Assignment III

Ashwani Kr. Chaudhary
019 BCT-AJ.

1) WAP to check if a given no. is even or odd.

```
#include <stdio.h>
#include <conio.h>
int main()
    {
        int a;
        printf ("Enter a no.=");
        scanf ("%d", &a);
        If (a%2==0);
    {
        print f("The no. is even");
    }
    Else { print f("The no. is odd");
            }
    return 0;
    getch ();
}
```

3) WAP to read three no. from user and determine the largest among them

```
#include <stdio.h>
#include <conio.h>
int main()
    {
        int a,b,c;
        printf ("Enter A ");
        scanf ("%d", &a);
        Printf ("Enter B ");
        scanf ("%d", &b");
```

```
printf ("Enter c");
scanf ("%d", &c);
if ((a>b) && (a>c))
printf ("A is the greatest");
else if ((b>c) && (b>a))
printf ("B is the greatest");
else,
printf ("C is the greatest");
return 0;
}
```

2) WAP to check if given no. is +ve or -ve

```
#include <stdio.h>
#include <conio.h>
int main() {
  int a;
  printf ("Enter a no.: ");
  scanf ("%d", &a);
  if (a>=0)
  {
    if (a==0)
  }
  { printf ("The no. is zero.");
  }
else {
  printf ("The no. is positive");
  }
  else {
    printf ("The no. is negative");
  }
return 0;
}
```

4) WAP to read the precentage of a student the determine the division using following condition Percent greater than or equal to 80 -> Distinction Percent greater than or equal to 60 below 80 -> First div percent btn 45 & below 60 -> second division. percent btn 32 & below 45 -> Third division percent less than 32 fail.

```
#include <stdio.h>
int main() {
    Float percent;
    printf("Enter percentage :");
    scanf("%f", &percent);
    if percent (>32)
    {   if percent >= 80)
     printf("You have scored distinction");
    else if (percent >= 60 && percent < 80)
    {  printf("You have scored first division.");
     } else if (percent >= 45 && percent < 60).
     { printf("You have scored second division");
     }
    else if (percent >= 32 && percent < 45)
     { printf("You have scored third division.");
     }
     }
     else { printf "You have failed");
        }
     return 0;
    }
```

5) WAP to calculate factorial of number.

```
# include <stdio.h>
# include <conio.h>
 int main {
    int n, i, j.
    unsinged long long .fact = 1;
    printf (" Enter an integer ;");
    scanf ("%d", &n);
    if (n<0).
      printf(" Error!. factorial doesn't exist ").
    else {
        for (i=1; i<=n; ++i)
        {   fact = fact * i
          }
          print f(" Factorial of %d = %lld ", n, fact);
          }
       return 0;
    }
```

6) WAP to ask integer no: n & calculate sum of all natural no. from 1 to n.

```
# include <stdio.h>
# include <conio.h>
 int main ( ) {
    int num count=1, sum=0;
    printf ("Enter an integer:");
    scanf ("%d", &num);
    while (count <= num)
    {
```

```
    sum = sum + count;
    count++;
  }
  printf("The sum is %d", sum);
  return 0;
}
```

7) WAP to the add two no. & display their sum. The program must ask next two number & add until user wants.

```
#include<stdio.h>
int main() {
    int x, y, sum;
    char ch;
    do {
      printf("Enter a no.");
      scanf("%d", &x);
      printf("Enter an another no.");
      scanf("%d", &y);
      sum = x+y
    printf("The total sum is %d", sum);
    printf("Do you want to re-enter (Y/N):");
    scanf("%c", &ch);
    }
    while(ch=='Y' || ch=='N');
return 0;
}
```

8) WAP to read a no. from key board until zero or negative no. is keyed. Finally calculate the sum & average of entered no.

```
# include <stdio.h>
# include <conio.h>
  void main ( ) {
     int num, sum=0;
     char ch;
     do {
        print f("Enter a number");
        scanf("%d", & num);
        sum = sum + num;
        print f("Press y to continue");
        ch = getch ();
     } while ( ch == 'y' )
     avg = (float) sum / c
     print f("sum = %d \n
        Avg = %.2f", sum, avg.);
     getch ();
  }
```

