ARCHANA KUMARI **Lab Assignment 2A**

ROLL-408 **(Upto Control Structure)**

ECE

```c
//1.)write a c program to check pelindrome number.

#include <stdio.h>

void main(){
printf("Enter a number: ");
int num;
scanf("%d", &num);
int reverse_num=0, copy_num=num;

while(num>0){
 reverse_num= 10*reverse_num + num%10;
 num/=10;
}
 if(reverse_num==copy_num)
   printf("Yes! It's a Pelindrome number");
 else
   printf("Not a pelindrome.");
}
```

```
Enter a number: 3456543
Yes! It's a Pelindrome number
--------------------------------
Process exited after 5.235 seconds with return value 29
Press any key to continue . . .
```

```
Enter a number: 3456
Not a pelindrome.
--------------------------------
Process exited after 2.759 seconds with return value 17
Press any key to continue . . .
```

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```c
//2.) Write a C program to find the size of int,
     float, double and char.

#include <stdio.h>

void main(){
int i=2;
float f=3.3;
double d=7.3333333;
char c='a';

printf("Size of int is %d",sizeof(i));
printf("\nSize of Float is %d",sizeof(f));
printf("\nSize of Double is %d",sizeof(d));
printf("\nSize of Char is %d",sizeof(c));

}
```

```
Size of int is 4
Size of Float is 4
Size of Double is 8
Size of Char is 1
--------------------------------
Process exited after 0.1755 seconds with return value 18
Press any key to continue . . .
```

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```c
//3. Write a C program to check whether a character
   is a vowel or a consonant.

#include <stdio.h>

void main(){
printf("Enter an alphabet: ");
char c='\0';
scanf("%c", &c);
if(c=='a' || c=='e' || c=='i' || c=='o' || c=='u')
  printf("Vowel");
else
  printf("Consonant");

}
```

```
Enter an alphabet: f
Consonant
--------------------------------
Process exited after 2.113 seconds with return value 9
Press any key to continue . . .
```

```
Enter an alphabet: u
Vowel
--------------------------------
Process exited after 5.383 seconds with return value 5
Press any key to continue . . .
```

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```c
//4.)Write a C program to find GCD of 2 numbers.

#include <stdio.h>

void main(){

printf("Enter two numbers: ");
int num_1=0, num_2=0, temp=0;
scanf("%d%d", &num_1, &num_2);

while(num_2 != 0){
  temp  = num_2;
  num_2 = num_1 % num_2;
  num_1 = temp;
 }
printf(" GCD = %d", num_1);
}
```

```
Enter two numbers: 44 72
 GCD = 4
--------------------------------
Process exited after 12.5 seconds with return value 8
Press any key to continue . . .
```

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```c
//5.) Write a C program to find LCM of two numbers.

#include <stdio.h>

void main(){

printf("Enter two positive numbers: ");
int num_1=0, num_2=0;
scanf("%d%d", &num_1, &num_2);

int max=(num_1 > num_2) ? num_1 : num_2;
for(;;){
  if(max % num_1 ==0 && max % num_2 ==0){
    printf("LCM= %d", max);
    break;
  }
  max++;
 }
}
```

```
Enter two positive numbers: 44 72
LCM= 792
--------------------------------
Process exited after 6.554 seconds with return value 8
Press any key to continue . . .
```

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```c
//6.) Write a C program to display the factors of a number.

#include <stdio.h>

void main(){

printf("Enter a number: ");
int n;
scanf("%d", &n);
int i=0;
for(i=1; i<=n; ++i){
 if(n%i==0)
  printf(" %d ", i);
  }

}
```

```
Enter a number: 60
 1  2  3  4  5  6  10  12  15  20  30  60
--------------------------------
Process exited after 3.137 seconds with return value 60
Press any key to continue . . .
```

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```c
//7.) Write a C program to find the second largest from 5 numbers.

#include <stdio.h>

void main(){
int i=0, n1=0, n2=0;
for(i=0; i<5; ++i){
  printf("Enter a number: ");
  int n;
  scanf("%d", &n);
  if(i==0){
   n1=n;
   n2=n;
  }
  if(n>n1){
    n2=n1;
    n1=n;
  }
  else if(n>n2)
    n2=n;
  }
  printf("The second largest number is %d", n2);
}
```

```
Enter a number: 56
Enter a number: 43
Enter a number: 23
Enter a number: 76
Enter a number: 98
The second largest number is 76
--------------------------------
Process exited after 14.97 seconds with return value 31
Press any key to continue . . .
```

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```c
//8.)Write a C program to calculate SI and CI of a number where %age of interest and year is also given as input.

