Institute of Computer Technology
B. Tech. Computer Science and Engineering

Sub: ESFP – I
Course Code: 2CSE102
Practical – 1
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Roll No:BDA-08
Branch:BDA
Class: B
Batch:14

[Q-1] Problem Definition:(Part-1)

Method using a third variable:

Sam decides to implement the method using a third variable. He has two integer variables, x and y, with initial values x = 10 and y = 20. Write a C program to help Sam swap the values of x and y using a third variable, and then display the new values.

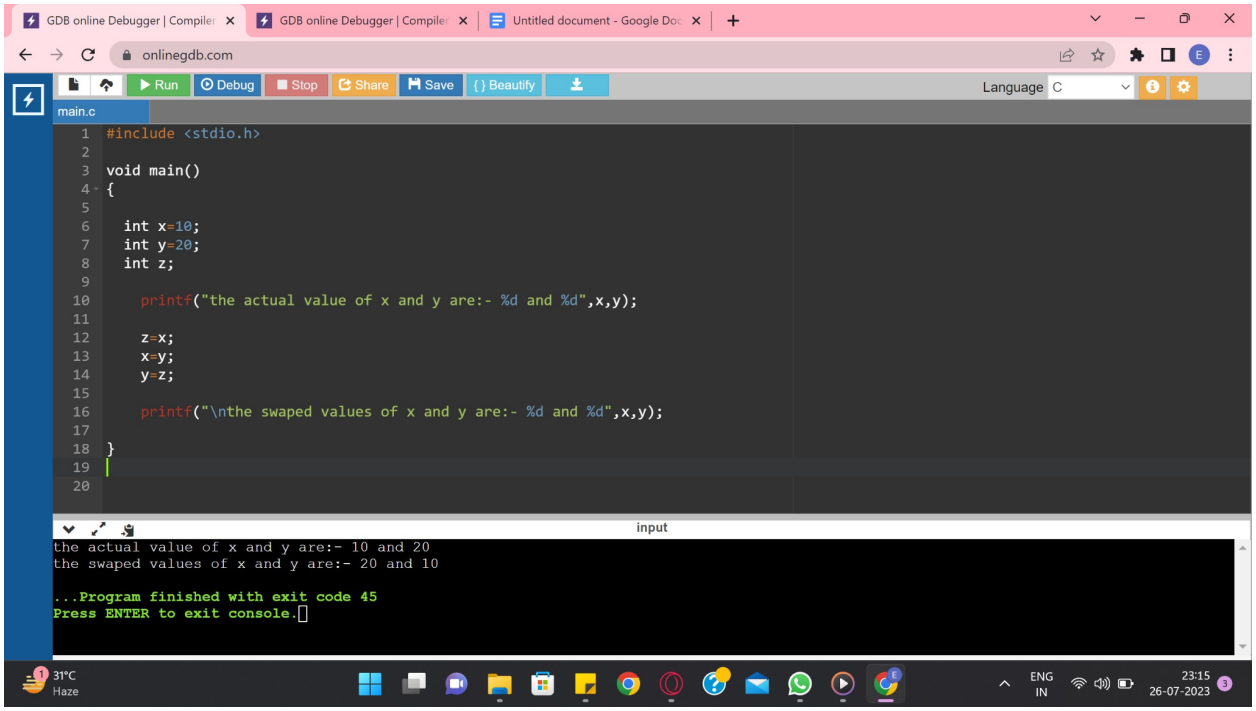
ALGORITHM:

Step 1:- Start
Step 2:- We are given to variables x and y.
Step 3:- and a 3rd variable z.
Step 4:- use the third variable method .
Step 5:- Print the exchanged value of x and y variable.
Step 6:- End

Solution:

Code:-

```c
#include <stdio.h>

void main()
{

  int x=10;
  int y=20;
  int z;

    printf("the actual value of x and y are:- %d and %d",x,y);

    z=x;
    x=y;
    y=z;

    printf("\n the swapped values of x and y are:- %d and %d",x,y);

}
```



Problem Definition:(Part-2)

Method without using a third variable:

Emily prefers an approach that doesn't use an additional variable to swap the values. She also has two integer variables, a and b, with initial values a = 5 and b = 8. Write a C program to assist Emily in swapping the values of a and b without using a third variable, and then display the updated values.

