

1. Draw the flow chart for finding largest of three numbers and write an algorithm and explain it.

Ans:

Algorithm

Step 1: Start

Step 2: Declare variables a, b, c

Step 3: Read values of a, b, c

Step 4: if a > b

 If a > c

 Print a is the greatest number

 Else

 Print c is the greatest number

Else

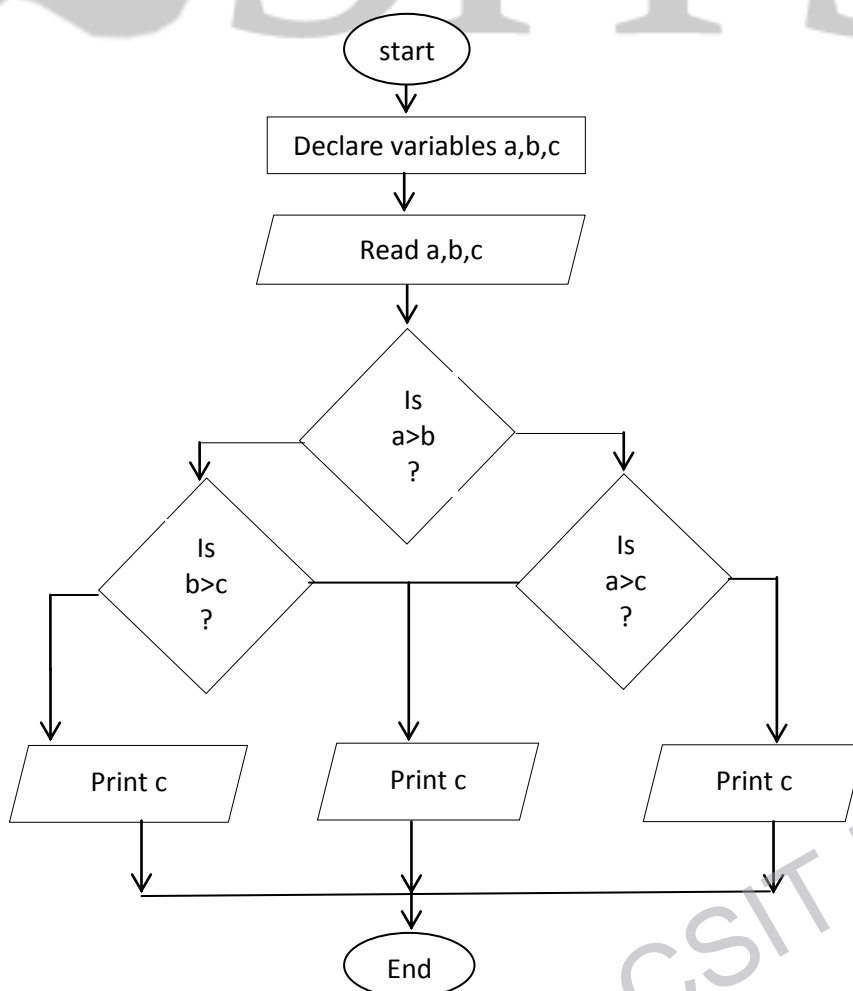
 If b > c

 Print b is the greatest number

 Else

 Print c is the greatest number

Step 5: Stop



2. Find the value of "a" in each of the following statements.

int i=3 , j=4, k=8;

float a =4.5, b = 6.5, c = 3.5;

(a) $a = b - i/k + c/k$

(b) $a = (b-k)/j + (j+c)/k$

(c) $a = c - ((i+j)/(k+i)) * b$

(d) $a = c - i/j/k + i * b$

(e) $a = c + j \% 2 + b$

(f) $a = (b+1) \% (c+1)$

Ans:

A) $a = b - i/k + c/k$
 $= 6.5 - 3/8 + 3.5/8$
 $= 6.5 - 0 + 0.4375$
 $= 6.9375$

B) $a = (b-k)/j + (j+c)/k$
 $= (6.5-8)/4 + (4+3.5)/8$
 $= -0.375 + 0.9375$
 $= 0.5625$

