C PROGRAMS WITH READABLE AND REUSABLE

NAME :- MAYANK SRIVASTAV

SECTION :- G1M

ROLL NO. :- 65

Area and circumference of circle

Step 1

a=22

b=2 3.14*a*
b=138.16

*c=3.14*a*a*
c=1519.76

Step 2

Float a=22;

Float b=2 3.14*a;*
Float b=138.16;

*Float c=3.14*a*a;*
Float c=1519.76;

Step 3

```c
#include<stdio.h>

int main(){

   float a=22;
   float b=2* 3.14*22;
   float c=3.14*22*22;

   printf("\n circumference of circle = %f",&b);

   printf("\n area of circle = %f",&c);

   return 0;

   }
```

Step 4

```c
#include<stdio.h>

int main(){

   float radius = 22;

   float circumference  = 2* 3.14*radius;

   float area = 3.14*radius*radius;

   printf("\n circumference of circle = %f", &circumference );

   printf("\n area of circle = %f", &area);

   return 0;

   }
```

Step 5

```
int main(){

   float radius;
   printf("\n enter the radius; ");
   scanf("%f", &radius);

   float circumference  = 2* 3.14*radius;

   float area = 3.14*radius*radius;

   printf("\n circumference of circle = %f", &circumference );

   printf("\n area of circle = %f", &area);

   return 0;

   }
```

Step 6

```
nt main(){

   float radius;

   printf("\n enter the radius; ");
   scanf("%f", &radius);

   float circumference  = 2* 3.14*radius;

   float area = 3.14*radius*radius;

   printf("\n circumference of circle = %f", &circumference );

   printf("\n area of circle = %f", &area);

   return 0;

   }
```

Changing the temperature

Step 1

a=273

*b=(a*9)/5+32*
b=523.4

Step 2

Float a = 273

Float b = *(a*9)/5+32*
Float b = 523.4

Step 3

```c
#include<stdio.h>

int main(){


   float a = 273;

   float b = (a*9)/5+32;

   printf("temperature in fahrenheit: %f", b);

   return 0;

}
```

Step 4

```c
#include<stdio.h>

int main(){


   float temperatureInCentigrade = 273;

   float temperatureInFahrenheit = (temperatureInCentigrade*9)/5+32;

   printf("temperature in fahrenheit: %f", temperatureInFahrenheit);

   return 0;

}
```

Step 5

```c
#include<stdio.h>

int main(){


   float temperatureInCentigrade ;
   printf("\n enter the temperature in centigrade: ");
   scanf("%f" , &temperatureInCentigrade);

   float temperatureInFahrenheit = (temperatureInCentigrade*9)/5+32;

   printf("\n temperature in fahrenheit: %f", temperatureInFahrenheit);

   return 0;

}
```

Step 6

```c
#include<stdio.h>

int main(){


   float temperatureInCentigrade ;

   printf("\n enter the temperature in centigrade: ");
   scanf("%f" , &temperatureInCentigrade);

   float temperatureInFahrenheit = (temperatureInCentigrade*9)/5+32;

   printf("\n temperature in fahrenheit: %f", temperatureInFahrenheit);

   return 0;

}
```

To check whether the two numbers equal or not.

Step 1

a=6
b=6
a=b

Step 2

Int a=6;
Int b=6;
Int a=b;

Step 3

```c
#include<stdio.h>

int main() {

   int a = 6;
   int b = 6;

   if(a==b)
   printf(" \n  both a and b are equal : ");
   else
       printf(" \n both a and b are not equal : ");

   return 0;

   }
```

Step 4

```
#include<stdio.h>

int main() {

   int firstNum = 6;
   int  secondNum = 6;

   if(firstNum == secondNum )
   printf(" \n  both firstNum and secondNum are equal : ");

   else
       printf(" \n both firstNum and secondNum are not equal : ");

   return 0;

   }
```

Step 5

```
#include<stdio.h>

int main() {

   int firstNum ;
   printf(" enter the firstNum :");
   scanf("%d", &firstNum );

   int  secondNum ;
   printf(" enter the secondNum :");
   scanf("%d", &secondNum );

   if(firstNum == secondNum )
   printf(" \n  both firstNum and secondNum are equal : ");

   else
       printf(" \n both firstNum and secondNum are not equal : ");

   return 0;

   }
```

