CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

INSTITUTE: Chandubhai S. Patel Institute of Technology [CSPIT]

SUBJECT CODE & NAME: CE143 Computer Concepts and Programming

ACADEMIC YEAR: 2022-23

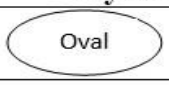
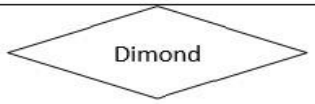
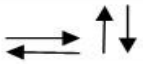
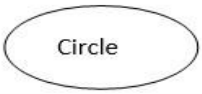
ID: 22CE004

Subject code	:	CE143	Semester	:	1	Academic Year	:	2022-2023
Subject name	:	Computer Concepts and Programming						

Instructions for Coding standards:

- First line in any program must be "/* This program is prepared by 21CE0XX_Name */".
- Understand the problem and draw the flowchart for planned solution and write algorithm.
- **Indentation:** Ensure proper indentation in code.
- **Naming Conventions:** Ensure appropriate naming conventions for variables (CamelCase is mandatory).
- **Comments:** Ensure single line or multiline comments in code.
- Habituate yourself for revising code in order to solve errors.

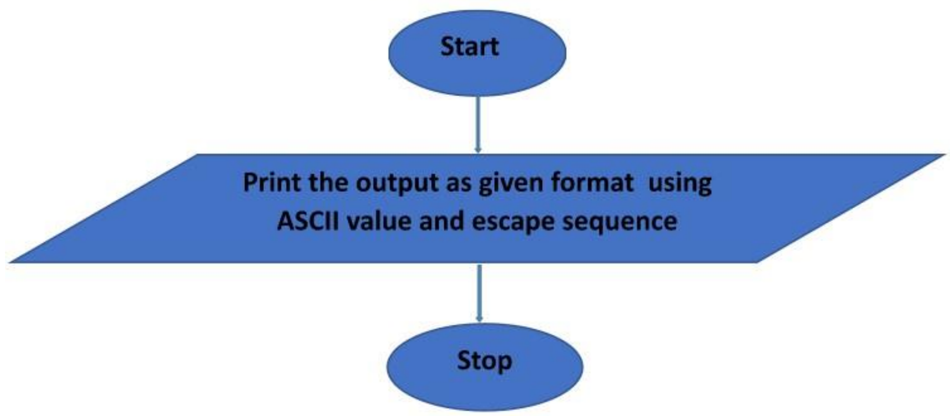
Essential symbols for flowchart: [Students may use additional structures in certain cases to increase knowledge transfer]

S.No.	Name	Symbols	Meanings
i.	Start/Stop		It indicates the beginning and ending of the flowchart.
ii.	Input/output		It indicates the input/output operations.
iii.	Processing		It indicates the calculation or manipulate of data.
iv.	Decision		It indicates the decision making and branching.
v.	Flow lines		It indicates the direction of flow of instruction.
vi.	Connector		It joins one part of the flowchart with another part.

Rubrics:

Criteria	**Excellent 5**	**Good 3**	**Poor 1**
Flowchart and Algorithm	Ensured correct use of Flowchart symbols, also flow of solution and algorithm are matching	Correct use of flowchart symbols but mismatch in flowchart and algorithm	Either Flowchart or Algorithm is missing
Coding Standards (Naming Conventions, Indentation, Comments)	All 3 ensured	Any two ensured	Any one ensured

Output as per Expectation (Attach output screenshot and filled the table)	Attached screenshot of output and filled the table	Attached screenshot of output but not filled the table	Neither Screenshot attached nor filled the table
Question and Answer	Questions are answered appropriately and are well formatted	Minor mistakes in answers and moderately formatted	Either not answered or clarity of answer is not apparent

Program: 1.1	Write a C program that will output this passage by Michael Singer. Make sure your output looks exactly as shown here. (including spacing, line breaking, punctuation and the title and author).Use Required **Escape Sequence** and **ASCII Value**
Flowchart	
Algorithm	**STEP1**:Start. **STEP2**:Print the output as given format using ASCII value and escape sequence. **STEP3**:Stop**.**
Code	See code below
Output	See output below

Code

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a=1,b=4,c=3;
printf("%c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c
%c",a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a);
printf("\n%c\"If you are resisting something,you are feeding it.\t\t\t      %c",b,b);
printf("\n%c\tAny energy you fight,you are feeding it.\t\t\t      %c",c,c);
printf("\n%c\t\t      If you are pushing something away,\t\t      %c",a,a);
printf("\n%c\t\t\t       You are inviting it to stay.\"by Michael Singer.%c",b,b);
printf("\n%c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c %c
%c",a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a,b,c,a);
printf("\nThis program is prepared by Tanvi-22TCE135");
getch();
}
```

Output

```
☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺
♦"If you are resisting something,you are feeding it.                   ♦
♥       Any energy you fight,you are feeding it.                       ♥
☺                     If you are pushing something away,               ☺
♦                                You are inviting it to stay."by Michael Singer.♦
☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺ ♦ ♥ ☺
This program is prepared by Tanvi-22TCE135
```

Questions

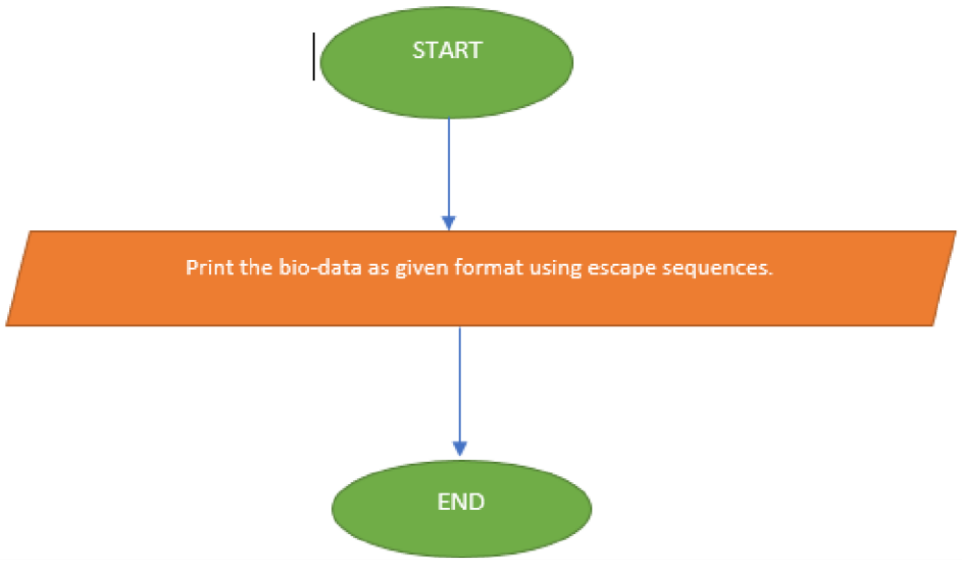
1. Have you learnt about ASCII values for different symbols other than smile, diamond and heart? If yes, then mention any 5 ASCII symbols and their values in tabular format.

Sr.No.	Symbol	ASCII Value
1	:	58
2	;	59
3	A	65
4	@	64
5	#	35

Program: 1.2

Write your bio-data using Escape Sequences.

Flowchart



Algorithm

STEP 1: Start
STEP 2: Print the bio-data as a given format using escape sequences.
STEP 3: End

Code

```c
#include<stdio.h>
#include<conio.h>
void main()
{
printf("\t#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#\n");
printf("\t\t\t\t\t\tBIO-DATA\n");
printf("\t#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#\n\n");
printf("\t\t\t\t\tBASIC INFORMATION\n");
printf("\t--------------------------------------------------------------------------------\n");
printf("\t\t\t\tName:Tanvi R. Balsara\n");
printf("\t\t\t\tAddress:ashanagar,navsari\n");
printf("\t\t\t\tMobile number:1234567891\n");
printf("\t\t\t\tGender:f\n");
printf("\t\t\t\tDate of birth:18/09/2004\n\n");
printf("\t\t\t\t\tEDUCATION QUALIFICATION\n");
printf("\t--------------------------------------------------------------------------------\n");
printf("\t\t\t\t*Ssc percentage:87%\tschool:sanskar bharti\tpassing year:2020\n");
printf("\t\t\t\t*Hsc percentage:81.33%\tschool:A.B.school\tpassing year:2022\n\n");
printf("\t\t\t\t\tOTHER INFORMATION\n");
printf("\t--------------------------------------------------------------------------------\n");
printf("\t\t\t\tTechnical skills:'C'\n");
printf("\t\t\t\tHobbies:dancing,art,photography\n");
printf("\t#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#\n");
printf("\t\t\t\t\t\tTHANK YOU\n");
printf("\t#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#\n");
printf("\t\t\t\t\t\tTHIS PROGRAM IS MADE BY TANVI ");
getch();

}
```

Output

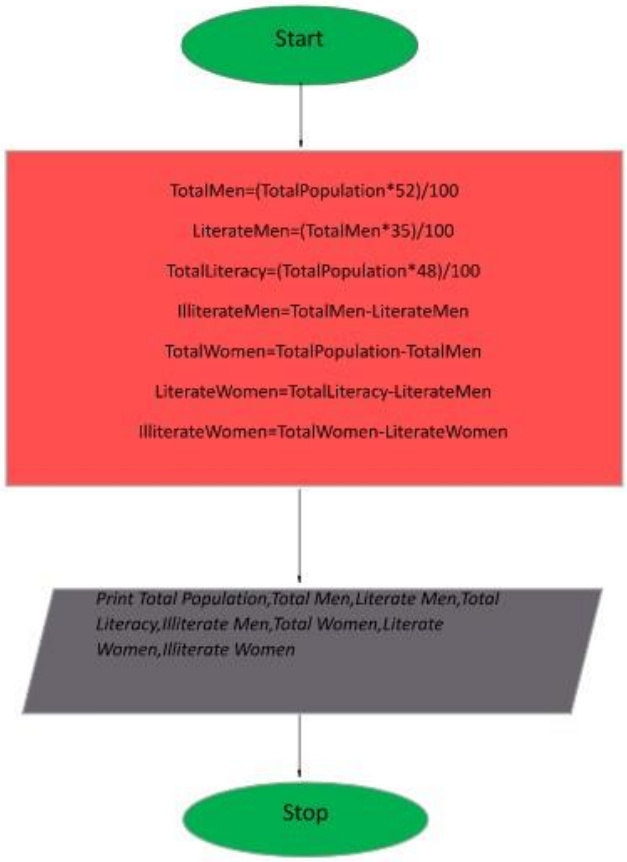
```
#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#
                                BIO-DATA
#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#