ALGORITHM:

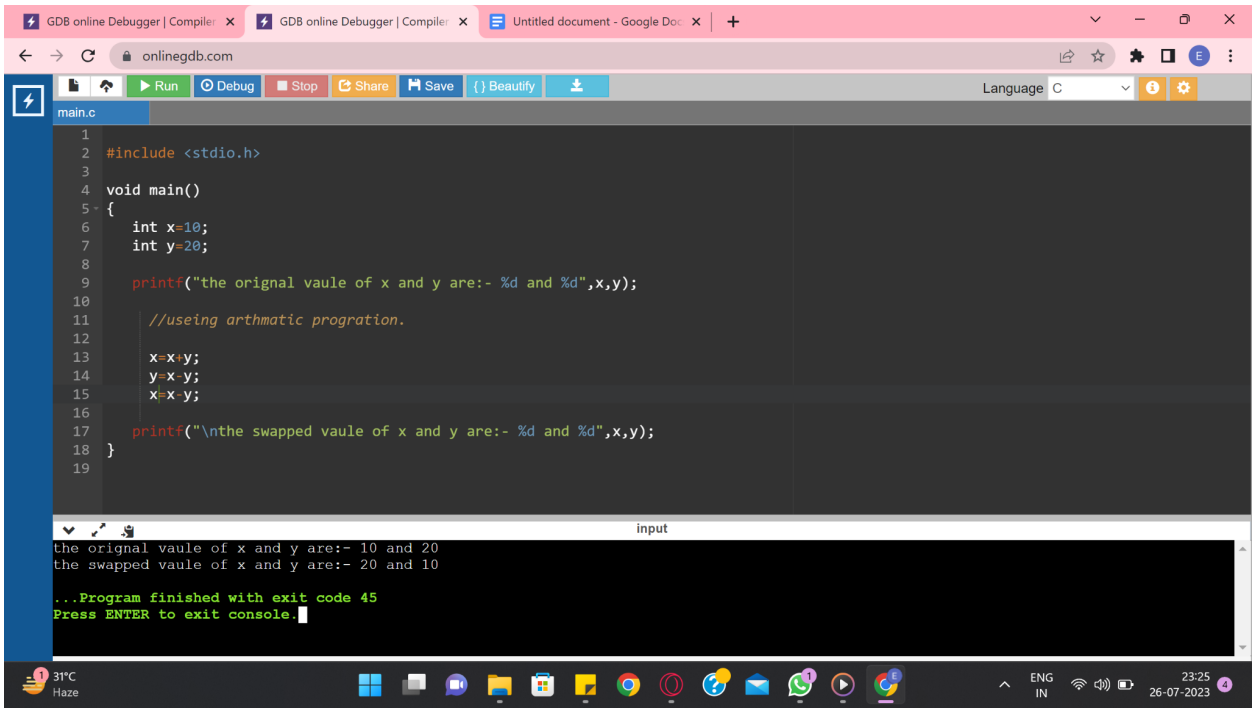
Step 1:- Start
Step 2:- We are given to variables x and y.
Step 3:- and a 3rd variable z.
Step 4:- use the arithmetic method .
Step 5:- Print the exchanged value of x and y variable.
Step 6:- End

Solution:

Code:-

```
#include <stdio.h>

void main()
{
   int x=10;
   int y=20;

   printf("the orignal vaule of x and y are:- %d and %d",x,y);

     //useing arthmatic progration.

     x=x+y;
```

```
    y=x-y;
    x=x-y;

  printf("\nthe swapped vaule of x and y are:- %d and %d",x,y);
}
```



[Q-2] Problem Definition:(part-1)

Charlie invests $2000 in a fixed deposit account with a bank that offers a simple interest rate of 4% per annum. Calculate the total amount Charlie will have after 3 years. Assume that the interest is calculated annually.

Simple Interest (SI) = (Principal * Rate * Time) / 100

ALGORITHM:

Step 1:- Start
Step 2:- We are given principal , rate and time.

