**1. Write a C program to display**

**################################**

**Student Name: Aman Singh**

**Branch: B.Tech. Computer Science and Engineering**

**Enrollment Number: 2022031035100001**

**#################################**

**CODE:**

#include<stdio.h>

int main()

{

printf("Student Name: Aman Singh\nBranch: B.Tech. Computer Science and Engineering\nEnrollment Number: 2022031035100001\n");

return 0;

}

**2. Write a program to calculate the area of the circle and volume of**

**the cylinder. Use A = pi \* r\*r, V=pi \* r\*r\*h.**

**Use PI as a symbolic constant.**

**CODE:**

#include<stdio.h>

#define PI 3.14

int main()

{

int a,v,r,h;

printf("Enter the value of radius for area of circle and volume of cylinder: ");

scanf("%d",&r);

printf("Enter the value of height of cylinder: ");

scanf("%d",&h);

a=PI\*r\*r;

v=PI\*r\*r\*h;

printf("The Area of circle is %d.\nThe Volume of cylinder is %d.\n",a,v);

return 0;

}

**3. Write a C program to take temperature from the user in Fahrenheit**

**and display the temperature in Celsius.**

**CODE:**

#include<stdio.h>

int main()

{

float C,F;

printf("Enter the value of temperature in fahrenheit: ");

scanf("%f",&F);

C=(F-32)\*5/9;

printf("The value of temperature is %.2f in celsius.\n",C);

return 0;

}

**4. Write a C program to take inputs of Day, Date, Month and Year**

**from the user and modify it in such a way that prints the month**

**name given the month number by the user.**

**CODE:**

#include<stdio.h>

int main()

{

int date,month,year;

printf("Enter the date: ");

scanf("%d",&date);

printf("Enter the month: ");

scanf("%d",&month);

printf("Enter the year: ");

scanf("%d",&year);

switch(month)

{

case 1:

printf("JANUARY.\n");

break;

case 2:

printf("FEBRUARY.\n");

break;

case 3:

printf("MARCH.\n");

break;

case 4:

printf("APRIL.\n");

break;

case 5:

printf("MAY.\n");

break;

case 6:

printf("JUNE.\n");

break;

case 7:

printf("JULY.\n");

break;

case 8:

printf("AUGUST.\n");

break;

case 9:

printf("SEPTEMBER.\n");

break;

case 10:

printf("OCTOBER.\n");

break;

case 11:

printf("NOVEMBER.\n");

break;

case 12:

printf("DECEMBER.\n");

break;

default:

printf("ERROR.\n");

break;

}

printf("%d/%d\n",date,year);

return 0;

}

**5. Write a C program that scans an integer from the user and checks**

**whether the number is divisible by 5 or not.**

**CODE:**

#include<stdio.h>

int main()

{

int number;

printf("Enter an integer: ");

scanf("%d",&number);

if (number%5==0)

{

printf("%d is divisible by 5.\n",number);

}

else

{

printf("%d is not divisible by 5.\n",number);

}

return 0;

}

**Q.6 Write a C program to take the birth date as an input and prints the**

**current age of the user.**

**CODE:**

#include<stdio.h>

int main()

{

int cdate,cmonth,cyear,bdate,bmonth,byear,years,months,days;

printf("Enter the current date: ");

scanf("%d",&cdate);

printf("Enter the current month: ");

scanf("%d",&cmonth);

printf("Enter the current year: ");

scanf("%d",&cyear);

printf("Enter the birth date: ");

scanf("%d",&bdate);

printf("Enter the birth month: ");

scanf("%d",&bmonth);

printf("Enter the birth year: ");

scanf("%d",&byear);

years=cyear-byear;

if(cmonth>bmonth)

{

months=cmonth-bmonth;

}

else if(bmonth>cmonth)

{

months=bmonth-cmonth;

}

if(cdate>bdate)

{

days=cdate-bdate;

}

else if(bdate>cdate)

{

days=bdate-cdate;