                            BASIC INFORMATION
--------------------------------------------------------------------------------
                        Name:Tanvi R. Balsara
                        Address:ashanagar,navsari
                        Mobile number:1234567891
                        Gender:f
                        Date of birth:18/09/2004

                            EDUCATION QUALIFICATION
--------------------------------------------------------------------------------
                        *Ssc percentage:87      school:sanskar bharti   passing year:2020
                        *Hsc percentage:81.33   school:A.B.school       passing year:2022

                            OTHER INFORMATION
--------------------------------------------------------------------------------
                        Technical skills:'C'
                        Hobbies:dancing,art,photography
#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#
                                THANK YOU
#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#===#
                                THIS PROGRAM IS MADE BY TANVI
```

Questions

1. What is the purpose of using escape sequences?

Sr.No.	Escape Sequence	Purpose
1	\n	New Line
2	\’	Single quotation mark
3	\”	Double quotation mark
4	\t	Horizontal tab
5	\v	Vertical tab

Sign: Grade:

Program: 2.1	In a town, the percentage of men is 52. The percentage of total literacy is 48. If total percentage of literate men is 35 of the total population, write a program to find the total number of illiterate men and women if the population of the town is 80,000. Draw flowchart, write algorithm and program for given scenario.
Flowchart	
Algorithm	**STEP:1** Start **STEP:2** Input TotalPopulation,TotalMen,LiterateMen,TotalLiteracy,IlliterateMen,TotalWomen,LiterateWomen,Illiterat eWomen **STEP:3** Declare TotalMen=(TotalPopulation*52)/100 LiterateMen=(TotalMen*35)/100 TotalLiteracy=(TotalPopulation*48)/100 IlliterateMen=TotalMen-LiterateMen TotalWomen=TotalPopulation-TotalMen LiterateWomen=TotalLiteracy-LiterateMen IlliterateWomen=TotalWomen-LiterateWomen **STEP:4** Print Total Population,Total Men,Literate Men,Total Literacy,Illiterate Men,Total Women,Literate Women,Illiterate Women **STEP:5** Stop

Code

```
#include<stdio.h>
#include<conio.h>
void main()
{
    long int TotalPopulation=80000;
    long int TotalMen=(TotalPopulation*52)/100;
    long int LiterateMen=(TotalMen*35)/100;
    long int TotalLiteracy=(TotalPopulation*48)/100;
    long int IlliterateMen=TotalMen-LiterateMen;
    long int TotalWomen=TotalPopulation-TotalMen;
    long int LiterateWomen=TotalLiteracy-LiterateMen;
    long int IlliterateWomen=TotalWomen-LiterateWomen;
    clrscr();
    printf("Total Number of Population:%ld,\nTotal Number of Men:%ld,\nTotal Number of LiterateMen:%ld,\nTotal Number of Literacy:%ld,\nTotal Number of Women:%ld,\nTotal Number of LiterateWomen:%ld,\nTotal Number of IlliterateWomen:%ld,TotalPopulation,TotalMen,LiterateMen,TotalLiteracy,IlliterateMen,TotalWomen,LiterateWomen,IlliterateWomen");
    printf("\n\n\nID:22TCE135\nNAME:TANVI BALSARA");
    getch();
}
```

Output

```
Total Number of Population:80000,
Total Number of Men:41600,
 Total Number of Literate Men:14560,
Total Number of literacy:38400,
Total Number of Illiterate Men:27040,
Total Number of Women:38400,
Total Number of Literate Women:23840,
Total Number of Illiterate Women:14560


THIS PROGRAM IS PREPARED BY TANVI ID:22TCE135_
```

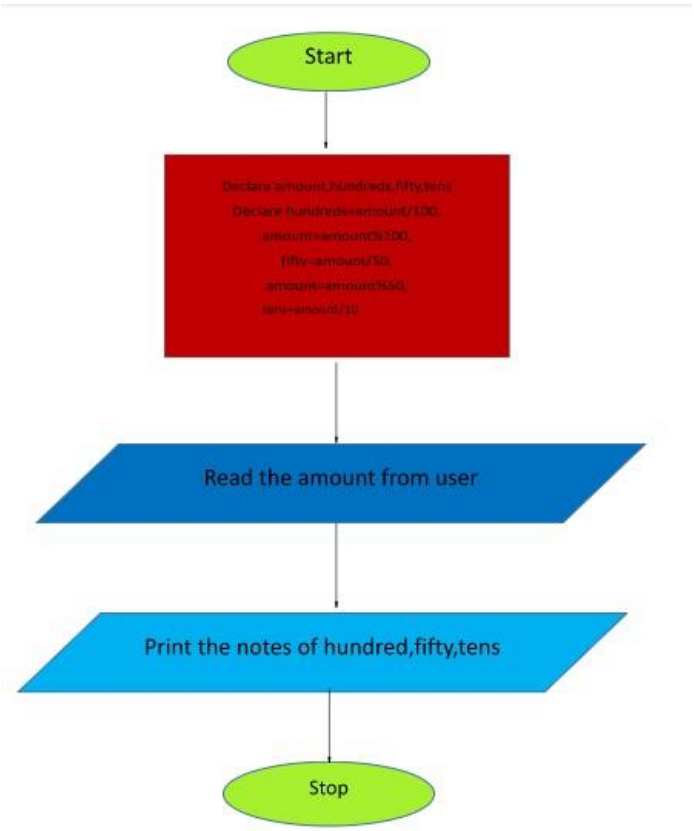
Question

Has this scenario helped you learn about integer and float datatype? If yes, then mention the requirements of using integer and float data types.

Ans: Yes, it helps me. We can use integer for integer value and float for decimal value.

Program: 2.2

A Big bazaar cashier has currency notes of denominations 10,50 and 100. If the amount to be withdrawn is input through the keyboard in hundreds, find the total number of currency notes of each denomination the cashier will have to give to the withdrawer. Draw flowchart, write algorithm and program for given scenario.

Flowchart	
Algorithm	**STEP 1**: Start **STEP 2:** Declare amount,hundreds,fifty,tens **STEP 3**: Declare hundreds=amount/100, amount=amount%100, fifty=amount/50, amount=amount%50, tens=amount/10 **STEP 4**: Take input from user in variable amount **STEP 5:** Print the number of hundreds,fifty,tens notes **STEP 6**: Stop

Code

```
000000.CPP
#include<stdio.h>
#include<conio.h>
void main()
{
int amount,hundreds,fifty,tens;
clrscr();
printf("Enter The Total Amount:");
scanf("%d",&amount);
hundreds=amount/100;
printf("\nNotes of 100s=%d",hundreds);
amount=(amount%100);
fifty=amount/50;
printf("\nNotes of 50s=%d",fifty);
amount=(amount%50);
tens=amount/10;
printf("\nNotes of 10s=%d",tens);
printf("\nThis program is prepared by Tanvi ID:22TCE135");
getch();
}
```

Output

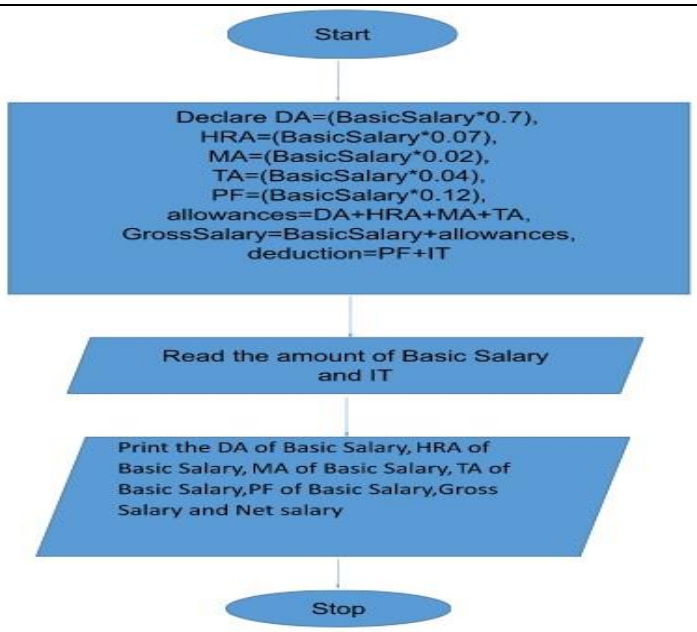
```
Enter The Total Amount:780

Notes of 100s=7
Notes of 50s=1
Notes of 10s=3
This program is prepared by Tanvi ID:22TCE135
```

Sr.No.	Note Requirements	Counts
1	Requirement of 100 Rs. note	7
2	Requirement of 50 Rs. note	1
3	Requirement of 10 Rs. note	3

Questions

1. Have you learned about how scanf function can be used to collect the user input? ANS:

SR.NO.	Data Type	Format Specifier	Example of data
1	Integer	%d	1
2	Float	%f	1.2
3	Char	%c	a

Program: 2.3	Write a program to calculate Net Salary. Draw flowchart, write algorithm and program for given scenario.
Flowchart	
Algorithm	**STEP:1** Start **STEP:2** Declare the variable BasicSalary,DA,HRA,MA,TA,PF,IT,GrossSalary,allowances,deduction **STEP:3** Declare DA=(BasicSalary*0.7), HRA=(BasicSalary*0.07), MA=(BasicSalary*0.02), TA=(BasicSalary*0.04), PF=(BasicSalary*0.12), allowances=DA+HRA+MA+TA, GrossSalary=BasicSalary+allowances, deduction=PF+IT **STEP:4** Take input of Basic Salary and IT from user **STEP:5** Print the DA of Basic Salary, HRA of Basic Salary, MA of Basic Salary, TA of Basic Salary,PF of Basic Salary,Gross Salary and Net salary **STEP:6** Stop

Code