9) WAP to ask a number to user & add another number till user wants.

```
#include <stdio.h>
int main ( ) {
    int num, sum = 0 ;
    char ch;
    do
    {
        printf ( " Enter a number " ) ;
        scanf ( " %d " , & num ) ;
        sum = num ;
        printf ( " The sum is %d " , sum ) ;
        printf ( " Do you want to continue ? (Y/N) ;
        scanf ( " %c " , & ch ) ;
    }
    while ( ch == 'y' || ch == 'N' ) ;
    getch ( ) ;
}
```

10) WAP to determine whether a number is prime or not.

```
# include <stdio.h>
# include <conio.h>
int main( ) {
    int n, i, flag = 0;
    printf ("Enter a positive integer");
    scanf ("%d", &n);
    for (i=2 ; i<=n/2 ; i++)
    {
      if (n%i==0)
    3
        flag = 1;
        break;
    }
    {
      if (n == 1) {
    printf ("1 is neither prime nor composite");
    }
  else. { if (flag==0)
    print f ("%d is a prime number", n);
  else
    print f ("%d is not a prime number", n);
    }
  return 0;
    }.
```

11) WAP that read two no. & an arithmetic operator (+, -, *, /, %.) & perform the operation as per operator supplied using switch case.

```
#include <stdio.h>
int main() {
  int a, b, sum, mul, diff, rem, div;
  char opr;
  printf("Enter two number");
  scanf("%d %d", &a &b);
  printf("Enter operator");
  scanf("%c", &opr);
  fflush(stdin);
  switch(opr)
{
   case '+'
   sum = a+b;
   printf("Sum is %d", sum);
   break;

   case '-'
   diff = a-b;
   printf("diff is %d", diff);
   break;

   case '*'
   mul = a*b;
   printf("Product is %d", mul);
   break;
   case '/'
   div = a/b;
   printf("division is %d", div);
   break;
```

```
case '%':
rem = a % b;
printf ("Rem. is %d", rem);
break;

default;
printf ("operator is not valid");

return 0;
}
}
```

2) WAP to read a character from keyboard & convert it into uppercase if it is in lower case & vice verce.

```
#include <stdio.h>
void main () {
    char a;
    printf ("Enter a character");
    a = getchar ();
    if (a >= 65 && a <= 90)
    {
      a = a + 32;
    }
else if (a >= 97 && a <= 122).
{     a = a - 32;
    }
else {
    printf ("The letter is invalid");
}.
    printf ("%c", a);
return 0;
}
```

13) ~~WAP to~~ the montly electricity bill is computed min. Rs 80/- for upto 200 units Rs. 7.30 per units for next 100 units Rs 9.00 per units for beyond 120 units. WAP to compute monthly bill for given number of unit by consumer.

```
# include <stdio.h>
  float cost = 0;
   float i = 1;
int main () {
     float units;
    printf ("Enter units consumed");
    scanf ("%f", &units);
    float ch = units;
    for (i; i<=ch; i++) {
       if      {
         For      if (i<=20) {
                      cost = 80; }
      else if (i>20) && (i<=120) {
       cost = cost + 7.30 * cost;
      }. else { cost = cost + 9 * cost;
       } } printf ("%f", cout"}
    return 0;
}
```

14) A Bank has introduced an incentive policy. A bonus of 2% of balance is given to everyone irrespective of their balance & 5% is given to female account holder if their balance is more than 500 %. Write a program to represent this policy & calculate balance after bonus.

```
#include <stdio.h>
float main ()
{
    float salary, gender, net;
    printf ("Enter your salary: ");
    scanf ("%f", &salary);
    printf ("Enter 1 for male & 2 for female");
    scanf ("%f", &gender);
    if (gender == 2)
{
    if (salary >= 5000)
{
    net = (salary * 0.05) + salary;
    printf ("Net salary is %f", net); }
    else {
        net = (salary * 0.02) + salary;
    printf ("Net salary is %f", net);
    } }
    else {
        net = (salary * 0.02) + salary;
        printf ("Net salary is %f", net);
        }
return 0;
}
```