Step 6

```c
#include<stdio.h>

int main() {

   int firstNum, secondNum ;

   printf(" enter the firstNum :");
   scanf("%d", &firstNum );

   printf(" enter the secondNum :");
   scanf("%d", &secondNum );

   if(firstNum == secondNum )
   printf(" \n  both firstNum and secondNum are equal : ");

   else
       printf(" \n both firstNum and secondNum are not equal : ");

   return 0;

   }
```

To find whether the number is even or odd

Step 1

a=5
If a%2==0
a is even
else
a is odd

Step 2

Int a=5;
If a%2==0
a is even ;
else
a is odd ;

Step 3

```c
#include<stdio.h>

int main(){

   int a=5;

   if (a % 2==0)
  printf(" a is even: ") ;
   else
   printf("a is odd") ;

   return 0;

}
```

Step 4

```
}#include<stdio.h>

int main(){

   int checkNum = 5;

   if  (checkNum % 2==0 )
  printf(" checkNum is even: ") ;
   else
   printf("checkNum is odd") ;

   return 0;
```

Step 5

```
#include<stdio.h>

int main(){

   int checkNum ;
   printf("enter the number to check even or odd:");
   scanf("%d", &checkNum);

   if  (checkNum % 2 == 0 )
  printf(" checkNum is even: ") ;

  else
   printf("checkNum is odd") ;

   return 0;

}
```

Step 6

```c
#include<stdio.h>

int main(){

   int checkNum ;

   printf("enter the number to check even or odd:");
   scanf("%d", &checkNum);

   if  (checkNum % 2 == 0 )
  printf(" checkNum is even: ") ;

  else
   printf("checkNum is odd") ;

   return 0;

}
```

To check year is leap year or not

Step 1

```
a  = 2005

If ( (a%400==0)||(a%4==0 && a%100!=0)
 a is leap year

else
 a is not a leap year
```

Step 2

```
float  a = 2005

If ( (a%400==0)||(a%4==0 && a%100!=0)
 a is leap year

else
 a is not a leap year
```

Step 3

```
#include<stdio.h>

int main(){

   int  b = 2005;

   if (( b% 400 == 0 )|| ( b % 4 == 0 && b % 100 != 0) )
   printf("b is leap year");

   else
   printf(" b is not a leap year");

   return 0;}
```

Step 4

```
#include<stdio.h>

int main(){

   int  year = 2005;

   if (( year % 400 == 0 )|| ( year % 4 == 0 && year % 100 != 0) )
   printf("year is leap year");

   else
   printf(" year is not a leap year");

   return 0;}
```

Step 5

```
#include<stdio.h>

int main(){

   int  year ;
   printf(" enter the year to check leap year: ");
   scanf("%d" , &year);

   if (( year % 400 == 0 )|| ( year % 4 == 0 && year % 100 != 0) )
   printf("year is leap year");

   else
   printf(" year is not a leap year");

   return 0;}
```

Step 6

```
#include<stdio.h>

int main(){

   int  year ;

   printf(" enter the year to check leap year: ");
   scanf("%d" , &year);

   if (( year % 400 == 0 )|| ( year % 4 == 0 && year % 100 != 0) )
   printf("year is leap year");

   else
   printf(" year is not a leap year");

   return 0;}
```

Maximum in three numbers

Step 1

a=34
b=45
c=32
b>a>b

Step 2

Int a=34;
Int b=45;
Int c=32;
b>a>b

Step 3

```c
#include<stdio.h>

int main(){

   int a = 34;
   int b = 45;
   int c = 32;

   if (b>a && b>c)
   printf(" \n b is greatest among three: ");

   else if (a>b && a>c)
   {printf(" \n a is greatest among three: "); }

   else
   printf(" \n c is greatest among three: ");


   return 0;

   }
```

Step 4

```
#include<stdio.h>

int main(){

   int firstNum = 34;
   int secondNum = 45;
   int thirdNum = 32;

   if (secondNum > firstNum && secondNum > thirdNum)
   printf(" \n secondNum is greatest among three: ");

   else if (firstNum > secondNum && firstNum > thirdNum)
   {printf(" \n firstNum is greatest among three: "); }

   else
   printf(" \n thirdNum is greatest among three: ");

   return 0;

   }
```