```c
#include<stdio.h>
#include<conio.h>

void main ()
{

    float base,da,hra,ma,ta,pf,it,gross,net;

    printf("\n Enter your Basic salary : ");
    scanf("%f",&base);

    printf("\n Enter value of IT : ");
    scanf("%f",&it);


    da=(72*base)/100;
    hra=(7*base)/100;
    ma=(2*base)/100;
    ta=(4*base)/100;
    pf=(12*base)/100;

    printf("\n DA of Basic Salary : %0.2f\n",da);
    printf("\n HRA of Basic Salary : %0.2f\n",hra);
    printf("\n MA of Basic Salary : %0.2f\n",ma);
    printf("\n TA of Basic Salary : %0.2f\n",ta);
    printf("\n PF of Basic Salary : %0.2f\n",pf);


    gross=base+(da+hra+ma+ta);
    net=gross-(pf+it);

    printf("\n Gross Salary : %0.2f\n",gross);
    printf("\n Net Salary : %0.2f\n",net);
    printf("This program is prepared by Tanvi 22TCE135");

}
```

Output

```
Enter your Basic salary : 2000

Enter value of IT : 200

DA of Basic Salary : 1440.00

HRA of Basic Salary : 140.00

MA of Basic Salary : 40.00

TA of Basic Salary : 80.00

PF of Basic Salary : 240.00

Gross Salary : 3700.00

Net Salary : 3260.00
This program is prepared by Tanvi 22TCE135
Process returned 42 (0x2A)   execution time : 8.674 s
Press any key to continue.
```

Sr.No.	Input/Outputs	Amount
1	Enter your Basic Salary	2000
2	DA of Basic Salary	1440
3	HRA of Basic Salary	140
4	MA of Basic Salary	40
5	TA of Basic Salary	80
6	PF of Basic Salary	240
7	Gross Salary	3700

	8	Net Salary	3260

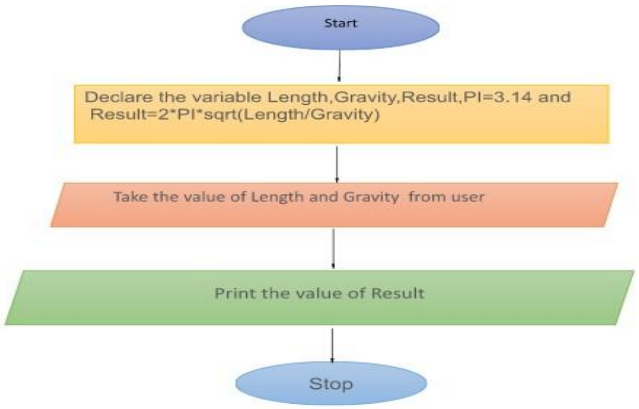
Questions

1. Have you learned about various data types that can be suitably used for this problem? Do mention which data types can be used and why? Also mention the difference between the outputs.

Ans: Data types:

1. **float**: This data type is used to store decimal number with single precision.
2. **double**: This data type is used to store decimal number with double precision.
3. **int**: This data type is used to store integer.

Sign: Grade:

Program: 3.1	Write a program that takes the length of the pendulum as input and then calculate the time period of the pendulum. Provided that, T=2πvL/G. Define the value of π as 3.14 and take L as the length of the pendulum and G as the acceleration of gravity either in m/s or as input from the keyboard. Display the time period rounded to 2 decimal places.
Flowchart	
Algorithm	**STEP 1:** Start **STEP 2:** Declare the variable Length,Gravity,Result,PI=3.14 **STEP 3:** Declare Result=2*PI*sqrt(Length/Gravity) **STEP 4:** Take the value of Length and Gravity from user **STEP 5:** Print the value of Result **STEP 6**: Stop

Code	```#include<math.h>
	#include<stdio.h>
	#define PI 3.14
	int main()
	{
	float length,gravity,res;
	printf("ENTER THE VALUE OF LENGTH: ");
	scanf("%f",&length);
	printf("\nENTER THE VALUE OF GRAVITY: ");
	scanf("%f",&gravity);
	res=2*PI*sqrt(length/gravity);
	printf("RESULT=%.2f",res);
	printf("THIS PROGRAM IS PREPARED BY TANVI-22TCE135")
	return 0;
	}```

Output

```
ENTER THE VALUE OF LENGTH: 50

ENTER THE VALUE OF GRAVITY: 9.8
RESULT=14.19
THIS PROGRAM IS PREPARED BY TANVI-22TCE135
Process returned 0 (0x0)   execution time : 7.235 s
Press any key to continue.
```

```
ENTER THE VALUE OF LENGTH: 50

ENTER THE VALUE OF GRAVITY: 0
RESULT=1.#J
THIS PROGRAM IS PREPARED BY TANVI-22TCE135
Process returned 0 (0x0)   execution time : 17.922 s
Press any key to continue.
```

```
ENTER THE VALUE OF LENGTH: 50

ENTER THE VALUE OF GRAVITY: 0.9993
RESULT=44.42
THIS PROGRAM IS PREPARED BY TANVI-22TCE135
Process returned 0 (0x0)   execution time : 16.037 s
Press any key to continue.
```

```
ENTER THE VALUE OF LENGTH: 50

ENTER THE VALUE OF GRAVITY: -1
RESULT=-1.#J
THIS PROGRAM IS PREPARED BY TANVI-22TCE135
Process returned 0 (0x0)   execution time : 11.219 s
Press any key to continue.
```

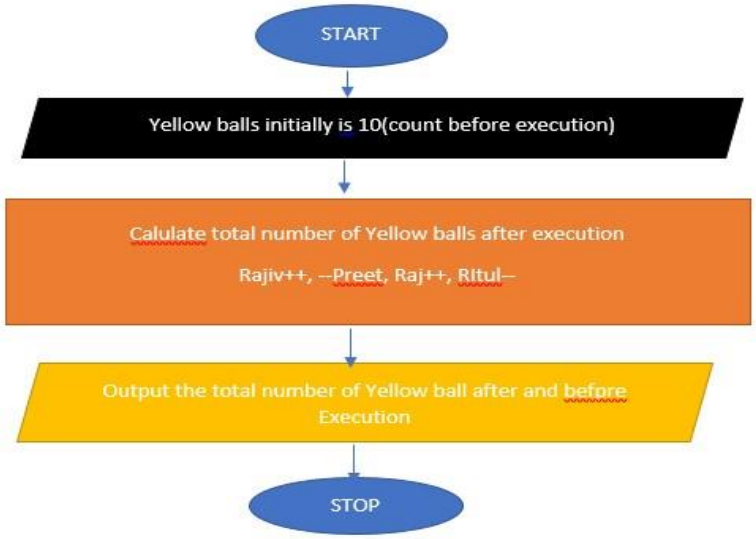
Questions

Have you learned about, how math function is useful for calculating square root? Which datatype is supported by all math functions? Also mention any 5 math functions with their purpose.

Ans:

Sr.No.	Math function	Description
1	ceil	Rounds up the given number. It returns the integer value which is greater than or equal to given number.
2	floor	Rounds down the given number. It returns the integer value which is less than or equal to given number.
3	sqrt	Returns the square root of given number.
4	pow	Returns the power of given number.

	5	abs	Returns the absolute value of given number.

Program: 3.2(a)	Let us understand the working of Pre-increment, Post-increment, Pre-decrement and Postdecrement a. Consider a scenario where, Boys are playing in the park and collecting and removing the yellow balls in/from the bucket based on teacher's instruction. Let's say there are already 10 Yellow balls present in a bucket. Following is the sequence of the instructions given by the teacher for adding/removing the balls. i. Rajiv: ++ Yellow ii. Preet: --Yellow iii. Raj: Yellow++ iv. Ritul: Yellow—
Flowchart	
Algorithm	**STEP 1:** Start **STEP 2:** Number of yellow balls initially is 10 **STEP 3:** Rajiv ++yellow, preet –yellow, raj yellow++, ritul yellow--. **STEP 4:** Print the value after calculation of yellow balls. **STEP 5:** Output of program as per question **STEP 6:** Stop

Code

```
#include<stdio.h>
#include<conio.h>
void main()
{
 int yellow=10;
 printf("SR.NO.\tINSTRUCTION\t\t\tYELLOW");
 printf("\n1.\tCount before execution:\t\t%d", yellow);
 ++yellow;
 --yellow;
 yellow++;
 yellow--;
 printf("\n2.\tCount after execution:\t\t%d", yellow);
 printf("\n\nTHIS PROGRAM IS PREPARED BY TANVI-22TCE135\n");
 return 0;
}
```

Output

```
SR.NO.  INSTRUCTION                     YELLOW
1.      Count before execution:         10
2.      Count after execution:          10