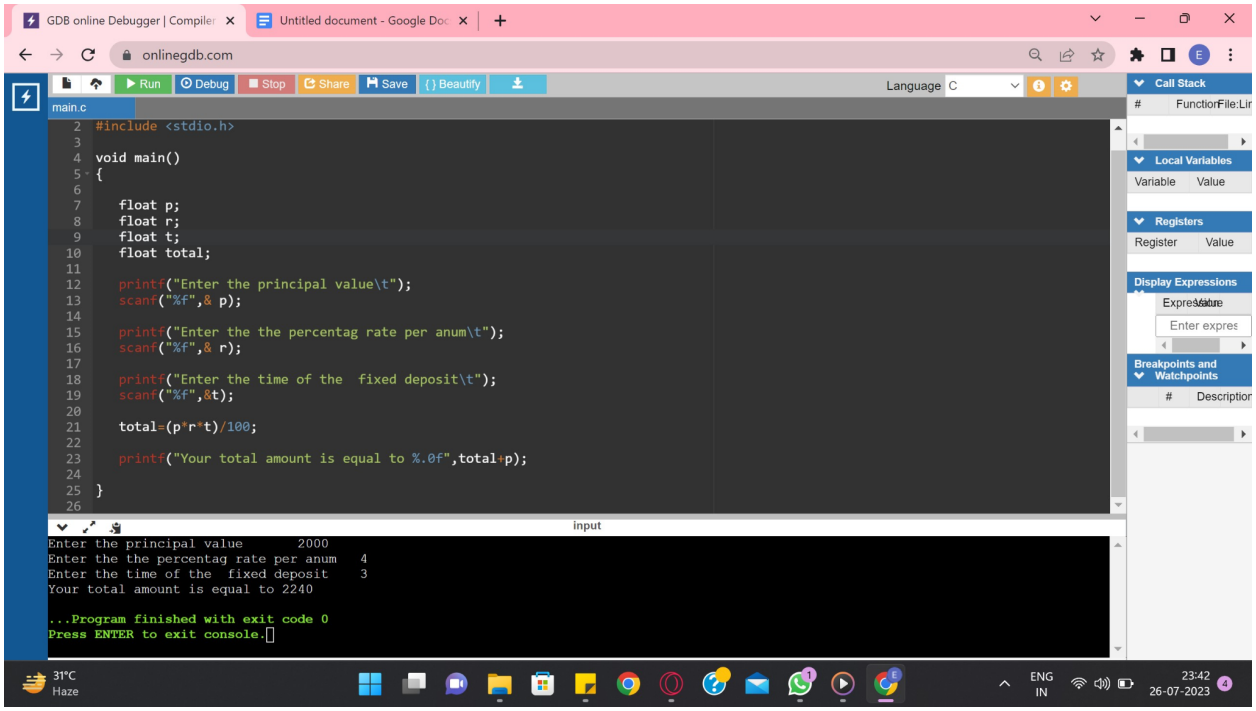
Step 3:- with that we can find simple interest.
Step 4:- use the simple interest formula.
Step 5:- Print the final value of the interest.
Step 6:- and the end product is added with the principal amount.

Solution:

Code:-

```
#include <stdio.h>

void main()
{

   float p;
   float r;
   float t;
   float total;

   printf("Enter the principal value\t");
   scanf("%f",& p);

   printf("Enter the the percentag rate per anum\t");
   scanf("%f",& r);

   printf("Enter the time of the  fixed deposit\t");
   scanf("%f",&t);

// this is Simple Interest.
   total=(p*r*t)/100;

   printf("Your total amount is equal to %.0f",total+p);
```

}



[Q-2] Problem Definition:(part-2)

James invests $1500 in a savings account with a bank that offers a compound interest rate of 5% per annum. Calculate the total amount James will have after 4 years. Assume that the interest is compounded annually.

ALGORITHM:

Step 1:- Start
Step 2:- We are given principal , rate and time.
Step 3:- with that we can find simple interest.
Step 4:- use the compound interest formula.
Step 5:- Print the final value of the interest.
Step 6:-End.

Solution:

Code:-

```
#include <stdio.h>
#include <math.h>
void main()
{

   float p;
   float r;
   float t;
   float total;

   printf("Enter the principal value\t");
   scanf("%f",& p);

   printf("Enter the the percentag rate per anum\t");
   scanf("%f",& r);

   printf("Enter the time of the  fixed deposit\t");
   scanf("%f",&t);

// this is Compound Interest.
   total=p*pow(1+r/100,t)-p;

   printf("Your total amount is equal to %.0f",total);

}
```

```c
#include <stdio.h>
#include <math.h>
void main()
{

   float p;
   float r;
   float t;
   float total;

   printf("Enter the principal value\t");
   scanf("%f",& p);

   printf("Enter the the percentag rate per anum\t");
   scanf("%f",& r);

   printf("Enter the time of the  fixed deposit\t");
   scanf("%f",&t);

// this is Compound Interest.
   total=p*pow(1+r/100,t)-p;

   printf("Your total amount is equal to %f",total);
```

input

```
Enter the principal value       1500
Enter the the percentag rate per anum   5
Enter the time of the  fixed deposit    4
Your total amount is equal to 323.259033

...Program finished with exit code 0
Press ENTER to exit console.
```

[Q-3] Problem Definition:

As a recent computer science graduate, you are preparing to apply for your dream job in a software development company. You want to showcase your skills and accomplishments by printing your resume using C programming. Print your resume with all the necessary details.Print your resume exactly as shown below and format the resume with proper spacing and alignment. Make sure to replace the placeholders with your actual details.

