**Lab Assignment 4**

1. a) WAP to find the largest among three numbers using (i) nested if statements, (ii) else if statements,

(iii) conditional operator ?:

b) WAP to check whether a character is an alphabet, digit. If it is an alphabet then check it is in

upper case or lower case. If it is in lower case then check it is vowel or consonant. If it is a digit

then check whether it is divisible by 2 and 5 or not.

Ans. A)

1. Input:

#include<stdio.h>

#include<math.h>

int main()

{int a,b,c;

printf("enter the value of a");

scanf("%d",&a);

printf("enter the value of b");

scanf("%d",&b);

printf("enter the value of c");

scanf("%d",&c);

if(a>=b)

{if(a>=c)printf("The largest number is %d",a);

else printf("The largest number is %d",c);}

else{ if(b>=c) printf("The largest number is %d",b);

else printf("The largest number is %d",c);}

return 0;}

Output:

1. Input:

#include<stdio.h>

#include<math.h>

int main()

{int a,b,c;

printf("enter the value of a");

scanf("%d",&a);

printf("enter the value of b");

scanf("%d",&b);

printf("enter the value of c");

scanf("%d",&c);

if(a>=b&&a>=c)printf("the largest number is %d",a);

else if(b>=c&&b>a)printf("the largest number is %d",b);

else printf("the largest number is %d",c);

return 0;}

Output:

1. Input:

#include<stdio.h>

#include<math.h>

int main()

{int a,b,c,r;

printf("enter the value of a");

scanf("%d",&a);

printf("enter the value of b");

scanf("%d",&b);

printf("enter the value of c");

scanf("%d",&c);

r=a>=b?a>=c?a:c:b>=c?b:c;

printf("the largest number is %d",r);

return 0;}

B)

#include<stdio.h>

#include<math.h>

int main()

{char a;

printf("enter the value of a");

scanf("%c",&a);

if((a>='a'&&a<='z')||(a>='A'&&a<='Z'))

{ printf("the entered value is an alphabet\n");

if(a>='a'&&a<='z')

{ printf("the entered value is lower case\n");

if(a=='a'||a=='e'||a=='i'||a=='o'||a=='u')

printf("the entered value is a vowel\n");}

else printf("the entered value is upper case\n");}

else if(a>='0'&&a<='9')

{printf("the entered value is a digit\n");

if(a%'2'=='0' && a%'5'=='0')

printf("the digit is divisible by 2 and 5\n");

else printf("the digit is not divisible by 2 and 5\n");}

else printf("the entered value is not valid\n");

return 0;}

2. WAP to calculate and print the Electricity bill of a given customer. The customer id., name and unit

consumed by the user should be taken from the keyboard and display the total amount to pay by the

customer. The charges are as follow :

Unit Charge/unit

upto 199 @1.20

200 and above

but less than 400 @1.50

400 and above

but less than 600 @1.80

600 and above @2.00

If bill exceeds Rs. 400 then a surcharge of 15% will be charged and the minimum bill should be of

Rs. 100/-. (Hint: Input: 1001, Naresh, 800, Output : Customer IDNO: 1001, Customer name :

Naresh, unit consumed : 800 , Amount charges @Rs. 2.00 per unit : 1600.00 , Surcharge amount :

240.00, Net amount paid by the customer: 1840.00)

Input:

#include<stdio.h>

#include<math.h>

int main()

{

int cid;

float unit,charge,amount,surcharge=0;

char cname[20];

printf("enter your customer id");

scanf("%d",&cid);

printf("enter your Name");

scanf("%s",&cname);

printf("enter your units consumed");

scanf("%f",&unit);

if(unit<200)

charge=1.20;

else if(unit<400&&unit>=200)

charge=1.50;

else if(unit>=400&&unit<600)

charge=1.80;

else charge=2.00;

amount=unit\*charge;

if(amount<100)

amount=100;

if(amount>400)

{

surcharge=amount\*0.15;

}

printf("Customer IDNO: %d, Customer name: %s,Units consumed: %f, Amount charges @Rs %f per unit: %f, Surcharge amount: %f, net amount paid by the customer: %f ",cid,cname,unit,charge,amount,surcharge,amount+surcharge);

return 0;

}

Output:

3. WAP to accept a grade and declare the equivalent description :

Grade Description

E Excellent

V Very Good

G Good

A Average

F Fail

(Hint: Input: Input the Grade: V, Output: You have chosen: Very Good.)

Ans. Input:

#include<stdio.h>

#include<math.h>

int main()

{

char grade;

printf("enter your grade");

scanf("%c",&grade);

if(grade=='E')

printf("your grade: Excellent");

else if(grade=='V')

printf("your grade: Very Good");

else if(grade=='G')

printf("your grade: Good");

else if(grade=='A')

printf("your grade: Average");

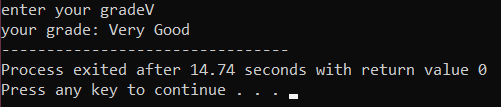
else if(grade=='F')

printf("your grade: Fail");

return 0;

}

Output:



4. WAP to read temperature in centigrade and display a suitable message according to temperature as

mentioned below :

Temp < 0 then Freezing weather

Temp 0-10 then Very Cold weather

Temp 10-20 then Cold weather

Temp 20-30 then Normal temperature

Temp 30-40 then Its Hot

Temp >=40 then Its Very Hot

(Hint: Input : 28 Output : Normal temperature.)

Ans. Input:

#include<stdio.h>

#include<math.h>

int main()

{

int temp;

printf("enter temp");

scanf("%d",&temp);

if(temp<0)

printf("Freezing weather");

else if(temp>=0&&temp<10)

printf("very cold weather");

else if(temp>=10&&temp<20)

printf("Cold weather");

else if(temp>=20&&temp<30)

printf("Normal Temperature");

else if(temp>=30&&temp<40)

printf("Its Hot");

else if(temp>=40)

printf("Very Hot");

return 0;

}

Output:

A screenshot of a cell phone

Description automatically generated

5. WAP to find the eligibility of admission of a student for a professional institute based on the

following criteria:

Marks in Mathematics >=65,

Marks in Physics >=55,

Marks in Chemistry >=60,

Total in all three subjects >=190 or Total in Mathematics and Chemistry >=130

(Hint: Input: marks obtained in Physics: 55, marks obtained in Chemistry: 61

marks obtained in Mathematics: 72, Output: The candidate is eligible for admission.)

Ans. Input:

#include<stdio.h>

#include<math.h>

int main()

{

int m,p,c;

printf("enter marks of mathematics");

scanf("%d",&m);

printf("enter marks of physics");

scanf("%d",&p);

printf("enter marks of chemistry");

scanf("%d",&c);

if((m>=65)&&(p>=55)&&(c>=60)&&((m+p+c>=190)||(m+c>=130)))

printf("The candidate is eligible for admission");

else printf("The candidate is not eligible for admission");

return 0;

}

Output:

A screenshot of a cell phone

Description automatically generated