THIS PROGRAM IS PREPARED BY TANVI-22TCE135

Process returned 0 (0x0)   execution time : 0.030 s
Press any key to continue.
```

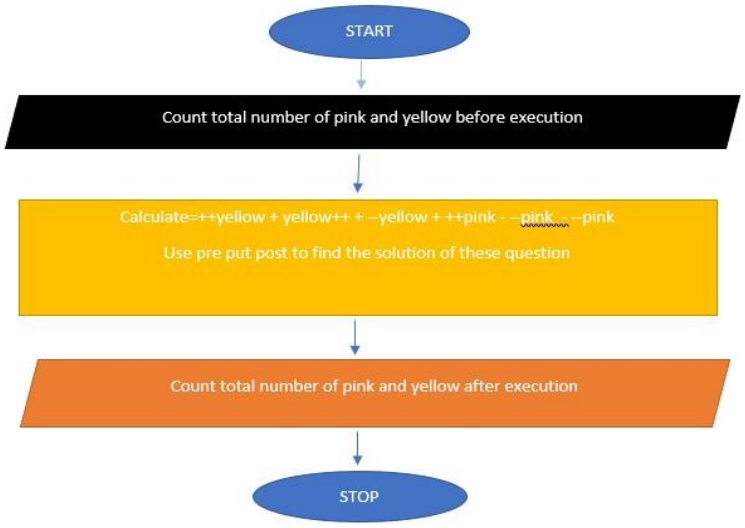
Program: 3.2(b)

Consider another scenario where boys and girls both are asked to add/remove Yellow and Pink balls from the bucket respectively. Currently there are 10 Yellow balls in the bucket and 20 Pink balls.

Teacher has given the sequence of instructions as below for adding/removing the balls.
Calculate = ++Yellow + Yellow++ + --Yellow + ++Pink - --Pink - -- Pink

Get the count of Yellow and Pink balls after evaluating above given scenario.

Flowchart



Algorithm

STEP 1: Start
STEP 2: Number of Yellow and Pink ball initially is 10, 20.
STEP 3: Calculate = ++Yellow + Yellow++ + --Yellow + ++Pink - --Pink - --Pink **STEP 4:** Print the value after calculation of Yellow and Pink.
STEP 5: Output of program as per Question **STEP 6:** Stop

Code

```
#include<stdio.h>
#include<conio.h>
void main()
{
 int calc,yellow=10,pink=20;
 printf("SR.NO.\tINSTRUCTION\t\t\tYELLOW\t\tPINK");
 printf("\n1.\tCount before execution:\t\t%d\t\t%d", yellow,pink);
 calc=++yellow + yellow++ + --yellow + ++pink - --pink - --pink;
 printf("\n2.\tCount after execution:\t\t%d\t\t%d", yellow,pink);
 printf("\n\nTHIS PROGRAM IS PREPARED BY TANVI-22TCE135\n");
 return 0;
}
```

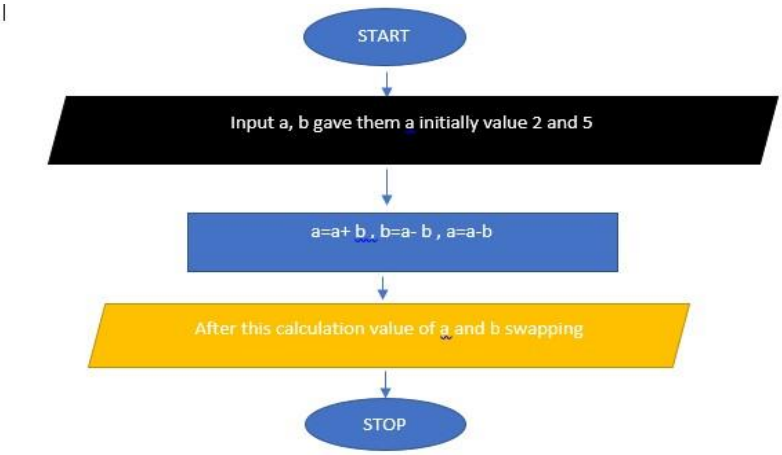
Output

```
SR.NO.  INSTRUCTION                     YELLOW          PINK
1.      Count before execution:         10              20
2.      Count after execution:          11              19

THIS PROGRAM IS PREPARED BY TANVI-22TCE135

Process returned 0 (0x0)   execution time : 0.036 s
Press any key to continue.
```

Questions

Have you understood the working of Pre-increment, Post-increment, Pre-decrement, Postdecrement?

Ans: Yes, By this practical I understood the concept of Pre-increment, Post-increment, Predecrement, Post-decrement.

Program: 3.3	Write a C program to swap two numbers (use two variables for collecting value from user) without using third
Flowchart	
Algorithm	**STEP 1**: Start **STEP 2**: Take two variables a=10 and b=20. **STEP 3**: Print "calculate the value of a". **STEP 4**: Print "calculate the value of b". **STEP 5**: Do following operations:- a=a+b b=a-b a=a-b **STEP 6**: Print "swapped value of a and b". **STEP 7**: End

Code

```c
#include<stdio.h>
void main()
{
int a=2,b=3;
printf("Enter a=");
scanf("%d",&a);
printf("enter b=");
scanf("%d",&b);
a=a+b;
b=a-b;
a=a-b;
printf("the swap value of a and b=%d,%d",a,b);
printf("\nThis program is prepared by 22CE004_Tanvi");
}
```

Output

```
Enter a=2
enter b=3
the swap value of a and b=3,2
This program is prepared by 22CE004_Tanvi
Process returned 42 (0x2A)   execution time : 3.468 s
Press any key to continue.
```

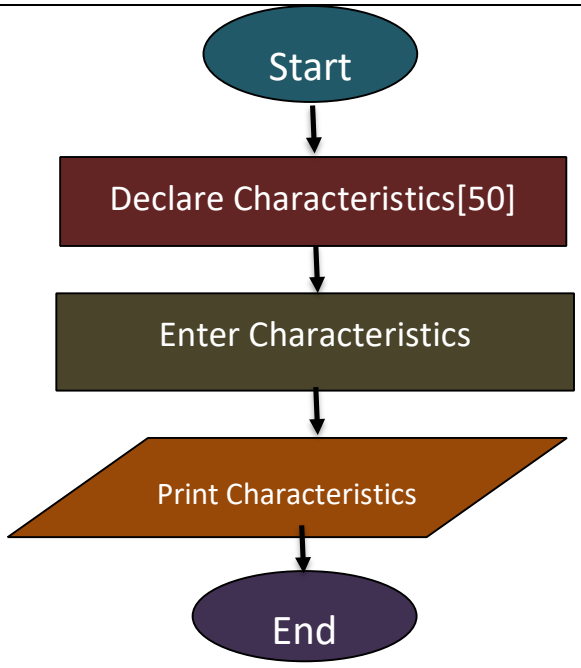
Sr.No.	Instruction	a	b
1	Before swapping	2	3
2	After swapping	3	2

Questions

Have you learned about, how we can use arithmetic operators for swapping the numbers?

ANS: YES, We can use arithmetic operators such as addition, subtraction for swapping of two numbers.

Sign: Grade:

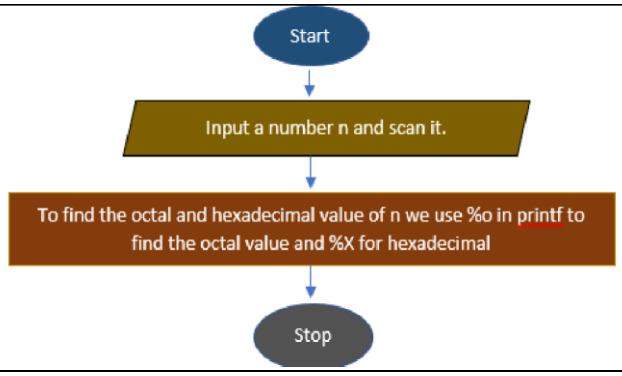
Program: 4.1(a)	Write something about your characteristics not more than 50 words using gets function and print out the same using puts function.
Flowchart	
Algorithm	**STEP 1**: Start **STEP 2**: Declare Characteristics[50] **STEP 3**: Enter Characteristics. **STEP 4**: Print Characteristics. **STEP 5**: End

Code	`#include<stdio.h>`
	`void main()`
	`{`
	`  char charactristics[50];`
	`  printf("charactristics :");`
	`  gets(charactristics);`
	`  puts(charactristics);`
	`  printf("\n\nTHIS PROGRAM IS PREPARED BY TANVI-22TCE135");`
	`  return 0;`
	`}`

Output	`charactristics :Here,I am Tanvi.Now I study in CSPIT,CHARUSAT UNIVERSITY.`
	`Here,I am Tanvi.Now I study in CSPIT,CHARUSAT UNIVERSITY.`
	
	`THIS PROGRAM IS PREPARED BY TANVI-22TCE135`
	`Process returned 44 (0x2C)  execution time : 121.607 s`
	`Press any key to continue.`

Questions	What is the significance of using gets and puts? Are they acting as replacement of any function? How?

	Ans: The significance of using gets and puts is to print the function in c and ask value from user in c respectively. They are acting as replacement of function printf and scanf in c. Where printf is used at that place the puts function is used to print the line in c and similarly to ask the value instead of scanf the function gets is used.

Program: 4.1(b)	Write a program to convert the decimal number into octal and hexadecimal format. Print hexadecimal and octal values for given inputs in expected outcomes.
Flowchart	
Algorithm	**STEP 1**: Start **STEP 2**: Take variable using int data type **STEP 3**: Define n=56 **STEP 4**: Print value of n in decimal, Octal and Hexadecimal and go to step 9 **STEP 5**: Define n=143 and go to step 4 **STEP 6**: Define n=0 and go to step 4 **STEP 7**: Define n=1 and go to step 4 **STEP 8**: Define n=-1 and go to step 4 **STEP 9**: End

Code	`#include<stdio.h>`
	`int main()`
	`{`
	`  int a;`
	`  printf("Enter the number:");`
	`  scanf("%d",&a);`
	`  printf("Octal value of number is:%o\n",a);`
	`  printf("Hexadecimal value of number is:%x\n",a);`
	`  printf("\nTHIS PROGRAM IS PREPARED BY TANVI-22CE004\n");`
	`  return 0;`
	`}`

Output	`Enter the number:22ce004`
	`Octal value of number is:26`
	`Hexadecimal value of number is:16`
	
	`THIS PROGRAM IS PREPARED BY TANVI-22CE004`
	
	`Process returned 0 (0x0)  execution time : 5.930 s`
	`Press any key to continue.`
	
	`Enter the number:56`
	`Octal value of number is:70`
	`Hexadecimal value of number is:38`
	
	`THIS PROGRAM IS PREPARED BY TANVI-22CE004`
	
	`Process returned 0 (0x0)  execution time : 14.745 s`
	`Press any key to continue.`