ALGORITHM:

Step 1:- Start

Step 2:- We are given subjects on which we need to write a resume.
Step 3:- with that we can write details on our resume.
Step 4:- use the ‘printf’ command.
Step 5:-End.

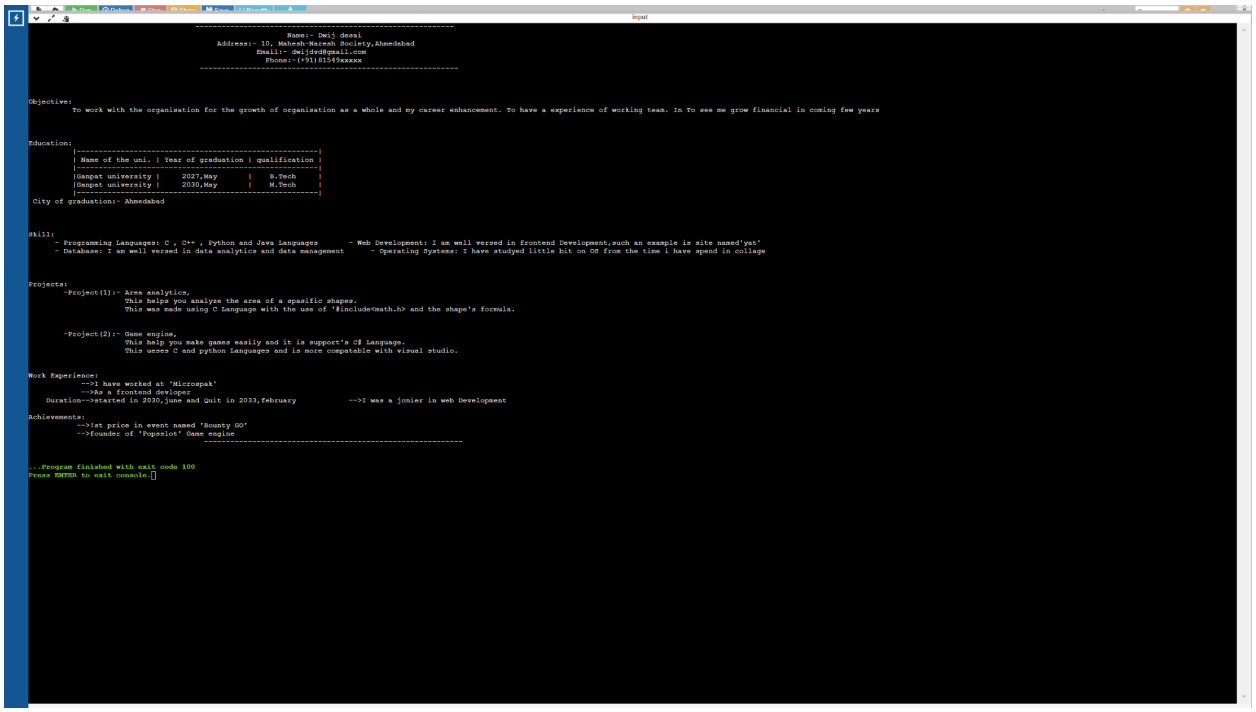
Solution:

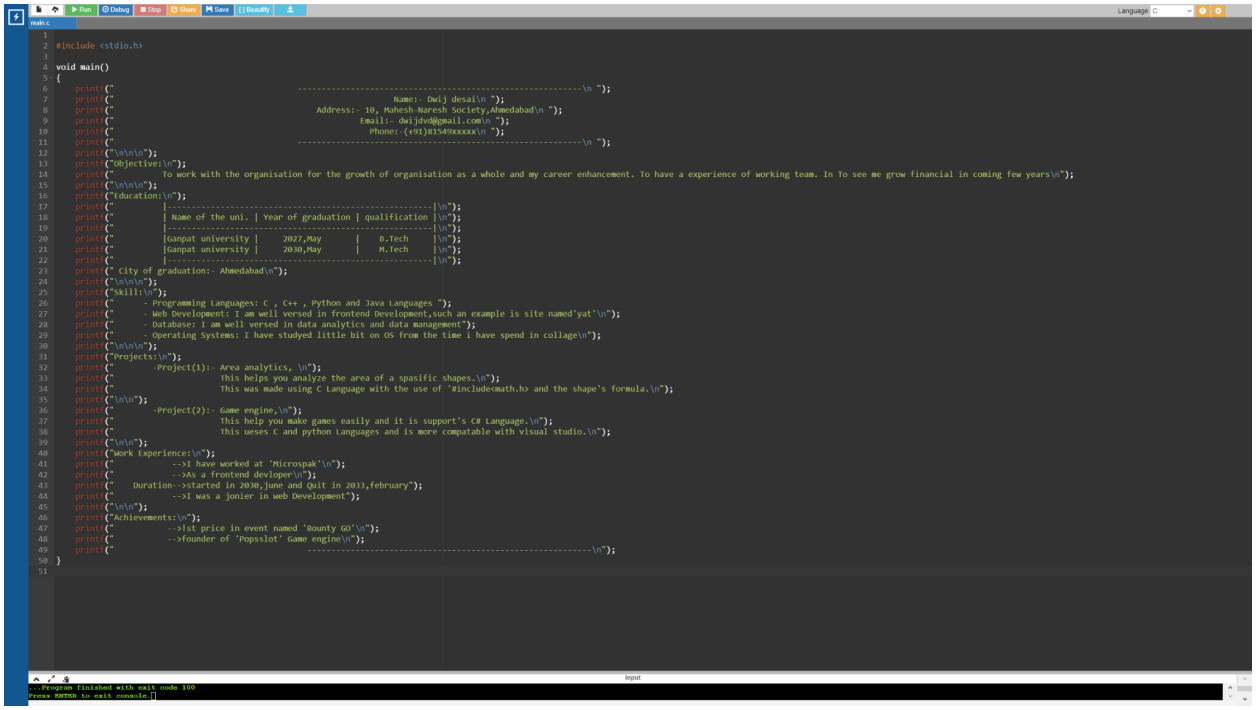
Code:

```
#include <stdio.h>

void main()
{
   printf("
----------------------------------------------------\n ");
   printf("                                          Name:- Dwij desai\n ");
   printf("                                 Address:- 10, Mahesh-Naresh
Society,Ahmedabad\n ");
   printf("                                      Email:-
dwijdvd@gmail.com\n ");
   printf("                                       Phone:-(+91)81549xxxxx\n
");
   printf("
----------------------------------------------------\n ");
   printf("\n\n\n");
   printf("Objective:\n");
   printf("          To work with the organisation for the growth of
organisation as a whole and my career enhancement. To have a
experience of working team. In To see me grow financial in coming
few years\n");
   printf("\n\n\n");
   printf("Education:\n");
```

```
    printf("          |-----------------------------------------------------|\n");
    printf("          | Name of the uni. | Year of graduation | qualification
|\n");
    printf("          |-----------------------------------------------------|\n");
    printf("          |Ganpat university |     2027,May       |    B.Tech     |\n");
    printf("          |Ganpat university |     2030,May       |    M.Tech     |\n");
    printf("          |-----------------------------------------------------|\n");
    printf(" City of graduation:- Ahmedabad\n");
    printf("\n\n\n");
    printf("Skill:\n");
    printf("      - Programming Languages: C , C++ , Python and Java
Languages ");
    printf("      - Web Development: I am well versed in frontend
Development,such an example is site named'yat'\n");
    printf("      - Database: I am well versed in data analytics and data
management");
    printf("      - Operating Systems: I have studyed little bit on OS from
the time i have spend in collage\n");
    printf("\n\n\n");
    printf("Projects:\n");
    printf("        -Project(1):- Area analytics, \n");
    printf("                      This helps you analyze the area of a spasific
shapes.\n");
    printf("                      This was made using C Language with the use
of '#include<math.h> and the shape's formula.\n");
    printf("\n\n");
    printf("        -Project(2):- Game engine,\n");
    printf("                      This help you make games easily and it is
support's C# Language.\n");
    printf("                      This ueses C and python Languages and is
more compatable with visual studio.\n");
    printf("\n\n");
```

```
    printf("Work Experience:\n");
    printf("            -->I have worked at 'Microspak'\n");
    printf("            -->As a frontend devloper\n");
    printf("    Duration-->started in 2030,june and Quit in
2033,february");
    printf("            -->I was a jonier in web Development");
    printf("\n\n");
    printf("Achievements:\n");
    printf("          -->!st price in event named 'Bounty GO'\n");
    printf("          -->founder of 'Popsslot' Game engine\n");
    printf("
-------------------------------------------------------------\n");
}
```





```c
#include <stdio.h>

void main()
{
   printf("                                  ------------------------------------------------------------\n ");
   printf("                                                        Name:- Dwij desai\n ");
   printf("                                    Address:- 10, Mahesh-Naresh Society,Ahmedabad\n ");
   printf("                                            Email:- dwijdvd@gmail.com\n ");
   printf("                                              Phone:-(+91)81549xxxxx\n ");
   printf("                                  ------------------------------------------------------------\n ");
   printf("\n\n\n");
   printf("Objective:\n");
   printf("          To work with the organisation for the growth of organisation as a whole and my career enhancement. To have a experience of working team. In To see me grow financial in coming few years\n");
   printf("\n\n\n");
   printf("Education:\n");
   printf("          |-------------------------------------------------------|\n");
   printf("          | Name of the uni. | Year of graduation | qualification |\n");
   printf("          |-------------------------------------------------------|\n");
   printf("          |Ganpat university |      2027,May      |    B.Tech     |\n");
   printf("          |Ganpat university |      2030,May      |    M.Tech     |\n");
   printf("          |-------------------------------------------------------|\n");
   printf(" city of graduation:- Ahmedabad\n");
   printf("\n\n\n");
   printf("Skill:\n");
   printf("      - Programming Languages: C , C++ , Python and Java Languages ");
   printf("      - Web Development: I am well versed in frontend Development,such an example is site named'yat'\n");
   printf("      - Database: I am well versed in data analytics and data management");
   printf("      - Operating Systems: I have studyed little bit on OS from the time i have spend in collage\n");
   printf("\n\n\n");
   printf("Projects:\n");
   printf("          -Project(1):- Area analytics, \n");
   printf("                        This helps you analyze the area of a spasific shapes.\n");
   printf("                        This was made using C Language with the use of '#include<math.h> and the shape's formula.\n");
   printf("\n\n");
   printf("          -Project(2):- Game engine,\n");
   printf("                        This help you make games easily and it is support's C# Language.\n");
   printf("                        This ueses C and python Languages and is more compatable with visual studio.\n");
   printf("\n\n");
   printf("Work Experience:\n");
   printf("                -->I have worked at 'Microspak'\n");
   printf("                -->As a frontend devloper\n");
   printf("    Duration-->started in 2030,june and Quit in 2033,february");
   printf("                -->I was a jonier in web Development");
   printf("\n\n");
   printf("Achievements:\n");
   printf("              -->1st price in event named 'Bounty GO'\n");
   printf("              -->founder of 'Popsslot' Game engine\n");
   printf("                                  ------------------------------------------------------------\n");
}
```

```
..Program finished with exit code 100
Press ENTER to exit console.
```