}

printf("Your age is %d years, %d months, %d days.\n",years,months,days);

return 0;

}

**Q.7 Write a program to read student’s total marks as input and**

**program should display equivalent grade according to following**

**table:**

**Marks Grades**

**100 - 80 Distinction**

**79-60 First Class**

**59 – 40 Second Class**

**&lt; 40 Fail**

**CODE:**

#include<stdio.h>

int main()

{

int marks;

printf("Enter your marks(0-100): ");

scanf("%d",&marks);

if(100>=marks && marks>=80)

{

printf("DISTINCTION.\n");

}

else if(79>=marks && marks>=60)

{

printf("FIRST CLASS.\n");

}

else if(59>=marks && marks>=40)

{

printf("SECOND CLASS.\n");

}

else if(40>=marks && marks>=0)

{

printf("FAIL.\n");

}

return 0;

}

**Q.8 Write a C program to read numbers from 1 to 7 and print**

**respective day of the week to the user.**

**CODE:**

#include<stdio.h>

int main()

{

int day;

printf("Enter the number of the day: ");

scanf("%d",&day);

switch (day)

{

case 1:

printf("MONDAY.\n");

break;

case 2:

printf("TUESDAY.\n");

break;

case 3:

printf("WEDNESDAY.\n");

break;

case 4:

printf("THURSDAY.\n");

break;

case 5:

printf("FRIDAY.\n");

break;

case 6:

printf("SATURDAY.\n");

break;

case 7:

printf("SUNDAY.\n");

break;

default:

printf("ENTER VALID DAY.\n");

break;

}

return 0;

}

**Q.9 Write a C program to generate the first N number of Fibonacci series. The value of N is to be entered by the user.**

**CODE:**

#include <stdio.h>

int main()

{

int i,n,t1 = 0, t2 = 1;

int t3 = t1 + t2;

printf("Enter the number of terms: ");

scanf("%d", &n);

printf("Fibonacci Series: %d %d ", t1, t2);

for (i=2;i<n;i++)

{

t3 = t1 + t2;

printf("%d ",t3);

t1 = t2;

t2 = t3;

}

return 0;

}

**Q.10 Write a program to find out the sum of the first and last digit of a**

**user entered number.**

**CODE:**

#include <stdio.h>

int main()

{

int n,firstdigit,lastdigit;

printf("Enter a number: ");

scanf("%d", &n);

lastdigit = n % 10;

while(n >= 10)

{

n = n / 10;

}

firstdigit = n;

printf("Sum of first and last digit number is = %d.\n",firstdigit+lastdigit);

return 0;

}

**Q.11 Write a program to print following patterns:**

**CODE(1):**

#include<stdio.h>

int main()

{

for(int i=1;i<=5;i++)

{

for(int j=1;j<=i;j++)

{

printf("%d",j);

}

printf("\n");

}

return 0;

}

**CODE(2):**

#include<stdio.h>

int main()

{

for(int i=1;i<=5;i++)

{

for(int s=i;s<5;s++)

printf(" ");

for(int j=1;j<=i;j++)

printf(" \*");

printf("\n");

}

return 0;

}

**CODE(3):**

#include<stdio.h>

int main()

{

for(int i=5;i>=1;i--)

{

for(int s=i;s<5;s++)

printf(" ");

for(int j=1;j<=i;j++)

printf(" \*");

printf("\n");

}

return 0;

}

**CODE(4):**

#include<stdio.h>

int main()

{

int i,j;

for(i='E';i>='A';i--)

{

for(j='A';j<=i;j++)

{

printf("%c",j);

}

printf("\n");

}

return 0;

}

**Q.12 Write a program that defines a function to add first N numbers. The value of N is to be entered by the user.**

**CODE:**

#include<stdio.h>

int add();

int main()

{

add();

}

int add()

{

int i,n,sum=0;

printf("Enter the number: ");

scanf("%d",&n);

for(i=1;i<=n;i++)

{

sum+=i;