```
Enter the number:143
Octal value of number is:217
Hexadecimal value of number is:8f

THIS PROGRAM IS PREPARED BY TANVI-22CE004

Process returned 0 (0x0)   execution time : 2.230 s
Press any key to continue.
```

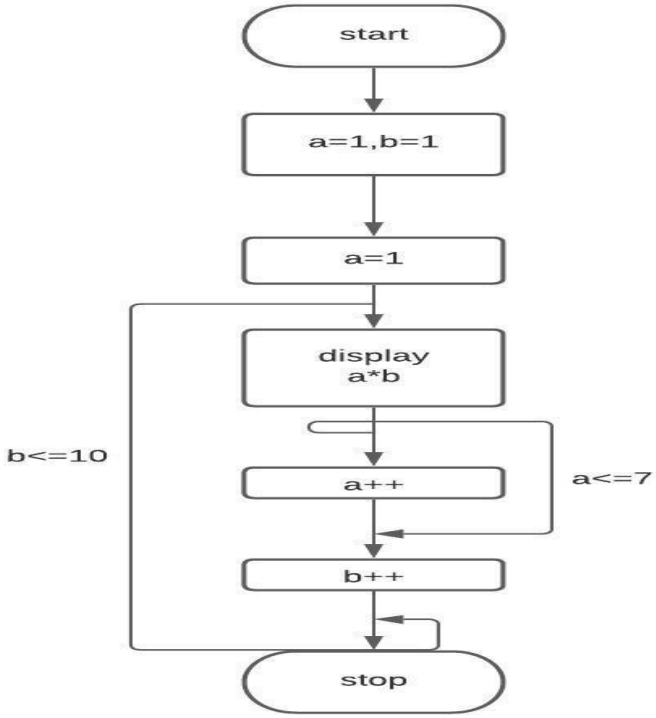
```
Enter the number:0
Octal value of number is:0
Hexadecimal value of number is:0

THIS PROGRAM IS PREPARED BY TANVI-22CE004

Process returned 0 (0x0)   execution time : 1.616 s
Press any key to continue.
```

```
Enter the number:1
Octal value of number is:1
Hexadecimal value of number is:1

THIS PROGRAM IS PREPARED BY TANVI-22CE004

Process returned 0 (0x0)   execution time : 1.090 s
Press any key to continue.
```

Program: 4.2

Write a C Program to Print multiplication table from 1 to 7 to achieve the following output. (Use #define directives and do while loop)

Flowchart

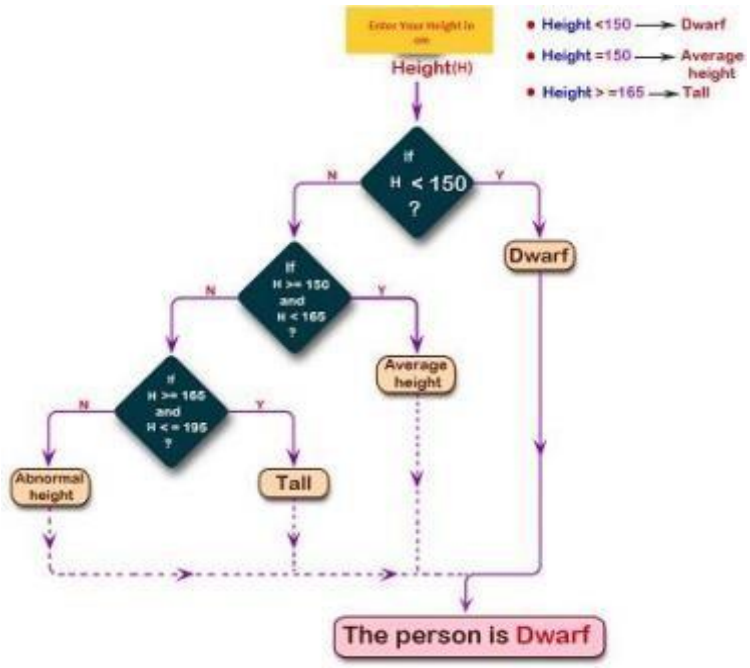


Algorithm	**STEP 1**: Start **STEP 2**: Input the number for which the multiplication table is to be generated.i.e7 **STEP 3**: Input the end value until which the table has to be generated.i.e10
	STEP 4: Repeat from i = 1 to end. **STEP 5:** Display the table values in the given output format.(num * i = num*i) **STEP 6**: End
Code	
Output	

```c
#include<stdio.h>
#define Rmax 10
#define Cmax 7
 int main()
{
     int r,c;
     printf("\t\tMULTIPLICATION TABLE (1 to 7)\n");
     printf("- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -\n");
     r=1;
     do
     {
        c=1;
          do
            {
               printf("\t%d",r*c);
               c++;
            }while(c<=Cmax);

              r++;
              printf("\n");
            }while(r<=Rmax);
    printf("- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -\n");
    printf("THIS PROGRAM IS PREPARED BY TANVI-22CE004");
}
```

```
                MULTIPLICATION TABLE (1 to 7)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        1       2       3       4       5       6       7
        2       4       6       8       10      12      14
        3       6       9       12      15      18      21
        4       8       12      16      20      24      28
        5       10      15      20      25      30      35
        6       12      18      24      30      36      42
        7       14      21      28      35      42      49
        8       16      24      32      40      48      56
        9       18      27      36      45      54      63
        10      20      30      40      50      60      70
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 0 (0x0)   execution time : 0.040 s
Press any key to continue.
```

Sign: Grade:

Program: 5.1	Write a C program for the given scenario from the flowchart. Note that you have to enter your own height in centimeters.
Flowchart	
Algorithm	**STEP 1**: Start **STEP 2**: Declare Height **STEP 3**: Take Height of each person which is expected in outcome from user **STEP 4**: Check if Height <150 **STEP 5**: Print "You are Dwarf" **STEP 6**: Check if Height>=150 && Height<165 **STEP 7**: Print "You have average height". **STEP 8**: Check if Height >=165 && Height<=195 **STEP 9**: Print "You are tall" **STEP 10**: Check if Height>195 **STEP 11**: Print "You have abnormal height" **STEP 12**: End

Code

```
#include<stdio.h>
int main()
{    int Height;
     printf("Enter your Height:");
     scanf("%d",&Height);
     if(Height<150)
    {         printf("Your height is Dwarf");
    }      else if(Height>=150 && Height<165)
    {         printf("Your height is Average height");
    }      else if(Height>=165 && Height<=195)
    {         printf("Your height is Tall");
    }     else     { printf("The person is dwarf");
    }      printf("\nTHIS PROGRAM IS PREPARED BY TANVI-22CE004");
    return 0;
}
```

Output

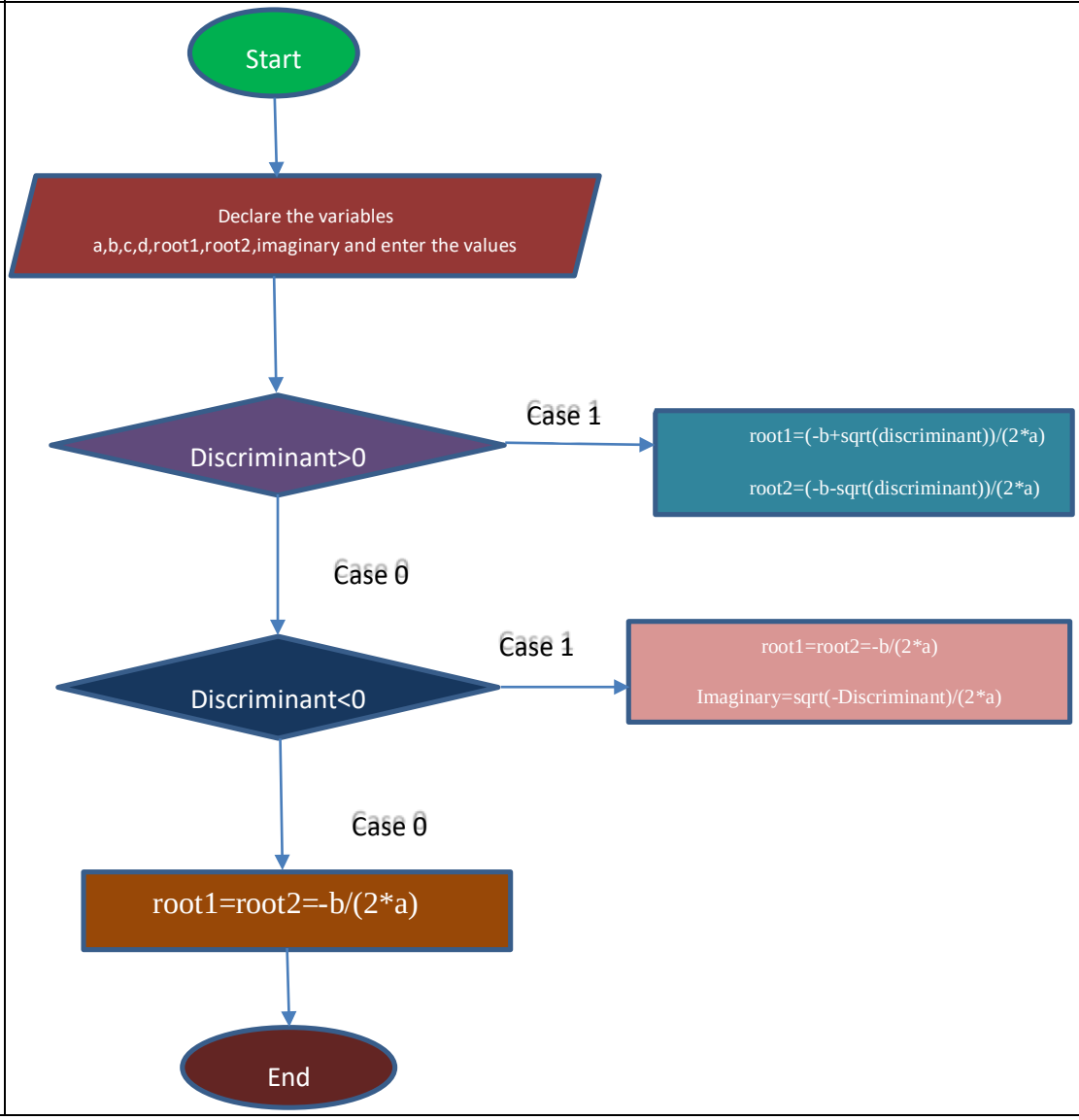
```
Enter your Height:150
Your height is Average height
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 0 (0x0)   execution time : 2.876 s
Press any key to continue.
```

