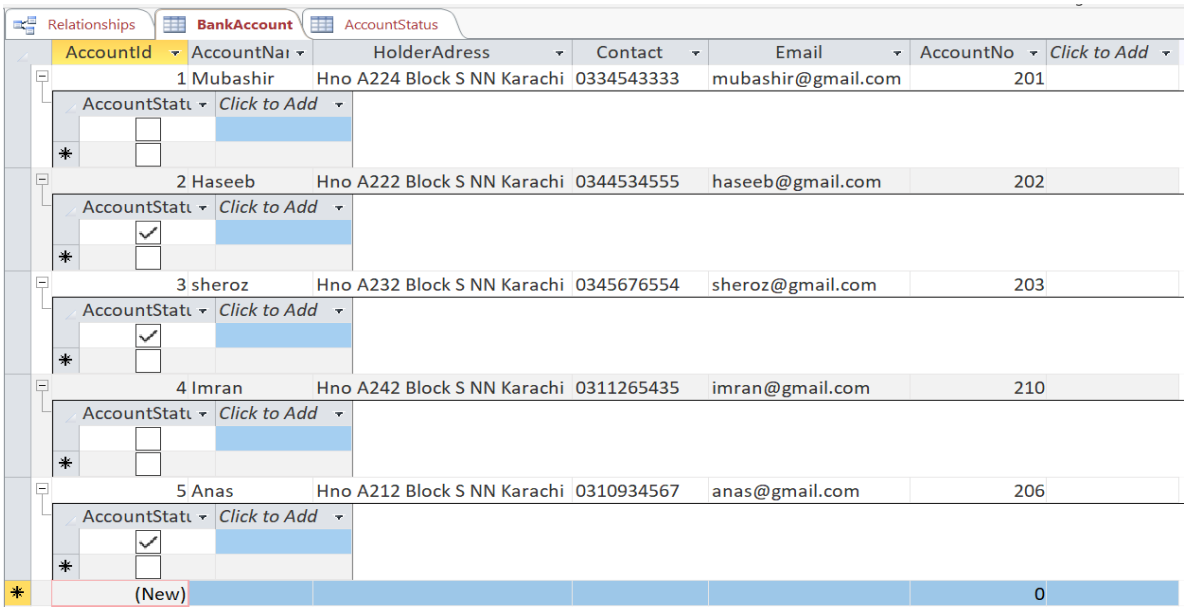

## Requirement#1- Entering Five (5) Records

15-Now double click **"BankAccount"** and **"Account Status"** tables repectively, to open it. Enter valid data into it. Use mouse to toggle b/w the fields of each record. Continue adding the record until you complete entering desired records. After it, close & finish record entry.

Relationships | **BankAccount**

| AccountId | AccountNa | HolderAdress | Contact | Email | AccountNo |
|---|---|---|---|---|---|
| 1 | Mubashir | Hno A224 Block S NN Karachi | 0334543333 | mubashir@gmail.com | 201 |
| 2 | Haseeb | Hno A222 Block S NN Karachi | 0344534555 | haseeb@gmail.com | 202 |
| 3 | sheroz | Hno A232 Block S NN Karachi | 0345676554 | sheroz@gmail.com | 203 |
| 4 | Imran | Hno A242 Block S NN Karachi | 0311265435 | imran@gmail.com | 210 |
| 5 | Anas | Hno A212 Block S NN Karachi | 0310934567 | anas@gmail.com | 206 |
| (New) | | | | | 0 |




## Queries Design

16-With the help of mouse click **"Create"**, then point and left click **"Query Design"**.

17- **"Show table"** panel will be open, select**" Table"** tab from **"Table/Query/Both"**. Point and double left click the desired tables from available list of tables, to add these tables then left click **"cross/close"** present on top-right hand side of the panel, to close it.

18- Select field name from the available list of "combo-box", which you want to display or manipulate. Table name of that particular field will automatically be added after your selection of field. Mention the criteria if you want. Uncheck the "CheckBox" if you don't want to display this field.

19- Do repeat above step number 19 for each and every field, you want more to display or manipulate until you complete all desired field entries

20- Now in the **"criteria"** cell of field **"AccountNo", table "BankAccount"** enter the contents **"[BankAccount].[givenAccount]"** to create the query of "all records having same department" and then Left click the **"Cross/Close"** button to close the Query Panel, left click **"Yes"** Button to save the Query1 with the new name **"BankRecord Display By Id"**, again left click **"Ok"** Button. You can save query with your desired name as well.