C) $a = c - ((i+j)/(k+i)) * b$
 $= 3.5 - ((3+4)/(8+3)) * 6.5$
 $= 3.5 - 0 * 6.5$
 $= 3.5$

D) $a = c - i/j/k + i * b$
 $= 3.5 - 3/4/8 + 3 * 6.5$
 $= 3.5 - 3 + 0 + 19.5$
 $= 0.5 + 19.5$
 $= 20$

E) $a = c + j \% 2 + b$
 $= 3.5 + 4 \% 2 + 6.5$
 $= 3.5 + 0 + 6.5$
 $= 10$

F) $a = (b+1) \% (c+1)$
 $= (6.5+1) \% (3.5+1)$
 $= 7.5 \% 4.5$
 $= \text{Not valid}$

3. Write a program for the interest charged in installments for following case. A cassette player costs Rs. 2000. A shopkeeper sells it for Rs. 100 down payment and Rs. 100 for 21 more months. What is the monthly interest Charged?

```
#include<stdio.h>
#include<conio.h>
void main()
{
```

```

float c_price,t_price,t_interest,m_interest; //cost price, total price, total interest,
monthly      interest
c_price=2000;
t_price=100+(100*21);//down payment Rs. 100 and Rs. 100 for 21 installments
t_interest=(t_price-c_price)/c_price*100;
m_interest=t_interest/22;//payment is for 22 months
printf("\nThe monthly interest charged is %.2f",m_interest); //result is 0.45% per
month
getch();
}

```

4. Write a program that uses a “for” loop to compute and prints the sum of a given numbers of squares.

Ans:

```

#include<stdio.h>
#include<conio.h>
void main()
{
    int i, n, sum=0;
    printf("Enter the number:");
    scanf("%d",&n);
    for(i=1;i<n;i++)
    {
        sum=i*i+sum;
    }
    printf("\n Sum=%d",sum);
    getch();
}

```

5. Write a program to obtain the product of the following matrices and explain it;

Ans:

```

#include<stdio.h>
#include<conio.h>
void main
{
    int a[3][3]={{3,5,7},{2,-3,4},{4,5,2}};
    int b[3][2]={{7,6},{6,-5},{4,3}};
    int i,j,k,c[3][2];
    for(i=0;i<3;i++)
    {
        for(j=0;j<2;j++)
        {
            c[i][j]=0;
            for(k=0;k<3;k++)
            {
                c[i][j]=c[i][j]+a[i][k]*b[k][j];
            }
        }
    }
}

```

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```

    }
}
for(i=0;i<3;i++)
{
    for(j=0;j<2;j++)
    {
        printf("%d",c[i][j]);
    }
    printf("\n");
}
getch();
}

```

6. Write a function to add, subtract, multiply and divide two complex numbers($x+iy$) and ($c+id$).

Ans:

```

#include<stdio.h>
#include<conio.h>
void add(int,int,int,int);
void sub(int,int,int,int);
void mul(int,int,int,int);
void div(int,int,int,int);

void main()
{
    int x,y,c,d,l;
    printf("Enter real and imaginary part1:");
    scanf("%d%d",&x,&y);
    printf("Enter real and imaginary part2:");
    scanf("%d%d",&c,&d);
    add(x,y,c,d);
    sub(x,y,c,d);
    mul(x,y,c,d);
    div(x,y,c,d);
    getch();
}

void add(int r1,int ip1, int r2,int ip2)
{
    int realsum,imgsum;
    realsum=r1+r2;
    imgsum=ip1+ip2;
    printf("The sum of complex numbers=%d+i(%d)\n",realsum,imgsum);
}

void sub(int r1,int ip1, int r2,int ip2)
{
    int realsub,imgsub;
    realsub=r1-r2;
    imgsub=ip1-ip2;
    printf("The subtraction of complex numbers=%d+i(%d)\n",realsub,imgsub);
}

```

```

void mul(int r1,int ip1, int r2,int ip2)
{
    int realmul,imgmul;
    realmul=r1*r2;
    imgmul=ip1*ip2;
    imgmul1=r1*ip2;
    imgmul2=r2*ip1;
    printf("The multiplication of complex numbers=
%d+i(%d+%d)%d\n",realmul,imgmul1,imgmul2,imgmul);
}

```