```
Enter your Height:190
Your height is Tall
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 0 (0x0)   execution time : 5.318 s
Press any key to continue.
```

```
Enter your Height:200
The person is dwarf
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 0 (0x0)   execution time : 2.031 s
Press any key to continue.
```

```
Enter your Height:220
The person is dwarf
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 0 (0x0)   execution time : 1.312 s
Press any key to continue.
```

SR.NO.	INPUTS (cm)	Dwarf	Average	Tall	Abnormal
1	Your Height		✓		
2	Your mother's Height			✓	
3	Your father's Height	✓			
4	Your sibling's Height	✓			

program: 5.2	Write a C program to find all roots of a Quadratic equation using nested switch case. Take three user inputs from keyboard for finding the discriminant (b2 – 4ac). Use the concept of nested switch case for finding the roots of equation. Get the outputs for roots till 2 decimal points only.
Flowchart	

Algorithm	**STEP 1**: Start **STEP 2**: Declare variables a, b, c, d, root1, root2, imaginary using float data type **STEP 3**: Enter the value of a, b, c and get the value of discriminant by using the formula of d=(b*b)-(4*a*c). **STEP 4**: By switch case, If discriminant>0 case 1: root1=(-b+sqrt(discriminant))/(2*a), root2=(-b-sqrt(discriminant))/(2*a) then print the output and go to step 7.
	STEP 5: For case 0: Use switch case, discriminant<0 case 1: root1=root2=-b/(2*a) Imaginary=sqrt(-Discriminant)/(2*a) then print the output and go to step 7. **STEP 6**: For case 0: root1=root2=-b/(2*a) then print the output and go to step 7. **STEP 7**: End
Code	

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

void main()
{
    float a,b,c,dis,root1,root2,imaginary;

    printf(" Enter value of a");
    scanf("%f",&a);
    printf(" Enter value of b");
    scanf("%f",&b);
    printf(" Enter value of c");
    scanf("%f",&c);

    dis=b*b-4*a*c;
    printf(" Discriminant value : %.2f\n",dis);

    switch(dis>0)
  {
    case 1:
        root1=(-b+sqrt(dis))/(2*a);
        root2=(-b-sqrt(dis))/(2*a);

        printf(" root 1 : %.2f\n root 2 : %.2f\n",root1,root2);

    break;

    case 0:
        switch(dis<0)
        {
            case 1:
            root1=root2=-b/(2*a);
            imaginary=sqrt(-dis)/(2*a);

            printf(" root 1 : %.2f\n root 2 : %.2f\n imaginary : i%.2f\n",root1,root2,imaginary);

            break;

            case 0:
            root1=root2=-b/(2*a);

            printf(" root 1 : %.2f\n root 2 : %.2f\n",root1,root2);

            break;
        }
    break;
    }
    printf("THIS PROGRAM IS PREPARED BY TANVI-22CE004");
}
```

Output

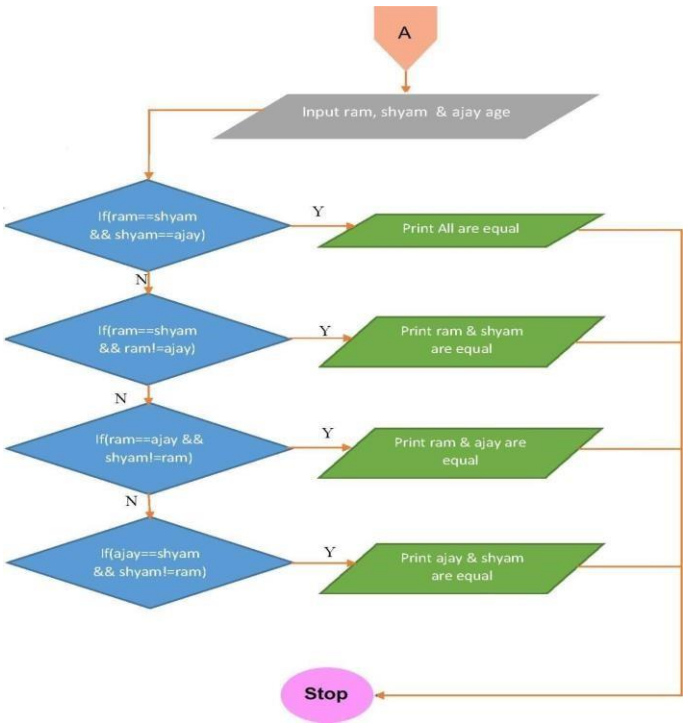
```
 Enter value of a
1
 Enter value of b
2
 Enter value of c
3
 Discriminant value : -8.00
 root 1 : -1.00
 root 2 : -1.00
 imaginary : i1.41
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 41 (0x29)   execution time : 7.652 s
Press any key to continue.
```

```
 Enter value of a
9
 Enter value of b
12
 Enter value of c
4
 Discriminant value : 0.00
 root 1 : -0.67
 root 2 : -0.67
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 41 (0x29)   execution time : 9.121 s
Press any key to continue.
```

```
 Enter value of a
3
 Enter value of b
-7
 Enter value of c
-5
 Discriminant value : 109.00
 root 1 : 2.91
 root 2 : -0.57
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 41 (0x29)   execution time : 9.763 s
Press any key to continue.
```

Questions

1. Have you learned about how to use normal switch case and nested switch case?
   Ans: YES by this practical I understood.
2. Is default case necessary for every switch case? **Ans**: No ,It's optional
3. What if break statement is not mentioned between two consecutive cases?
   Ans: If break statement is not mentioned between two consecutive cases then next case statements will be executed until break appears.

Program: 5.3	If the ages of Ram, Shyam and Ajay are input through the keyboard, write a program to determine the youngest of the three. If all of them are of same age then print that "All are of same age".
Flowchart	
Algorithm	**STEP 1**: Start **STEP 2**: Declare integer variable ram , shyam , ajay **STEP 3**: Take input of ages from user **STEP 4:** if ram=shyam and shyam=ajay print "All are equal" else go to step 5 **STEP 5:** if ram=ajay and ram ≠ shyam print "Ram and Ajay are equal" else go to step 6 **STEP 6**: if ram=shyam and ram ≠ ajay print "Ram and Shyam are equal" else go to step 7 **STEP 7:** if shyam=ajay and ram ≠ shyam print "Shyam and Ajay are equal" else go to step8. **STEP 8:** if ram<shyam go to step 9 else go to step 11 **STEP 9**: if ram<ajay print "Ram is youngest" go to step 10 **STEP 10**: if ajay<ram print"Ajay is youngest" **STEP 11:** if shyam<ajay print "Shyam is youngest" else go to step 11 **STEP 12**: if ajay<ram print"Ajay is youngest" **STEP 13:** Stop

Code

```c
#include<stdio.h>
#include<conio.h>
void main()
{
    int r,a,s;

    printf("Enter age of Ram : ");
    scanf("%d",&r);
    printf("Enter age of Shyam : ");
    scanf("%d",&s);
    printf("Enter age of Ajay : ");
    scanf("%d",&a);

    if(r==s && s==a)
    {
        printf("All are equal");
    }
    else
    {
        if(r==s)
        {
            printf("Ram and Shyam are same");
        }
        else
        {
            if(s==a)
            {
                printf("Shyam and Ajay are same");
            }
            else
            {
                if(r==a)
                {
                printf("Ram and Ajay are same");
                }

                else
                {
                    if(r<s && r<a)
                    {
                        printf("Ram is youngest");
                    }
                    else
                    {
                        if(s<a)
                        {
                            printf("Shyam is youngest");
                        }
                    else
                        {
                            printf("Ajay is youngest");
                        }
                    }

                }
            }
        }
    }
      printf("\nTHIS PROGRAM IS PREPARED BY TANVI-22CE004\n\n");
}
```

Output

```
Enter age of Ram : 18
Enter age of Shyam : 18
Enter age of Ajay : 18
All are equal
THIS PROGRAM IS PREPARED BY TANVI-22CE004


Process returned 0 (0x0)   execution time : 4.593 s
Press any key to continue.
```

```
Enter age of Ram : 18
Enter age of Shyam : 19
Enter age of Ajay : 20
Ram is youngest
THIS PROGRAM IS PREPARED BY TANVI-22CE004


Process returned 0 (0x0)   execution time : 9.996 s
Press any key to continue.
```

```
Enter age of Ram : 19
Enter age of Shyam : 18
Enter age of Ajay : 20
Shyam is youngest
THIS PROGRAM IS PREPARED BY TANVI-22CE004


Process returned 0 (0x0)   execution time : 12.547 s
Press any key to continue.
```

```
Enter age of Ram : 19
Enter age of Shyam : 20
Enter age of Ajay : 18
Ajay is youngest
THIS PROGRAM IS PREPARED BY TANVI-22CE004


Process returned 0 (0x0)   execution time : 6.025 s
Press any key to continue.
```

```
Enter age of Ram : 18
Enter age of Shyam : 18
Enter age of Ajay : 19
Ram and Shyam are same
THIS PROGRAM IS PREPARED BY TANVI-22CE004


Process returned 0 (0x0)   execution time : 5.761 s
Press any key to continue.
```

```
Enter age of Ram : 19
Enter age of Shyam : 20
Enter age of Ajay : 20
Shyam and Ajay are same
THIS PROGRAM IS PREPARED BY TANVI-22CE004


Process returned 0 (0x0)   execution time : 4.548 s
Press any key to continue.
```

```
Enter age of Ram : 18
Enter age of Shyam : 19
Enter age of Ajay : 18
Ram and Ajay are same
THIS PROGRAM IS PREPARED BY TANVI-22CE004


Process returned 0 (0x0)   execution time : 5.479 s
Press any key to continue.
```