}

printf("Sum of first %d number is %d\n",n,sum);

return 0;

}

**Q.13 Write a user defined function with a name swap() to interchange the**

**values of two variables, say x and y. Call your swap() function from**

**the main() function.**

**CODE:**

#include<stdio.h>

int swap(int,int);

int main()

{

int x,y;

printf("Enter the value of x and y: ");

scanf("%d%d",&x,&y);

printf("Before Swapping\nValue of x is %d and y is %d\n",x,y);

swap(x,y);

}

int swap(int x,int y)

{

x=x+y;

y=x-y;

x=x-y;

printf("After Swapping\nValue of x is %d and y is %d\n",x,y);

return 0;

}

**Q.14 Create a function that scans a character string passed as an argument and convert all lowercase character into their uppercase equivalents.**

**CODE:**

#include<stdio.h>

int upr(char[]);

int main()

{

char s[20];

printf("Enter string: ");

scanf("%s",s);

upr(s);

}

int upr(char s[20])

{

int i;

printf("%s in upper case is ",s);

for(i=0;s[i];i++)

{

if(s[i]>96 && s[i]<123)

{

s[i]-=32;

}

}

printf("%s.\n",s);

return 0;

}

**Q.15 Write a C program to read and store the roll no and marks of twenty**

**students using an array. Display the same array to user in**

**appropriate format.**

**CODE:**

#include<stdio.h>

int main()

{

int rollno[20],marks[20],i;

for(i=0;i<20;i++)

{

printf("Enter the roll number of the student: ");

scanf("%d",&rollno[i]);

printf("Enter the marks of roll number %d: ",rollno[i]);

scanf("%d",&marks[i]);

}

for(i=0;i<20;i++)

{

printf("Marks of Roll Number %d is %d.\n",rollno[i],marks[i]);

}

return 0;

}

**Q.16 Write a program to sort given array in ascending order using Bubble**

**sort and Selection sort.**

**CODE:**

**1)Bubble Sort**

#include<stdio.h>

int main()

{

int n,i,j,arr[11],swap;

printf("Enter number of elements you want to sort: ");

scanf("%d",&n);

printf("Enter %d integers\n",n);

for(i=0;i<n;i++) //for storing the elements

{

scanf("%d",&arr[i]);

}

for(i=0;i<n-1;i++) //pass

{

for(j=0;j<n-i-1;j++)

{

if(arr[j]>arr[j+1])

{

swap=arr[j];

arr[j]=arr[j+1];

arr[j+1]=swap;

}

}

}

printf("Bubble sort for the given order is\n");

for(i=0;i<n;i++) //for printing the bubble sort order

{

printf("%d\n",arr[i]);

}

return 0;

}

**2) Selection Sort**

#include <stdio.h>

int main()

{

int array[100],n,c,d,position,t;

printf("Enter number of elements: ");

scanf("%d", &n);

printf("Enter %d integers.\n", n);

for (c = 0; c < n; c++)

scanf("%d", &array[c]);

for (c = 0; c < (n - 1); c++) // finding minimum element (n-1) times

{

position = c;

for (d = c + 1; d < n; d++)

{

if (array[position] > array[d])

{

position = d;

}

}

if (position != c)

{

t = array[c];

array[c] = array[position];

array[position] = t;

}

}

printf("Sorted list in ascending order:\n");

for (c = 0; c < n; c++)

{

printf("%d\n", array[c]);

}

return 0;

}

**Q.17 Write a program to perform various string operations on user entered strings.**

**CODE:**

#include<stdio.h>

#include<string.h>

int main()

{

char s1[101],s2[101];

int l1,l2;

printf("Enter the first string: ");

scanf("%s",s1);

printf("Enter the second string: ");

scanf("%s",s2);

l1=strlen(s1);

l2=strlen(s2);

printf("The length of first string is %d\n",l1);

printf("The length of second string is %d\n",l2);

printf("Result of comparison of both the string is %d\n",strcmp(s1,s2));

printf("The concatenation of both the string is %s\n",strcat(s1,s2));

printf("Result of copying one string to another string is %s\n",strcpy(s1,s2));

return 0;