15) WAP to print ASCII value of all charaters.

```
#include <stdio.h>
int main(){
    char c;
    printf("Enter a character");
    scanf("%c", &c);
    printf("ASCII value of %c = %d", c, c);
    return 0;
}
```

16) WAP to generate fibonacci series of n term enter by user.

```
#include <stdio.h>
int main() {
    int a, b, c, i, n;
    printf("Enter a number");
    scanf("%d", &n);
    a = b = 1;
    printf("%d %d", a, b);
    for (i = 1; i <= n-2; i++) {
        c = a+b;
        printf("%d", c);
        a = b;
        b = c;
    }
    return 0;
}
```

17) WAP to compute sum of digit of a given integer no.

```
#include <stdio.h>
int main() {
    int n, sum = 0, m;
    printf("Enter a number");
    scanf("%d", &n);
    while (n>0)
    {
    m = n%10;
    sum = sum + m;
    n = n/10;
    }
    printf("Sum is %d", sum);
    return 0;
}
```

19) WAP to reverse the digit of a number.

```
#include <stdio.h>
int main() {
    int num, a, b, c;
    printf("Enter a number");
    scanf("%d", &num);
    a = num/100;
    b = (num%100)/10;
    c = num%10;
    int reverse = c*100 + b*10 + a;
    printf("The reversed order is %d", reverse);
    return 0;
}
```

18) WAP to compute sum of digits a given integer number till single digit is obtained

```
#include <stdio.h>
int main ( ) {
    int num;
    int sum = 0, rem;
    printf ("Enter a number");
    scanf ("%d", &num);
    while (num / 10 != 10)
{
    sum = 0;
    while (num != 0)
    {
      rem = num % 10;
      sum = rem;
      num = num / 10;
    }
      num = sum;
    }
printf ("The sum is %d", sum);
 return 0;
}
```

23) WAP to find cubes & sq. of first 10 natural numbers.

```
#include <stdio.h>
int main () {
    int i,n, sum=0;
    printf("Input the no. :");
    scanf("%d",&n);
    for (i=1; i<=n; i++)
    {
    printf(" square is %d "; i*i);
    printf(" Cube is %d", i*i);
     }
    return 0;
    }
```

24) WAP to read a number & check it for palindr

```
#include <stdio.h>
int main () {
    int n, rev=0, rem, org;
    printf("Enter a number");
    scanf("%d", &n);
    org = n;
while (n!=0) {
    rem = n%10;
    rev = rev*10 + rem;
    n!=10; }
if (org == rev)
printf("%d is a palindrome number", org);
else printf("%d is not a palindrome number.", org);
return 0;
}
```

(21) WAP to check entered no. is perfect or not.

```
#include <conio.h>
#include <stdio.h>
int main()
{
    int i, Num, sum = 0;
    printf("\n Please enter any no. \n");
    scanf("%d", &Num);
    for (i = 1; i < Num.; i++)
    {
        if (Num. % i == 0)
        sum = sum + i;
    }.
    If (sum == Num).
    printf("%d is a Perfect No.", Num);
    else.
    printf("%d is not Perfect No.", Num);
    return 0;
}
```

loop.

(22) WAP to check if the entered no. is strong or not.

```
#include <conio.h>
#include <stdio.h>
int main()
{
    int num, i, f, r, sum = 0, temp;
    printf ("enter a no.:");
    scanf ("%d", &num);
    temp = num;
    while (num != 0){
            i = 1, f = 1
            r = num % 10;
            while (i <= r) {
                f = f * i
                i++
            }
        sum = sum + f;
        num = num / 10;
    }
    if (sum == temp)
    printf ("%d is a strong no.", temp); else
    printf ("%d is not strong no.", temp);
    return 0;
}
```

23) To print prime no. betn 1 to n.

```
#include <stdio.h>
#include <conio.h>
int main()
{
    int i, j, end, isprime;
    printf("Find prime no. betn 1 to : ");
    scanf("%d", &end);
    printf("All prime no. betn 1 to %d ax : \n", end);
    for (i=2; i<=end; i++).
    {
        isPrime = 1;
        for (j=2; j<=i/2; j++)
        {
            if (i%j==0)
            {
                isprime = 0;
            } break;
            }
    }
    if (isprime == 1)
    {
        printf("%d,", i);
    }
}
return 0.
getch();
```

25) WAP to check if the entered number is Armstrong or not

```
#include <stdio.h>
#include <conio.h>
int main() {
int num, original, rem, sum = 0, n = 0;
printf ("Enter a number.");
scanf ("%d", &num);
while (org != 0)
{
original /= 10;
++n; }
original = num;
while (original != 0)
{ rem = original %. 10;
sum += pow(rem, n);
original /= 10;
}
if (sum == num)
printf ("%d is an Armstrong number", num);
else printf ("%d is not an Armstrong number.", num);
return 0;
}
```

26) WAP to convert decimal no. to its binary numbers.

```
#include <stdio.h>
int main()
{
  int n, c, k;
  printf ("Enter an integer in decimal \n");
  scanf ("%d", &n);
  Printf ("Ente %d is binary is : \n", n);
  for (c = 31; c >= 0; c--)
  {
    k = n >> c;
    if (k & 1)
      printf ("1");
    else
      printf ("0");
  }
  printf ("\n");
  return 0;
}
```

27) WAP to convert binary number to decimal number.

```
#include <stdio.h>
#include <math.h>
int main() {
    int num, rem, bin, dec=0, i=0;
    printf("Enter the binary number");
    scanf("%d", &bin);
    num = bin
    while (bin != 0)
    {
    rem = bin % 10;
    bin = bin / 10;
    dec += rem * pow(2,i); ++i;
    }
printf("The decimal number is %d", dec);
return 0;
}
```

28) WAP to read two number from user & find HCF & LCM

```
#include <stdio.h>
int main() {
    int a, b, min, hcf;
printf("Enter a number.");
scanf("%d", &a);
printf("Enter another number");
scanf("%d", &b);
    if (a<b) {
        min = a;
```

```
} else {
    min = b; }
for (int i = 1; i <= min; i++) {
if ((a%. i==0) & & (b%. i==0)) }
    hcf = i;
    }
}
printf("hcf = %d", hcf);
  int lcm = a*b / hcf;
printf("lcm = %. d", lcm);
return 0;
}.
```

30) WAP to print armstrong number betn n1 & n2. where n1 & n2 is entered by user.

```
#include <stdio.h>
int main () {
    int n1, n2, num, original, rem, count = 0;
    double result = 0.0;
    printf("Enter two number");
    scanf ("%.d, & n1 & n2);
    printf ("Armstrong no. betn %d & %. d are" n1, n2);
for (num = n1 + 1; num < n2 ; ++num)
    {
      original = num;
while (original != 0){
        original /= 10;
          ++ count;
    }
    original = num;
```

```
while (orginal != 0)
    { rem = original % 10;
      result += pow(rem, count);
      original /= 10;
    }
if ((int) result == num) {
   printf(" %d", num);
}
   count = 0;
   result = 0;
}
return 0;
}
```

31) WAP to print perfect numbers betn n1 & n2

```
#include <stdio.h>
int main () {
   int num, i, n1, n2, sum;
printf ("Enter two number ");
scanf ("%d %d", &n1, &n2);
printf ("Perfect num betn %d &%d are", n1, n2);
for (num = n1; num <= n2; num++)
   {  sum = 0
   for (i = 1; i <= num / 2 ; i++)
      { if (number % i == 0)
         { sum += i;
           }
      }
        if (sum == num)
      }
```

```
        printf ("%d ", num);
            }
    }
    return 0;
}
```

32. WAP to print all strong number betn n1 & n2.

```
#include <stdio.h>
int factorial (int);
void main() {
    int n1, n2, i, k, rem, strong;
    printf("Enter two number");
    scanf ("%d", &n1, &n2);
    printf ("strong number betn %d & %d are", n1, n2);
    for (i=n1; i<=n2; i++)
    { k = i;
      strong = 0;
      while (k>0)
      {
      rem = k%10;
      strong = strong + factorial (rem);
          k = k/10;  }
      if (i == strong)
      printf("%d", i);
    }
    int factorial (int r).
    { int f, f=1;
      for (i=r; i>=1; i--).
        {  f = f*i;  }
      return 0;
    }
```