Questions

1. Have you tried merging the concepts of Nested if else and else if ladder in this scenario?

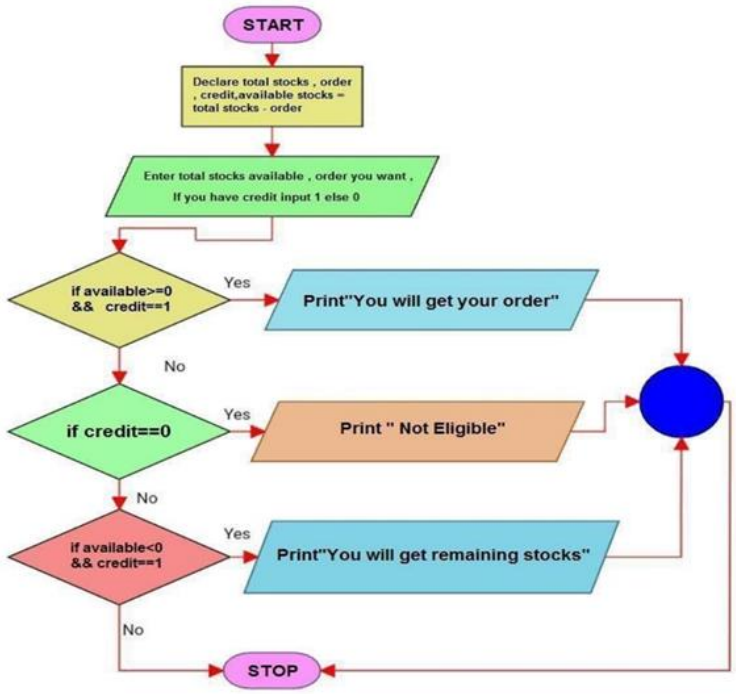
Ans: yes, we tried the merging og nested and ladder if else because in the question we have 5 questions in which ladder use in 4 questions but in case two where there is age of tri is different we use nested if else .

2. Differentiate the concept of Nested if else and else if ladder.

Ans: if else nested first condition check if our first condition true an we check another condition its depend on 1 condition true and ladder if else in if first condition false then check another condition else if.

Program: 5.4	The policy followed by a company to process customer order is a given by the following rules: Suppose stock=100 a) If a customer order is less than or equal to that in stock and ‘ has credit ‘ is okay, supply has a requirement. b) If ‘ has credit ‘ is not okay do not supply. Send him intimation. c) If ‘ has credit ‘ is okay but the item in stock is less than has ordered, inform ‘ out of stock ‘ and intimate him that the balance will be refunded. Write a C program to implement the company
Algorithm	Step1: start Step2: display do you have credit. Step3: if yes and stock>=order Stock=stock -order Else if stock < order Out of stock Step4: if no credit then display order rejected Step5: stop.

Flowchart:



Code

```c
#include <stdio.h>
#include <ctype.h>
void main()
{
    int stock, order;
    char has_credit;

    printf("what's current stock?");
    scanf("%d", &stock);

    printf("does the customer having any credit? (y/n) ");
    scanf("%s", &has_credit);

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

    if (order <= stock && tolower(has_credit) == 'y')
        printf("your order will be shiiped to your address soon...\n\tQuantity: %d\n", order);
    else if (tolower(has_credit) != 'y')
        printf("Your order isnt't completed as you have not cleared you credits yet.\n");
    else if (tolower(has_credit) == 'y' && order > stock)
        printf("Your order has been cancelled as the order is out of stock atm.\n");
        printf("This program is prepared by 22CE004_Tanvi");
}
```

Output

```
what's current stock?
100
does the customer having any credit? (y/n) y
enter the order: 20
your order will be shiiped to your address soon...
        Quantity: 20
This program is prepared by 22CE004_Tanvi
Process returned 41 (0x29)   execution time : 10.452 s
Press any key to continue.
```

Sr No.	Inputs			Output
	Credit	Order	Stock	
1	Y or y	20	100	Supply
2	N or n	50	80	Not supply
3	Y or y	50	80	Supply
4	Y or y	70	30	Out of stock
5	Y or y	30	30	Out of stock

❖ Questions-Answer:

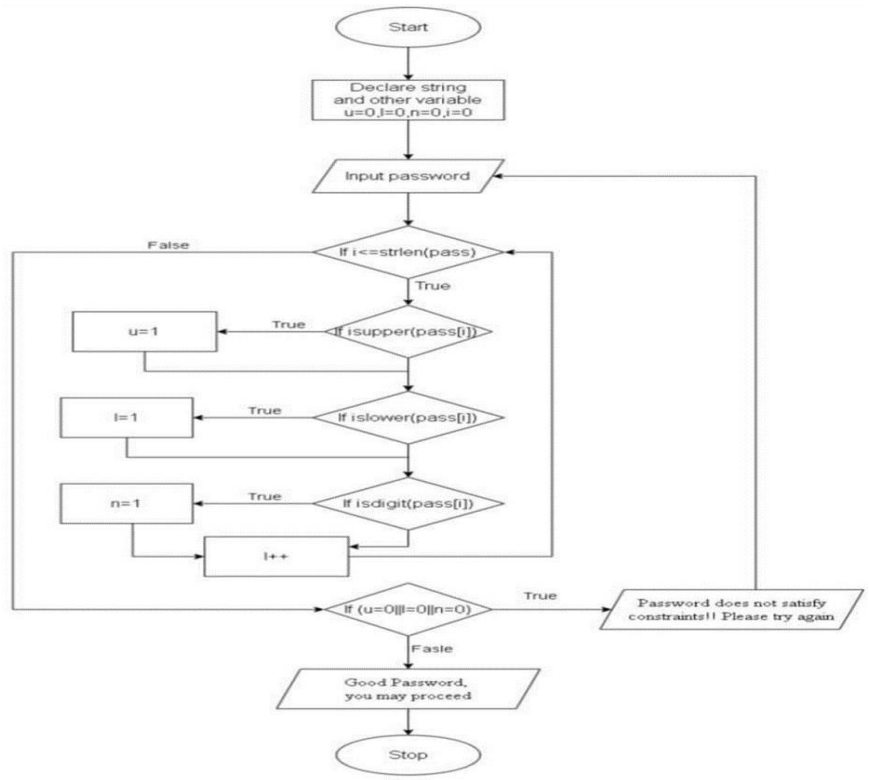
1. Which kind of logic have you used for building this program? If else if ladder or nested if else statements?

Ans:- Else If Ladder

❖ Conclusion:

We can check multiple condition in else if ladder.

Sign: Grade:

Program: 6.1	There is a person, who is asked to enter the alphanumeric password for registering into an ecommerce website for purchasing products from website.But he is not aware about, what does Alphanumeric mean. So, he tries entering various combinations 5 times, but he fails to create such password.So let us help him by writing a C program to validate his password.Constraints for writing password are it should have combination of lowercase, uppercase and digit. **Note:** Use Do while loop, and give print appropriate outputs on incorrect validations.
Flowchart	
Algorithm	**STEP-1**: Start **STEP-2**: Char pass[100];int i, alpha = 0, upper = 0,lower = 0, digit = 0 **STEP-3**: If i <= strlen(pass), i is <= pass length goto Step-4 else goto Step **STEP-4** :isdigit(pass[i]) check if character is digit then digit=1 and goto Step 5 **STEP-5:** isalpha(pass[i]) check if character is alphabet gotoStep-6 Else I++ **STEP-6**: isupper(pass[i]) check if character is in uppercase then true Else islower(pass[i]) check if character is in lowercase **STEP-7**: Alpha check if pass contains alphabet then print valid password else gotstep8 **STEP-8:** Lower check if pass contains lowercase then print valid password goto step9 **STEP-9:** Digit check if pass contains digit then print valid password goto **STEP-10**: If one of digit, alpha, upper, lower is 0 then print valid password **STEP-11**: End

Code

```
#include<stdio.h>
#include<string.h>
#include<ctype.h>
int main()
{ char pass[20];
  int lower=0,upper=0,digit=0,i;
     do
    {      printf("\nEnter password:");
           scanf("%s",pass);
         for(i=0;i<=strlen(pass);i++)
        {             if(isupper(pass[i]))
            {                 upper=1;
            }             else if(islower(pass[i]))
            {                 lower=1;
            }             else if(isdigit(pass[i]))
            {                 digit=1;
            }
        }
        if(lower==0 || upper==0 || digit==0)
            {
                printf("Password invalid");
            }
        else
            {
                printf("Good password,you may process");
            }
    }
     while(lower==0 || upper==0 || digit==0);

    printf("\nThis program is prepared by TANVI-22CE004");

    return 0;
}
```

Output

```
Enter password:Tanvibalsara123
Good password,you may process
This program is prepared by TANVI-22CE004
Process returned 0 (0x0)   execution time : 11.837 s
Press any key to continue.
```

Questions

1. Have you understood working of do...while loop? Do mention the syntax of this loop.

Ans:->Yes,

Do{
Statement;
}while(condition)

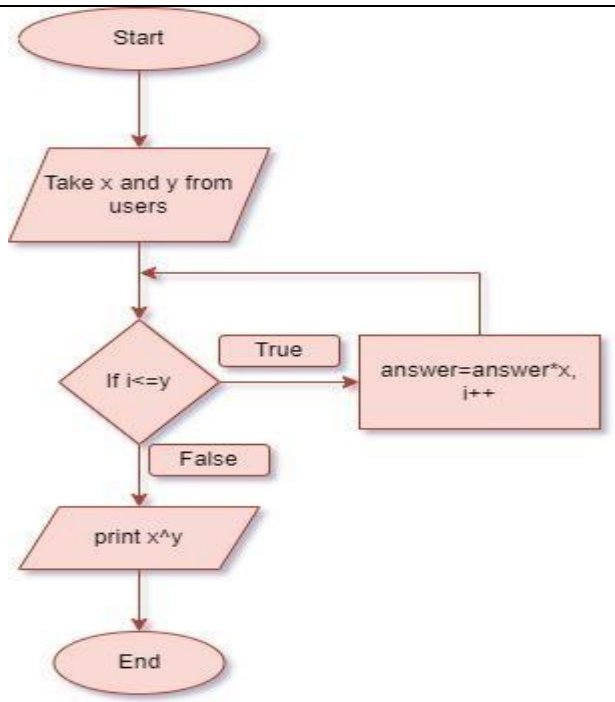
2.Have you used for loop in this program?