[Q-4] Problem Definition:

You are a student who has just received their 12th-grade mark sheet. The mark sheet contains the marks obtained in five subjects: Physics,Chemistry, Mathematics, English, and Biology. You want to calculate your aggregate marks and percentage to assess your performance in the exams. To do this, you decide to develop a logic to automate the calculation process.

ALGORITHM:

Step 1:- Start
Step 2:- We are given 5 subjects .
Step 3:- with that we can ask the user marks of each subject.
Step 4:- use the ‘percentag’ formula we can find the percentage.
Step 5:- Print the final value of the total marks of 5 subjects.
Step 6:- and also in the end we get a percentage of the 5 subjects.

Solution:

Code:-

```
#include <stdio.h>

void main()
{

   float Physics;
   float Chemistry;
   float Mathematics;
   float English;
   float Biology;
   float total;
   float percentag;

   printf("Physics marks-");
   scanf("%f",& Physics);

   printf("Chemistry marks-");
   scanf("%f",& Chemistry);

   printf("Mathematics marks-");
   scanf("%f",& Mathematics);

   printf("English marks-");
   scanf("%f",& English);

   printf("Biology marks-");
   scanf("%f",& Biology);
```

```
   total=Physics+Chemistry+Mathematics+English+Biology;

   printf("Your total is- %f\t",total);

   percentag=(total*100)/500;


    printf("Your percentag is- %f\t",percentag);
}
```