Step 5

```c
#include<stdio.h>

int main(){

   int firstNum ;
   printf(" enter the first Number: ");
   scanf("%d", &firstNum );

   int secondNum ;
   printf(" enter the second Number: ");
   scanf("%d", &secondNum) ;

   int thirdNum ;
   printf(" enter the third Number: ");
   scanf("%d", &thirdNum);


   if (secondNum > firstNum && secondNum > thirdNum)
   printf(" \n secondNum is greatest among three: ");

   else if (firstNum > secondNum && firstNum > thirdNum)
   {printf(" \n firstNum is greatest among three: "); }

   else
   printf(" \n thirdNum is greatest among three: ");

   return 0;

   }
```

Step 6

```c
#include<stdio.h>

int main(){

   int firstNum , secondNum, thirdNum;

   printf(" enter the first Number: ");
   scanf("%d", &firstNum );

   printf(" enter the second Number: ");
   scanf("%d", &secondNum) ;

   printf(" enter the third Number: ");
   scanf("%d", &thirdNum);

   if (secondNum > firstNum && secondNum > thirdNum)
   printf(" \n secondNum is greatest among three: ");

   else if (firstNum > secondNum && firstNum > thirdNum)
   printf(" \n firstNum is greatest among three: ");

   else
   printf(" \n thirdNum is greatest among three: ");

   return 0;

   }
```

Percentage of five subjects

Step 1

a=76
b=78
c=90
d=92
e=76

Step 2

Int a=76
Int b=78
Int c=90
Int d=92
Int e=76

Step 3

```
include<stdio.h>

int main() {

   int a=76;
   int b=78;
   int c=90;
   int d=92;
   int e=76;

   int sum=a+b+c+d+e;
   float p=(((float)sum*100)/500);

   printf("percentage:%f=",p);

   return 0;
}
```

Step 4

```c
#include<stdio.h>

int main() {

   int maths = 76;
   int physics = 78;
   int english = 90;
   int chemistry = 92;
   int biology = 76;

   int sum = maths + physics + english + chemistry + biology;
   float percentage=( ((float) sum*100 ) /500);

   printf("percentage:%f=",percentage);

   return 0;
}
```

Step 5

```c
#include<stdio.h>

int main() {

   int maths;
   printf("enter the maths marks: ");
   scanf("%d", &maths);

   int physics;
   printf("enter the physics marks: ");
   scanf("%d", &physics);

   int english;
   printf("enter the english marks: ");
   scanf("%d", &english);

   int chemistry;
   printf("enter the chemistry marks: ");
   scanf("%d", &chemistry);

   int biology;
   printf("enter the biology marks: ");
   scanf("%d", &biology);


   int sum = maths + physics + english + chemistry + biology;
   float percentage=( ((float) sum*100 ) /500);

   printf("percentage obtained :%f=",percentage);

   return 0;
}
```

Step 6

```c
#include<stdio.h>

int main() {

   int maths, physics, english, chemistry, biology, sum, percentage;

   printf("enter the maths marks: ");
   scanf("%d", &maths);

   printf("enter the physics marks: ");
   scanf("%d", &physics);

   printf("enter the english marks: ");
   scanf("%d", &english);

   printf("enter the chemistry marks: ");
   scanf("%d", &chemistry);

   printf("enter the biology marks: ");
   scanf("%d", &biology);

   sum = maths + physics + english + chemistry + biology;

   percentage=( ( sum*100 ) /500);

   printf("percentage obtained :%d=",percentage);

   return 0;
}
```

Result

Step 1

a=76
b=78
c=90
d=92
e=76
sum=a+b+c+d+e
p=(sum/500)*100
If p>=90 and p<=100
Grade ‘A’
If p>=80 and p<90
Grade ‘B’
If p>=60 and p<80
Grade ‘C’
If p<60
Grade ‘D’

Step 2

Float a=76;
Float b=78;
Float c=90;
Float d=92;
Float e=76;
Float sum=a+b+c+d+e;
p=(sum/500)*100;
If p>=90 and p<=100
Grade ‘A’
If p>=80 and p<90
Grade ‘B’
If p>=60 and p<80
Grade ‘C’
If p<60
Grade ‘D’

Step 3

```
#include<stdio.h>

int main(){

   float a=76;
   float b=78;
   float c=90;
   float d=92;
   float e=76;

   float sum=a+b+c+d+e;
   float p=(sum/500)*100;

   if ("p>=90 and p<=100")
   {printf("Grade 'A' ");}

   else if ("p>=80 and p<90")
   {printf("Grade 'B' ");}

   else if ("p>=60 and p<80")
   {printf("Grade 'C' ");}

   else
   {printf("Grade 'D' ");}

   return 0;

   }
```