}

**Q.18 Define a structure type struct person that contains person\_name, date\_of\_joining and salary. Write a code to read this information**

**from the user and print the same.**

**CODE:**

#include <stdio.h>

struct person

{

char name[21];

char doj[11];

float salary;

};

int main()

{

struct person p[101];

int n,i;

printf("Enter number of persons: ");

scanf("%d",&n);

for(i=0;i<n;i++)

{

printf("\n Enter %d Person Name : ",i+1);

scanf("%s",p[i].name);

printf("\n Enter Person Date of Joining (dd-mm-yy) : ");

scanf("%s",p[i].doj);

printf("\n Enter Person Salary : ");

scanf("%f",&p[i].salary);

}

for(i=0;i<n;i++)

{

printf("\n Person %d Detail: ",i+1);

printf("\n Name = %s",p[i].name);

printf("\n Date Of Joining = %s",p[i].doj);

printf("\n Salary = $%.2f",p[i].salary);

printf("\n");

}

printf("\n");

return 0;

}

**Q.19 Define a structure called cricket that will describe the following information:**

**Player\_name, Team\_name, and Batting\_average. Using structure, declare an array player[ ] with 50 elements and write a C code to read the information about 5 players and print a team wise list containing names of players with their batting average.**

**CODE:**

#include<stdio.h>

struct cricket

{

char Player\_name[50];

char Team\_name[50];

float Batting\_average;

};

int main()

{

struct cricket s[5],t;

int i,j,n=5;

float p;

printf("\nEnter data of %d players",n);

for(i=0;i<n;i++)

{

printf("\nEnter Player\_name Team\_name Batting\_Avg for player-%d = ",i+1);

scanf("%s %s %f",s[i].Player\_name,s[i].Team\_name,&p);

s[i].Batting\_average=p;

}

for(i=1;i<=n-1;i++)

{

for(j=1;j<=n-i;j++)

{

if(strcmp(s[j-1].Team\_name,s[j].Team\_name)>0)

{

t=s[j-1];

s[j-1]=s[j];

s[j]=t;

}

}

}

printf("\nAfter teamwise sorting... Player list is\n\n ");

printf("Player Names Team Name Batting Average\n");

for(i=0;i<n;i++)

{

printf("\n%-20s %-20s

%.2f",s[i].Player\_name,s[i].Team\_name,s[i].Batting\_average);

}

printf("\n");

return 0;

}

**Q.20 Define a structure data type called time\_ struct containing three member’s: integer hour,integer minute and integer second.**

**Develop a program that would assign values to the individual number and display the time in the following format: 16:40:51**

**CODE:**

#include<stdio.h>

struct time

{

int hour;

int minute;

int second;

};

int main()

{

struct time t[5];

int i,j;

for(i=0,j=1; i<5; i++,j++)

{

printf(">>>Enter times %d :\n",j);

do

{

printf(">Enter hour :");

scanf("%d",&t[i].hour);

}while(t[i].hour>24 || t[i].hour<0);

do

{

printf(">Enter minute :");

scanf("%d",&t[i].minute);

}while(t[i].minute>60 || t[i].minute<0);

do

{

printf(">Enter second :");

scanf("%d",&t[i].second);

}while(t[i].second>60 || t[i].second<0);

}

for(i=0,j=1; i<5; i++,j++)

{

printf("\n->Time %d :%d:%d:%d",j,t[i].hour,t[i].minute,t[i].second);

}

return 0;

}

**Q.21 Write a C program to print the address of a variable using a pointer**

**CODE:**

#include<stdio.h>

int main()

{

int a=11;

int \*p;

p=&a;

printf("Address of variable 'a' is %d\n",p);

return 0;

}

**Q.22 Write a C program to swap the two values using pointers.**

**CODE:**

#include<stdio.h>

int swap(int\*,int\*);

int main()