#include <stdio.h>
#include <math.h>

void main(){
printf("Enter the principal amount: Rs. ");
float p;
scanf("%f", &p);
printf("Enter the rate of interest: ");
float r;
scanf("%f", &r);
printf("Enter the time period (in years): ");
float t;
scanf("%f", &t);

float SI= (p*r*t)/100;
float CI=p*pow((1+r/100),t) - p;

printf(" SI = %0.3f", SI);
printf("\n CI = %0.3f", CI);

}
```

```
Enter the principal amount: Rs. 10000
Enter the rate of interest: 5.2
Enter the time period (in years): 2.5
 SI = 1300.000
 CI = 1351.138
--------------------------------
Process exited after 17.39 seconds with return value 15
Press any key to continue . . .
```

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```c
//9.) Write a C program to calculate nPr and nCr (n,r give
n as an input).

#include <stdio.h>

double fact(int n){
 double factorial=1;
 int i=0;
 for(i=2;i<=n; ++i)
   factorial *= i;
return factorial;
}

void main(){
printf("Enter the value of n: ");
int n;
scanf("%d", &n);
printf("Enter the value of r: ");
int r;
scanf("%d", &r);

int nPr=fact(n)/fact(n-r);
int nCr=fact(n)/(fact(n-r)*fact(r));

printf(" nPr = %d\n", nPr);
printf(" nCr = %d\n", nCr);
}
```

```
Enter the value of n: 6
Enter the value of r: 2
 nPr = 30
 nCr = 15

--------------------------------
Process exited after 5.33 seconds with return value 10
Press any key to continue . . .
```

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```c
//10.) Write a C program to convert Decimal number to octal
     and vice-versa.

#include <stdio.h>

void main(){

//DECIMAL-> OCTAL
printf("Enter a Decimal number = ");
int decimal=0;
scanf("%d", &decimal);
int octal=0, i=1;

while(decimal!=0){
 octal += (decimal%8)*i;
 decimal /= 8;
 i *= 10;
}
printf("It's octal form = %d", octal);

//OCTAL -> DECIMAL
printf("\n\nEnter an Octal number = ");
int octal2=0;
scanf(" %d", &octal2);
int decimal2=0, j=0;

while(octal2!=0){
 decimal2 += (octal2%10)*pow(8,j);
 j++;
 octal2 /= 10;
}
printf("It's Decimal form = %d", decimal2);
}
```

```
Enter a Decimal number = 88
It's octal form = 130

Enter an Octal number = 130
It's Decimal form = 88
--------------------------------
Process exited after 11.98 seconds with return value 22
Press any key to continue . . .
```

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ECE

```c
//11.)Write a C program to convert Decimal number to Binary and vice
-versa.

#include <stdio.h>

void main(){
//DECIMAL-> BINARY
printf("Enter a Decimal number = ");
int decimal=0;
scanf("%d", &decimal);
int binary=0, i=1;

while(decimal!=0){
 binary += (decimal%2)*i;
 decimal /= 2;
 i *= 10;
}
printf("It's Binary form = %d", binary);

//BINARY -> DECIMAL
printf("\n\nEnter an Binary number = ");
int _binary=0;
scanf(" %d", &_binary);
int _decimal=0, j=0;

while(_binary!=0){
 _decimal += (_binary%10)*pow(2,j);
 j++;
 _binary/= 10;
}
printf("It's Decimal form = %d", _decimal);
}
```

```
Enter a Decimal number = 33
It's Binary form = 100001

Enter an Binary number = 1010
It's Decimal form = 10
--------------------------------
Process exited after 7.176 seconds with return value 22
Press any key to continue . . .
```

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