```

void add(int r1,int ip1, int r2,int ip2)
{
    int realsum,imgsum;
    realsum=r1+r2;
    imgsum=ip1+ip2;
    printf("The sum of complex numbers=%d+i(%d)\n",realsum,imgsum);
}

```

7. Write a program which will read a line and delete from it all occurrences of the word "that".

Ans:

```

#include<stdio.h>
#include<conio.h>
void main()
{
    char str[]="I that love c that programming.";
    int i;
    for(i=0;str[i]!='\0';i++)
    {
        if(str[i]==116&&str[i+1]==104&&str[i+2]==97&&str[i+3]==116&&str[i+4]==32)
        {
            for(;str[i+5]!='\0';i++)
                str[i]=str[i+5];
            str[i]='\0';
            i=0;
        }
    }
    printf("%s",str);
    getch();
}

```

8. What is a pointer and explain its applications? Write a program that uses pointers to copy an array of double.

Ans:

A pointer is a variable, which contains the address of another variable in memory. We can have a pointer to any variable type pointers are said to “point to “the variable whose reference they store.

```
#include<stdio.h>
#include<conio.h>
double *copy(double a[],int n);
void main()
{
    double a[10],*b;
    int i;
    for(i=0;i<10;i++)
    {
        scanf("%lf",&a[i]);
    }
    b=copy(a,10);
    for(i=0;i<10;i++)
    {
        printf("\n%lf",b[i]);
    }
    getch();
}
double *copy(double a[], int n)
{
    double *p;
    int i;
    for(i=0;i<10;i++)
    {
        p[i]=a[i];
    }
    return p;
}
```

9. Define a structure of employee having data members name, address, age, and salary. Take data for n employee in an array dynamically and find the average salary.

Ans:

```
#include <stdio.h>
#include<conio.h>
#include<alloc.h>
struct employee
{
    char name[50];
    char add[50];
    int age;
    int salary;
};
```

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```

void main()
{
    struct employee *p;
    int i, n;
    float avg,sum=0;
    printf("Enter the number of employee:");
    scanf("%d", &n);
    p=(struct employee *) calloc (n,sizeof(struct employee));
    if(p==NULL)
        exit();
    for(i=0;i<n;i++)
    {
        fflush(stdin);
        printf("Enter name:");
        gets((p+i)->name);
        printf("Enter address:");
        gets((p+i)->add);
        printf("Enter age:");
        scanf("%d",&(p+i)->age);
        fflush(stdin);
        printf("Enter salary:");
        scanf("%d",&(p+i)->salary);
    }
    for(i=0;i<n;i++)
    {
        sum=sum+(p+i)->salary;
    }
    avg=sum/n;
    printf("Average salary=%f",avg);
    getch();
}

```

10. Given a text file, create another text file deleting the following words “three”, “bad”, and “time”.

OR

Why do you require graphical function? Explain the basic graphical function with suitable program.

Ans:

```

#include<stdio.h>
#include<conio.h>
void main()
{
    FILE *fp;
    char str;
    fp=fopen("old.txt","r+");
    while(fscanf(fp,"%s",str)!=EOF)
    {
        if(strcmp(str,"three")==0 | strcmp(str,"bad")==0 | strcmp(str,"time")==0)
        {
            printf("");
        }
    }
}

```

```
        else
            printf("%s ",str);
    }
fclose(fp);
getch();
}
```

OR

Graphical function in c is used to implement various graphical symbols and shapes. There are various types of graphics function used. Such as

- a. Line(x1,y1,x2,y2)

This function is to draw line from (x1,y1) to (x2,y2)

- b. Circle(x,y,r)

This function is to draw circle of radius r and center (x,y)

- c. arc(int x, int y, int stangle, int endangle, int radius);

arc function is used to draw an arc with center (x,y) and stangle specifies starting angle, endangle specifies the end angle and last parameter specifies the radius of the arc. arc function can also be used to draw a circle but for that starting angle and end angle should be 0 and 360 respectively.

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