Step 4

```
#include<stdio.h>

int main() {

  float maths = 76;
  float physics = 78;
  float english = 90;
  float chemistry = 92;
  float biology = 76;

  float sum = maths + physics + english + chemistry + biology;
  float percentage= ((sum*100 ) /500);

  printf("percentage:%f=",percentage);

   if (" percentage >=90 and p<=100")
   {printf("Grade 'A' ");}

   else if ("percentage >=80 and p<90")
   {printf("Grade 'B' ");}

   else if ("percentage >=60 and p<80")
   {printf("Grade 'C' ");}

   else
   {printf("Grade 'D' ");}

   return 0;

   }
```

Step 5

```
#include<stdio.h>

int main() {

  float maths;
  printf("enter the maths marks: ");
  scanf("%f", &maths);

  float physics;
  printf("enter the physics marks: ");
  scanf("%f", &physics);

  float english;
  printf("enter the english marks: ");
  scanf("%f", &english);

  float chemistry;
  printf("enter the chemistry marks: ");
  scanf("%f", &chemistry);

  float biology;
  printf("enter the biology marks: ");
  scanf("%f", &biology);

  float sum = maths + physics + english + chemistry + biology;
  float percentage= (( sum*100 ) /500);


  printf("percentage:%f=",percentage);

   if (" percentage >=90 and p<=100")
   {printf("Grade 'A' ");}

   else if ("percentage >=80 and p<90")
   {printf("Grade 'B' ");}

   else if ("percentage >=60 and p<80")
   {printf("Grade 'C' ");}

   else
   {printf("Grade 'D' ");}

   return 0; }
```

Step 6

```
#include<stdio.h>

int main() {

   float maths, physics, english, chemistry, biology, sum, percentage ;

   printf("enter the maths marks: ");
   scanf("%f", &maths);

   printf("enter the physics marks: ");
   scanf("%f", &physics);

   printf("enter the english marks: ");
   scanf("%f", &english);

   printf("enter the chemistry marks: ");
   scanf("%f", &chemistry);

   printf("enter the biology marks: ");
   scanf("%f", &biology);

   sum = maths + physics + english + chemistry + biology;
   percentage= (( sum*100 ) /500);

   printf("percentage:%f=",percentage);

   if (" percentage >=90 and p<=100")
   {printf("Grade 'A' ");}

   else if ("percentage >=80 and p<90")
   {printf("Grade 'B' ");}

   else if ("percentage >=60 and p<80")
   {printf("Grade 'C' ");}

   else
   {printf("Grade 'D' ");}

   return 0; }
```

Swapping the values of two numbers using third variable

Step 1

```
a=4
b=3

c=b
b=a
a=c

a=3
b=4
```

Step 2

```
Int a=4
Int b=3

Int c=b
 b=a
a=c

a=3
b=4
```

Step 3

```
#include<stdio.h>

int main(){

   int a = 4;
   int b = 3;

   int c = b;
   b = a;
   a = c;

   printf("\n swapping value of a =%d", a);

   printf("\n swapping value of b =%d", b);

   return 0;

   }
```

Step 4

```c
#include<stdio.h>

int main(){

   int firstNum = 4;
   int secondNum = 3;

   int thirdNum = secondNum;
   secondNum = firstNum;
   firstNum = thirdNum;

   printf("\n value of firstNum after swapping =%d", firstNum);

   printf("\n value of secondNum after swapping =%d", secondNum);

   return 0;

   }
```

Step 5

```c
#include<stdio.h>

int main(){

   int firstNum;
   printf("enter the first number; ");
   scanf("%d" , &firstNum);

   int secondNum;
   printf("enter the second number; ");
   scanf("%d" , &secondNum);



   int thirdNum = secondNum;
   secondNum = firstNum;
   firstNum = thirdNum;

   printf("\n value of firstNum after swapping =%d", firstNum);

   printf("\n value of secondNum after swapping =%d", secondNum);

   return 0;

   }
```

Step 6

```c
#include<stdio.h>

int main(){

   int firstNum, secondNum, thirdNum;

   printf("enter the first number; ");
   scanf("%d" , &firstNum);

   printf("enter the second number; ");
   scanf("%d" , &secondNum);


   thirdNum = secondNum;
   secondNum = firstNum;
   firstNum = thirdNum;

   printf("\n value of firstNum after swapping =%d", firstNum);

   printf("\n value of secondNum after swapping =%d", secondNum);

   return 0;

   }
```