## EXPERIMENT NUMBER –3

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CLASS AND GROUP – *CSE 34 - B*

SEMESTER – *1st*

### AIM OF THE EXPERIMENT –

**Practical 3.1:** In a class of n students the boys to girls ratio is p:q. Find no. boys and girls in the class and print :

1)    If boys are more than or equal to 70% in the class then print gender partiality in education

2)    If difference of boys are girls is diff and in range -5<=diff<=5 then print equal opportunities of education for both

3)    If girls are more than equal to 70% then print girls dominating in education.

4)    For all others cases print no conclusion drawn

ALGORITHM –

#include <stdio.h>

int main()

{

   int n, p, q, b, bp, g, gp, d;

   printf("Enter the total number of students in the class -");

   scanf("%d",&n);

   printf("\nEnter the ratio of boys to girls in the class =");

   scanf("%d %d",&p,&g);

   b = n \* p / (p+q);

   g = n - b;

   bp = (boys \*100/n);

   gp = (girls \*100/n);

   d = b - g;

   printf("\number of boys in the class= %d\number of girls in the class= %d\n",b,g);

   printf("\percentage of boys in the class= %d\percentage of girls in the class= %d\n",bp,gp);

   printf("\difference between girls and boys in the class is %d",d);

   if (diff > -5 && diff <5)

    printf("\n Equal Opportunities of education are there for both boys and girls\n");

   else if (bp >= 70)

    printf("There is gender partiality in education as boys percentage is %d\n",bp);

   else if(gp > 70)

    printf("Girls are dominating in education as girls percentage is %d\n",gp);

   else

     printf("There is no conclusion drawn from the given stats\n");

   return 0;

}

### OUTPUT

### **Enter the total number of students in the class**

### **10**

### **Enter the ratio of boys to girls in the class**

### **4**

### **6**

### **Number of boys in the class= 4**

### **Number of girls in the class= 6**

### **Percentage of boys in the class= 40**

### **Percentage of girls in the class= 60**

### **Difference between girls and boys in the class is -2**

### **Equal Opportunities of education are there for both boys and girls**

### AIM OF THE EXPERIMENT –

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### **Practical 3.2:** Write a menu driven program that allow the user to perform any one of the following operations based on the input given by user

i       Check number is even or odd

ii      Check number is positive or negative

iii     Printing square of the number

iv     Printing square root of the number (use math.h)

Use switch statement for a menu driven program. Also, use validation checks wherever necessary.

ALGORITHM –

*#include<stdio.h>*

*#include<stdio.h>*

### *#include<stdio.h>*

### *#include<math.h>*

### *#include<stdlib.h>*

### *int main()*

### *{*

### *int a,b,c,d,e,f,z,result;*

### 

### *{*

### 

### *printf("\nto find odd or even = 1");*

### *printf("\nto find whether the number is positive or negative = 2");*

### *printf("\nto find square = 3");*

### *printf("\nto find square root = 4");*

### *printf("\nto exit = 5");*

### *printf("\nSelect what you want to do =");*

### *scanf("%d", &z);*

### *switch(z)*

### *{*

### *case 1:*

### *printf("enter a number A=");*

### *scanf("%d",&a);*

### *c=a%2;*

### *if(c==0)*

### *printf("the numper is even");*

### *else*

### *printf("the number is odd");*

### *break;*

### *case 2:*

### *printf("enter a number B=");*

### *scanf("%d",&b);*

### *if(b>0)*

### *printf("the number is positive");*

### *else*

### *printf("the number is negative");*

### *break;*

### *case 3:*

### *printf("enter a number E =");*

### *scanf("%d",&e);*

### *d=e\*e;*

### *printf("the square of E=%d",d);*

### *break;*

### *case 4:*

### *printf("enter a number F=");*

### *scanf("%f",&f);*

### *result=sqrt(f);*

### *printf("the square root F=%d",result);*

### *break;*

### *case 5:*

### *exit(0);*

### *}*

### *}*

### *return 0;*

### *}*

### 

### OUTPUT

### to find odd or even = 1

### to find whether the number is positive or negative = 2

### to find square = 3

### to find square root = 4

### to exit = 5

### Select what you want to do =3

### enter a number E = 15

### the square of E=225

### AIM OF THE EXPERIMENT –

**Practical 3.3:** Amba Aambika and Ambalika have money in the ratio x:y:z. All go to market and spend money in ratio p:q:r .total money they have initially is Rs. N .After spending money in the market who has maximum amount left with ?