{

int a,b;

printf("Enter the value of a: ");

scanf("%d",&a);

printf("Enter the value of b: ");

scanf("%d",&b);

printf("Before Swapping\nThe value of a is %d and value of b is %d\n",a,b);

swap(&a,&b);

}

int swap(int \*p1,int \*p2)

{

int temp;

temp=\*p1;

\*p1=\*p2;

\*p2=temp;

printf("After Swapping\nThe value of a is %d and value of b is %d\n",\*p1,\*p2);

return 0;

}

**Q.23 Write a C program to print the address of a character and the character of a string using a pointer.**

**CODE:**

#include<stdio.h>

void main()

{

char ch='a';

char \*p1;

p1=&ch;

int i;

printf("character address is %d",p1);

char charr[7]="amtics";

char \*p2[7];

for(i=1;i<=7;i++)

{

printf("%d=%d \n",i,p2[i]);

}

}

Q.24 Write a C program to perform sorting using a pointer.

CODE:

#include<stdio.h>

int main()

{

int n;

printf("Enter number of elements you want to sort: ");

scanf("%d",&n);

int a[n];

int \*p;

p=a;

for (int i=0;i<n;i++)

{

printf("Enter element %d: ",i+1);

scanf("%d",&a[i]);

}

for (int j=0;j<n;j++)

{

for (int i = 0; i < n-1; i++)

{

if (\*(p+i)>\*(p+i+1))

{

int temp;

temp=\*(p+i);

\*(p+i)=\*(p+i+1);

\*(p+i+1)=temp;

}

}

}

printf("Sorted array is:\n");

for (int i=0;i<n;i++)

{

printf("%d ",a[i]);

}

printf("\n");

return 0;

}

Q.25 Write a C program that reads and prints the content of the file. The file name is to be taken as a user input.

CODE:

#include<stdio.h>

void main()

{

FILE \*fp;

char ch;

fp=fopen("Practical7.c","r");

do{

ch=getc(fp);

putchar(ch);

}

while(ch !=EOF);

fclose(fp);

}

Q.26 Write a program to copy the contents of one file to another.

CODE:

#include<stdio.h>

#include<stdlib.h>

int main()

{

FILE \*fptr1, \*fptr2;

char filename[100], c;

printf("Enter the filename to open for reading \n");

scanf("%s", filename);

// Open one file for reading

fptr1 = fopen(filename, "r");

if (fptr1 == NULL)

{

printf("Cannot open file %s \n", filename);

exit(0);

}

printf("Enter the filename to open for writing \n");

scanf("%s", filename);

// Open another file for writing

fptr2 = fopen(filename, "w");

if (fptr2 == NULL)

{

printf("Cannot open file %s \n", filename);

exit(0);

}

// Read contents from file

c = fgetc(fptr1);

while (c != EOF)

{

fputc(c, fptr2);

c = fgetc(fptr1);

}

printf("\nContents copied to %s", filename);

fclose(fptr1);

fclose(fptr2);

return 0;

}

Q.27 Write a program to store a character string in block of memory space created by malloc and then modify the same to store a

large string.

CODE:

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

int main()

{

int n,i;

printf("Enter the size or the number of chracters that you want to enter inside the string.\n");

scanf("%d",&n);

char \*p = (char\*)malloc((n+1)\*sizeof(char));

if(p==NULL)

{

printf("Memory allocation fails..");

exit(0);

}

puts("Enter string");

for(i=0;i<(n+1);i++)

scanf("%c",p+i);

\*(p+i)= '\0';

printf("String entered %s",p);

fflush(stdin);

printf("\nEnter new size\n");

scanf(" %d",&n);

p = realloc(p,(n+1)\*sizeof(char));

puts("Enter new string");

scanf("%d", &n);

for(i=0;i<(n+1);i++)

scanf("%c",p+i);

\*(p+i)= '\0';

printf("New string \n%s",p);

free(p);

return 0;

}