29) WAP to print all the prime no. betn n1 and n2 (where n1 and n2 is entered by user.

```
#include <stdio.h>
#include <conio.h>
int main()
{
    int i, j, start, end;
    int is_prime;
    printf(" Enter lower limit: ");
    scanf("%d", &start);
    printf(" Enter upper limit: ");
    scanf("%d", &end);
    printf(" All prime no. betn %d to %d are: \n", start, end);
    if (start < 2)
        start = 2;
    for (i = start; i <= end; i++)
    {
        is_prime = 1;
        for (j = 2; j <= i/2; j++)
        {
            if (i % j == 0)
            {
                is_prime = 0;
                break;
            }
        }
        if (is_prime == 1)
        {
            printf("%d ", i);
        }
    }
return 0;
}
```

33) WAP to read set of numbers & calculate its minimum & maximum values.

```
#include<stdio.h>
void main().
{
int num, min, max;
  char choice='n';
printf(" Press any key to continue");
  getch();
printf(" Enter a number ");
  scanf("%d", &num);
printf ("y to continue, other to exit");
  choice = toupper(getch());
  min = max = num;

while (choice == 'y').
{ system("cls");
  printf(" Enter a number ");
  scanf("%d", &num);
  If (num > max) {
        max = num;
} else if (num < min) {
        min = num; }
printf("y to continue, other keys to exit");
        choice = toupper(getch());
  }
printf("Hightest = %d", max);
printf("lowest == %d", min);
return 0;
}
```

34. WAP to find roots of quadratic equations (both imaginary & real).

```
#include<stdio.h>
void main ()
{
    float a,b,c,d,r1,r2,rp,ip;
printf("Roots are real & unequal");
    r1 = -b + sqrt(d) / (2*a);
    r2 = -b - sqrt(d) / (2*a);
printf("Enter the coeff of a,b,& c");
scanf("%f %f %f", &a, &b, &c);
    d = pow(b,2) - 4*a*c;
    if (d>0)
{   printf("Roots are real & unequal");
    r1 = -b + sqrt(d) / (2*a);
    r2 = -b - sqrt(d) / (2*a);
printf("The roots are %f %f", r1, r2); }

    else if (d==0) {
printf("Roots are real & unequal");
    r1 = r2 = -b/(2*a);
printf("The root are %f %f", r1, r2); }
else {
    printf("Roots are imaginary and unequal");
        d = -d;
        rp = -b/(2*a);
        ip = sqrt(d)/(2*a);
printf("The roots are %f + i %f %f - i %f", rp, ip,
                                    rp, ip);

    }
return 0;
}
```

35) WAP to check whether an integer given from user is triangular or not.

```
#include <stdio.h>

int main( ) {
    int n, i, sum = 0;
    printf ("Enter no.: ");
    scanf ("%d", &n);
    for (i=0; i<=n; i++)
    {
      sum = sum + i;
      if (sum == n)
      {
        printf ("%d is a triangular no.", n);
        break;
      }
    }
      if (n == i)
      {
        printf ("%d is not a triangular no.", n);
      }
    return (0);
}
```

36) WAP to display all the prime factor of given no.

```
#include <stdio.h>
int main() {
  int a, b, num, prime;
printf("Enter any number");
scanf("%d", &num);
printf("All Prime factor of %d are", num);
  for (a=2; a<=num; a++)
{
  if (num%a==0)
{
  prime=1;
  for (b=2; b<=a/2; b++)
{
  if (a%b==0)
{
  prime=0;
  break;
}
{ if (prime==1)
{ printf("%d", i);
  }
}
}
return 0;
}
```

37) WAP to display triangular number in Range.

```
#include <stdio.h>
void main ( ) {
  int n, sum, i, high, low, j ;
  printf ("Enter start & End of range " );
  scanf ("%d %d ", &low, &high);
  for (i = low ; i <= high ; i++ ) {
        Sum = 0;
        n = i;
    for (j = 0 ; j < n ; j++) {
        sum = sum + j ;
        if (sum == i) {
      printf ("%d", i) ;
    }
  }
}
  return 0;
}
```