21- Repeat from above step number 17 to 21 for creating remaining queries, just remove the contents of criteria cell, as per your requirement.

| Field: | AccountId | AccountName | HolderAdress | Contact | Email |
|---|---|---|---|---|---|
| Table: | BankAccount | BankAccount | BankAccount | BankAccount | BankAccount |
| Delete: | Where | Where | Where | Where | Where |
| Criteria: | [BankAccount].[givenAccount] | | | | |
| or: | | | | | |

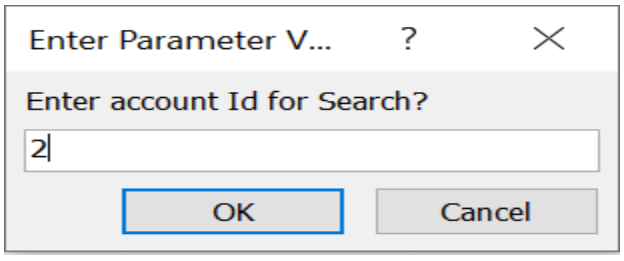
| | |
|---|---|
| Field: | AccountName |
| Table: | BankAccount |
| Update To: | "Mubashir" |
| Criteria: | Like "Mubashir khan*" |
| or: | |

## Obtaining Query Results

22-Double click any query to display its result, if there is a need of passing any value then just type-in the value you want to pass into the panel that appears before you.

# Output

## Requirement#2-Search Account by ID



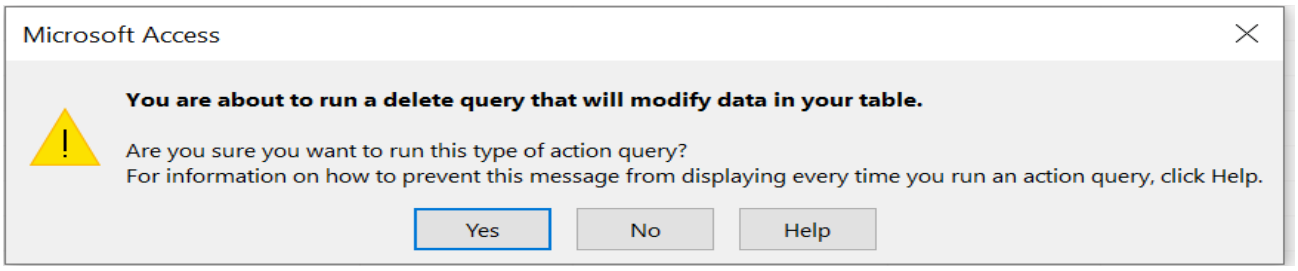
AccountStatus | BankAccount | BankAccount Query2

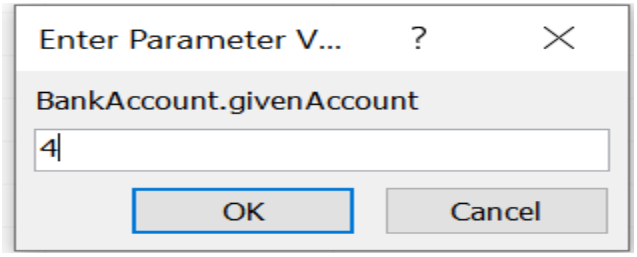
| AccountId | AccountName | HolderAdress | Contact | Email | AccountNo |
|---|---|---|---|---|---|
| 2 | Haseeb | Hno A222 Block S NN Karachi | 0344534555 | haseeb@gmail.com | 202 |
| (New) | | | | | 0 |