Ans:- >Yes

3.What is goto statement? How is it useful?

Ans: The goto statement can be used to alter the flow of control in a program. Although the goto statement can be used to create loops with finite repetition times, use of other loop structures such as for, while, and do while is recommended. The use of the goto statement requires a label to be defined in the program.

Program: 6.2	Two numbers are entered through the keyboard. Write a program to find the value of one number raised to the power of another. (Use While loop)

Flowchart	
Algorithm	**STEP-1**: Start **STEP-2**: Take x and y from users **STEP-3:** If i<=y then goto step -4 else goto step-5 **STEP-4**: answer=answer*x, i++ **STEP-5:** Print x^y **STEP-6**: End

Code

```
#include<stdio.h>
int main()
{
   int a,b,p,ans;
   printf("Enter a: ");
   scanf("%d",&a);
    printf("Enter b: ");
   scanf("%d",&b);


   ans=1;
   p=1;
   for(p=1;p<=b;p++)
   {
      ans=a*ans;
      printf("\nAnswer is  %d\n",ans);
      return 0;
   }
   printf("THIS PROGRAM IS PREPARED BY TANVI-22TCE135");
}
```

Output

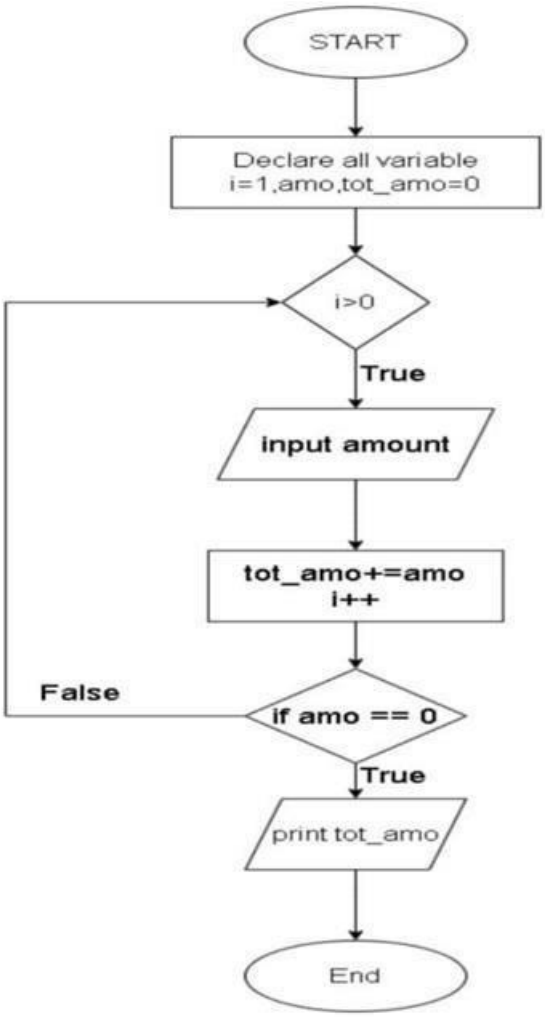
```
Enter a: 3
Enter b: 4

Answer is  3

Process returned 0 (0x0)   execution time : 3.504 s
Press any key to continue.
```

Questions

1. Have you understood the concept of while loop? if yes write its syntax here. **Ans**->yes,

```
while(condition)
 {
  Statement;
  }
```

Program: 6.3	Write a C program for Big bazaar cashier to count the amount to be collected from the customer. Cashier will enter the numbers one after another for each item and to get the summation of entered numbers, he has to enter 0. (Use for loop) (Hint: Break statement can be used)

Flowchart	
Algorithm	**STEP-1**: Start **STEP-2**: Declare total, price ,i **STEP-3:** Take price from user **STEP-4**: If price=0 then go to step 6 else goto step 5 **STEP-5:** Total=total+price **STEP-6**: Print total **STEP 7**: Stop

Code

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int i,amount,sum=0;

    for(; ;)
    {
        printf("Enter amount : ");
        scanf("%d",&amount);

        sum=sum+amount;
        if(amount==0)
            break;
    }
    printf("\nThe sum is : %d\n",sum);
    printf("THIS PROGRAM IS PREPARED BY TANVI-22CE004");
}
```

Output

```
Enter amount : 200
Enter amount : 400
Enter amount : 0

The sum is : 600
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 41 (0x29)   execution time : 8.282 s
Press any key to continue.
```

Question

1. Have you learned the concept of for loop using above given scenario? Explain what does 'i' stands for in the for() loop, consider the given example below. **eg. for(i=0;i<10;i++)**

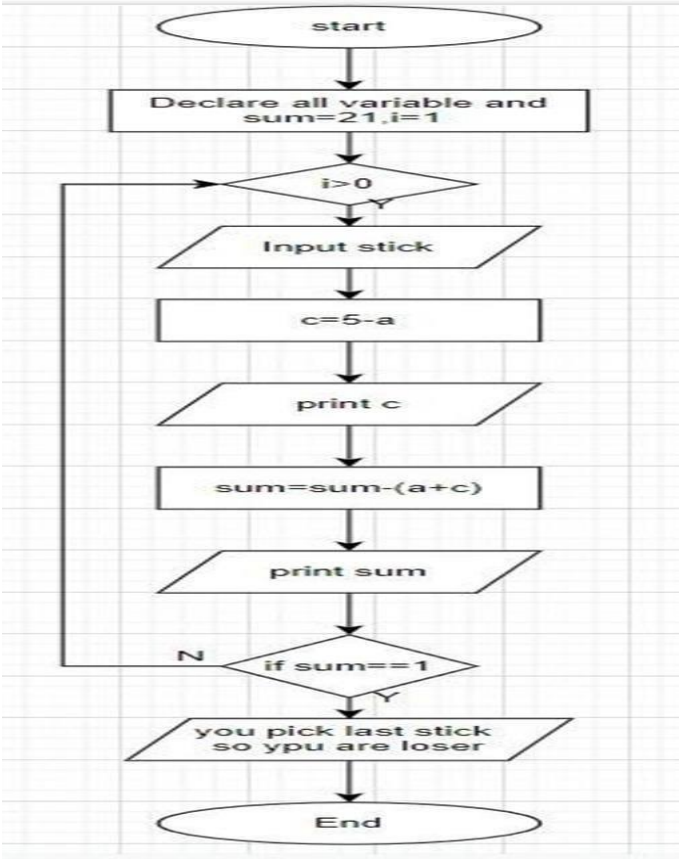
Ans: ->yes, Here I show, for how much time the loop going to be execute It means your loop start from 0 Goes till it is still less than 10 i.e upto 9. And increases by a step of 1. That is it will go from 0 to 9 i.e the loop runs 10 times.

Program: 6.4

Write a program for a match-stick game between the computer and a user. Your Program should ensure that the computer always wins. Rules for the games are as follows:

- There are 21 match-sticks.
- The computer asks the player to pick 1, 2, 3, or 4 match-sticks.
- After the person picks, the computer does its picking.
- Whoever is forced to pick up the last match-stick loses the game.

Use while loop, break and Continue Statements.

Flowchart	
Algorithm	**STEP 1**: start. **STEP 2:** declare variables :match_stick=21,player,comp,left=21. **STEP 3:** if left>0 **STEP 4:** enter the value of 'player' in 1 to 4 from user. **STEP 5:** if 'player'>4 or player<1. --> go to step 4. **STEP 6:** left = left - player. **STEP 7:** comp=5-player. **STEP 8:** left = left - comp. **STEP 9:** if left==1,if true then print "you have lost",if false then continue the loop. **STEP 10:** go to step 3. **STEP 11**: Stop

Code

```
#include<stdio.h>

int main()
{
    int m = 21, p, c;

    while(1)
    {
        printf("\nNumber of Match sticks left = %d", m);
        printf("\nPick 1 or 2 or 3 or 4 matches");
        scanf("%d", &p);

        if(p < 1 || p > 4)
        {
            continue;
        }
        m=m-p;

        printf("\nNumber of matches left = %d\n", m);

        c=5-p;

        printf("out of which computer picked up %d\n",c);

        m=m-c;

        if(m == 1)
        {
            printf("\nNumber of matches left = %d\n", m);
            printf("You lost the Game\n");
            break;
        }
    }
    printf("THIS PROGRAM IS PREPARED BY TANVI-22CE004");
    return 0;
}
```

Output

```
Number of Match sticks left = 21
Pick 1 or 2 or 3 or 4 matches1

Number of matches left = 20
out of which computer picked up 4

Number of Match sticks left = 16
Pick 1 or 2 or 3 or 4 matches2

Number of matches left = 14
out of which computer picked up 3

Number of Match sticks left = 11
Pick 1 or 2 or 3 or 4 matches3

Number of matches left = 8
out of which computer picked up 2

Number of Match sticks left = 6
Pick 1 or 2 or 3 or 4 matches1

Number of matches left = 5
out of which computer picked up 4

Number of matches left = 1
You lost the Game
THIS PROGRAM IS PREPARED BY TANVI-22CE004
Process returned 0 (0x0)   execution time : 32.906 s
Press any key to continue.
```

Sign: Grade: