***EXPERIMENT NUMBER –1***

STUDENT’S NAME – *Yash Gupta*

STUDENT’S UID – *20BCS5009*

CLASS AND GROUP – *CSE Group B*

SEMESTER – *1st*

TOPIC OF EXPERIMENT – *Problem Solving using C*

AIM OF THE EXPERIMENT –

* *****LEARN HOW TO PERFORM INPUT OUTPUT OPERATIONS USING* C.****

ALGORITHM –

**Practical 1.1:** Write a program to input following details of a under-graduate student

i       Name (string)

ii      Age (integer)

iii     Contact number (long long integer)

iv     Percentage in metric class (float / double)

Practical 1.2: A cube having a side of 6 cm is painted red on all the faces and then cut into smaller cubes of 1 cm each. Write a program to find the total number of smaller cubes so obtained.

Practical 1.3: A train can travel 50% faster than a car. Both start from point A at the same time and reach point B, 75 kms away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. Write a C program to compute the speed of car.

Practical 1.4: *Sonu ranked mth from the top and nth from the bottom in a class. How many students are there in the class?*

Practical 1.5: *A can do a piece of work in 8 days. B can do the same work in 14 days. Write a program to calculate and print the number of days to be taken to complete the work if A and B work together.*

PROGRAM CODE—

*1.1*

*#include<stdio.h>*

*main()*

*{*

*float per;*

*char a[15];*

*int age;*

*int ph;*

*printf("Enter your name = ");*

*scanf("%s",&a);*

*printf("Enter your age = ");*

*scanf("%d",&age);*

*printf("Enter your phone no = ");*

*scanf("%d",&ph);*

*printf("Enter your marks in matrix = ");*

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

*printf("Thank you!");*

*printf("\nName=%s,\nAge=%d,\nPhone No.=%d,\nPercent=%f",a,age,ph,per);*

*return 0;*

*}*

*1.2*

#include <stdio.h>

main()

{

int side,cut,news,cubeno;

printf("side of painted cube: ");

scanf("%d",&side);

printf("side of cube to cut into: ");

scanf("%d",&cut);

news=side/cut;

cubeno=news\*news\*news;

printf("number of smaller cubes generated= ");

printf("%d",cubeno);

return 0;

}

*1.3*

#include <stdio.h>

main()

{

int d;

printf("Enter distance traveled in kms\n");

scanf("%d",&d);

float t,carsp;

printf("Enter time in mins lost by the train while stopping at stations\n");

scanf("%f",&t);

carsp = (float)(60\*d)/(3\*t);

printf("Speed of car =%f\n",carsp);

return 0;

}

*1.4*

#include<stdio.h>

main()

{

int t,b,a;

printf("Enter your rank from the top = ");

scanf("%d",&t);

printf("Enter your rank from the bottom = ");

scanf("%d",&b);

a=(b+t)-1;

printf("Enter totalno. of students \na=%d",a);

return 0;

}

*1.5*

#include<stdio.h>

main()

{

int x,y;

float z,a,b,c;

printf("Enter no of days required by A = ");

scanf("%d",&x);

printf("Enter no of days required by B = ");

scanf("%d",&y);

z=(float)(1/x);

b=(float)(1/y);

c=(z+b);

a=(1/c);

printf("Total time taken \na=%f",a);

return 0;

}

ERRORS ENCOUNTERED DURING PROGRAM’S EXECUTION

(Kindly jot down the compile time errors encountered)

PROGRAMS’ EXPLANATION (in brief) –

* 1. To take the information of the user
  2. To calculate the no of new cubes generated after cutting the cube of 6 cm.
  3. To find the speed of the car
  4. With the help of a students rank calculating the no of students who appeared in the exam
  5. To calculate the time to be taken to complete a job when two different people works together with different speed

OUTPUT

1.1

Enter your phone no = 8618097212

Enter your marks in matrix = 86.4

Thank you!

Name=Yash,

Age=17,

Phone No.=28162620,

Percent=86.400002

1.2

side of painted cube: 6

side of cube to cut into: 4

number of smaller cubes generated= 1

1.3

Enter distance traveled in kms =45

Enter time in mins lost by the train while stopping at stations =5

Speed of car =180.000000

1.4

Enter your rank from the top = 5

Enter your rank from the bottom = 21

Enter totalno. of students

a=25

1.5

Enter no of days required by A = 8

Enter no of days required by B = 14

Total time taken

a=5.09090913

|  |
| --- |
| * 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) |  | | |

LEARNING OUTCOMES