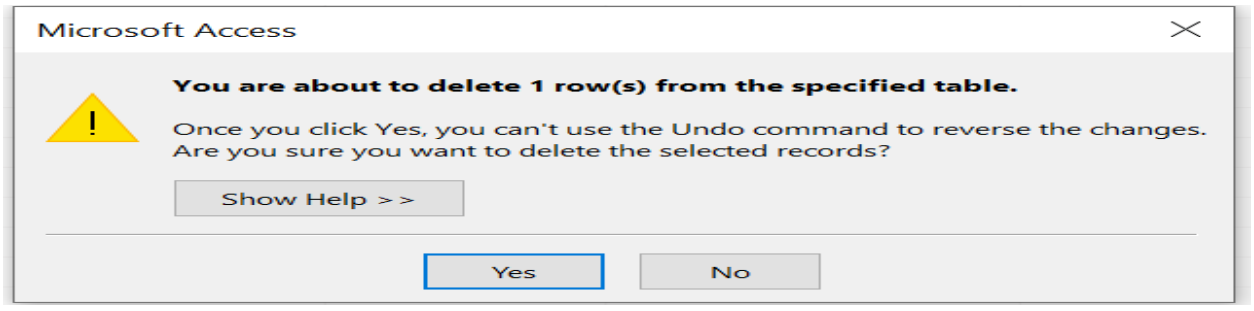
## Requirement#3- Delete Account by ID

Relationships | BankAccount

| AccountId | AccountNai | HolderAdress | Contact | Email | AccountNo |
|---|---|---|---|---|---|
| 1 | Mubashir | Hno A224 Block S NN Karachi | 0334543333 | mubashir@gmail.com | 201 |
| 2 | Haseeb | Hno A222 Block S NN Karachi | 0344534555 | haseeb@gmail.com | 202 |
| 3 | sheroz | Hno A232 Block S NN Karachi | 0345676554 | sheroz@gmail.com | 203 |
| 4 | Imran | Hno A242 Block S NN Karachi | 0311265435 | imran@gmail.com | 210 |
| 5 | Anas | Hno A212 Block S NN Karachi | 0310934567 | anas@gmail.com | 206 |
| (New) | | | | | 0 |



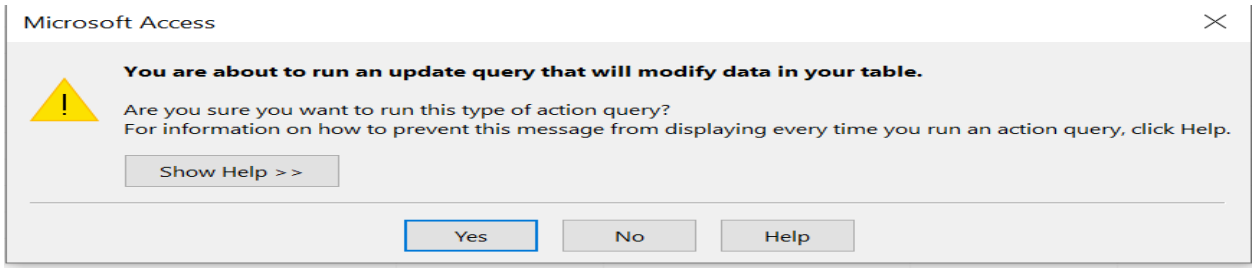



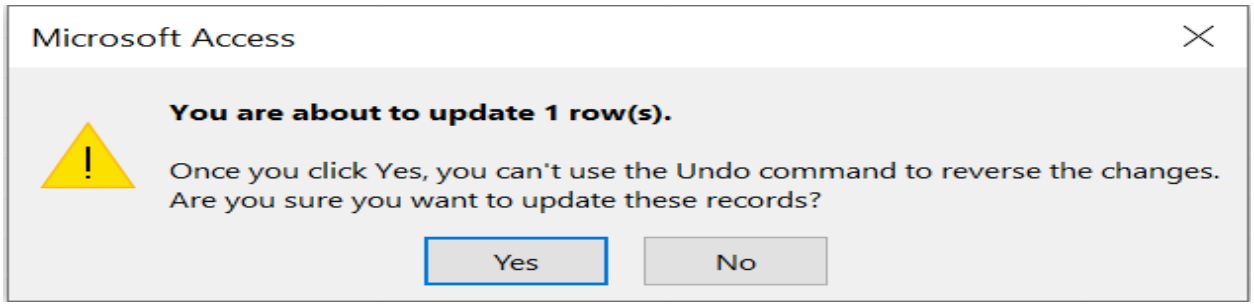



BankAccount

| AccountId | AccountNa | HolderAdress | Contact | Email | AccountNo | Click to Add |
|---|---|---|---|---|---|---|
| 1 | Mubashir | Hno A224 Block S NN Karachi | 0334543333 | mubashir@gmail.com | 201 | |
| 2 | Haseeb | Hno A222 Block S NN Karachi | 0344534555 | haseeb@gmail.com | 202 | |
| 3 | sheroz | Hno A232 Block S NN Karachi | 0345676554 | sheroz@gmail.com | 203 | |
| 5 | Anas | Hno A212 Block S NN Karachi | 0310934567 | anas@gmail.com | 206 | |
| (New) | | | | | 0 | |

## Requirement#4- Update Account by ID




BankAccount | AccountStatus | BankAccount Query1

| AccountId | AccountName | HolderAdress | Contact | Email | AccountNo |
|---|---|---|---|---|---|
| 1 | Mubashir Khan | Hno A224 Block S NN Karachi | 0334543333 | mubashir@gmail.com | 201 |
| 2 | Haseeb | Hno A222 Block S NN Karachi | 0344534555 | haseeb@gmail.com | 202 |
| 3 | sheroz | Hno A232 Block S NN Karachi | 0345676554 | sheroz@gmail.com | 203 |
| 5 | Anas | Hno A212 Block S NN Karachi | 0310934567 | anas@gmail.com | 206 |
| (New) | | | | | 0 |