### ALGORITHM –

#include<stdio.h>

int main()

{

int x,y,z,p,q,r,g,h,i,n;

printf("Enter money ratio:x,y,z\n");

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

printf("Enter spending money ratio:p,q,r\n");

scanf("%d%d%d",&p,&q,&r);

printf("Enter saving money ratio:g,h,i\n");

scanf("%d%d%d",&g,&h,&i);

printf("Enter total money\n");

scanf("%d",&n);

int r1=n/(x+y+z);

int n1,n2,n3;

n1=r1\*x;

n2=r1\*y;

n3=r1\*z;

float x1,x2;

if((p\*h)-(g\*q) == 0)

   printf("\nWe can't find value of x1 and x2 \n");

else

   {

       x1 = (float)((n1 \* h) - (g \* n2)) / ((p \* h) - (q \* g));

       x2 = (float)((n2 \* p) - (n1 \* q)) / ((p \* h) - (q \* g));

   }

float m1,m2,m3;

m1=x2\*g;

m2=x2\*h;

m3=x2\*i;

if(m1>m2)

{

           if(m1>m3)

                       printf("amba has left with max. amount\n");

        else

                       printf("ambalika has left with max. amount\n");

}

 else if(m2>m3)

                       printf("aambika has left with max. amount\n");

else

                       printf("ambalika has left with max. amount\n");

return 0;

}

### OUTPUT

### Enter money ratio:x,y,z

### 4

### 5

### 3

### Enter spending money ratio:p,q,r

### 2

### 5

### 3

### Enter saving money ratio:g,h,i

### 3

### 4

### 5

### Enter total money

### 10000000

### ambalika has left with max. amount

### AIM OF THE EXPERIMENT –

**Practical 3.4:** While travelling in a train, you observe some college students pulling the alarm chain simply to get down at their desired point. Out of n students m<=n times students pull the chain .You have to print according to the following:

1)    If m is >=80 % of n then print strict action is required to restrict this event

2)    If m is between 50 to 80 % then print guidelines should be issued

3)    If between 10 to 50% then print request to restrict the event

4)    If less than 10% then print No action required

### ALGORITHM –

### #include<stdio.h>

### int main()

### {

### 

### int n,m;

### printf("Enter total number of students in the train\n");

### scanf("%d",&n);

### printf("Enter no. of students pull the chain\n");

### scanf("%d",&m);

### float percentage = ((float)m/n)\*100;

### if (m>n)

### printf("number of students who pulled can not be greater than students present in the train\n");

### else

### {

### 

### if(percentage >= 80)

### printf("Strict Action Required\n");

### else if(percentage>=50 && percentage<=80)

### printf("Guidlines to be issued\n");

### else if(percentage>=10 && percentage<50)

### printf("Restrict the action\n");

### else if(percentage<10)

### printf("No action Required\n");

### }

### return 0;

### }

### OUTPUT

Enter total number of students in the train

100

Enter no. of students pull the chain

45

Restrict the action

LEARNING OUTCOMES

|  |
| --- |
| * Identify situations where computational methods would be useful. |
| * Approach the programming tasks using techniques learnt and write pseudo-code. |
| * Choose the right data representation formats based on the requirements of the problem. |
| * Use the comparisons and limitations of the various programming constructs and choose the right one for the task. |

EVALUATION COLUMN (To be filled by concerned faculty only)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Parameters** | **Maximum**  **Marks** | **Marks**  **Obtained** |
| 1. | Student’s performance while executing the  program in Computer Lab | 12 |  |
| 2. | Completion of worksheet with learning outcomes and program’s output along with cleanliness and discipline. | 10 |  |
| 3. | Clarification of theoretical concepts | 8 |  |
| 4. | Total Marks | 30 |  |
| 5. | Teacher’s Signature (with date) |  | |