LAB MANUAL

**GE2115 Computer Practice Laboratory -I**

**Year / Sem : 1 / 1**

**GE2115 COMPUTER PRACTICE LABORATORY – I L T P C**

 **0 0 3 2**

**LIST OF EXERCISE S**

1. **Word Processing 15**

1. Document creation, Text manipulation with Scientific notations.

2. Table creation, Table formatting and Conversion.

3. Mail merge and Letter preparation.

4. Drawing - flow Chart

1. **Spread Sheet 15**

5. Chart - Line, XY, Bar and Pie.

6. Formula - formula editor.

7. Spread sheet - inclusion of object, Picture and graphics, protecting the document

and sheet.

8. Sorting and Import / Export features.

**imple C Programming \* 15**

9. Data types, Expression Evaluation, Condition Statements.

10. Arrays

11. Structures and Unions

12. Functions

**TOTAL: 45 PERIODS**

\* For programming exercises Flow chart and pseudocode are essential

**HARDWARE / SOFTWARE REQUIRED FOR A BATCH OF 30 STUDENTS**

**Hardware**

LAN System with 33 nodes (OR) Standalone PCs – 33 Nos.

Printers – 3 Nos.

**Software**

OS – Windows / UNIX Clone

Application Package – Office suite

Compiler – C

**Ex.No 1.a**

**Document creation**

**Aim :**

To Create an advertisement of a Software Company in word to recruit software professional for four different designations with an attractive **page border**, name of the company using **word art**, using at least one **clip art**, mentioning the company address and number of vacancies

**Procedure :**

1. To Create a document ,select **File** menu bar then choose **New** option
2. Choose Borders and Shading option from the Format menu. It displays Borders and

 Shading dialog box .

1. Click on **Page Border** tab and choose the **Page Style** from the style drop down list then page border is added to the document.
2. For Themes, select **Format,** then go to **Themes** &select any themes from the list.
3. To insert picture, select **Insert,** then **Picture,** from the clipart collection copy any picture.
4. To use word art, select **Insert->Picture->Word art.** Type the name of the company in word art
5. First type the title of the advertisement & format it using above steps.
6. Type the name of the Designation, qualifications and vacancies as Heading.
7. Now the advertisement is ready for printing.
8. Save the file.
9. Close the document.

**Sample Output**

 

#120,Old Mahabalipuram Road, Thuraipakkam, Chennai 600 119,Tamil Nadu, INDIA

Ph: +91.44.24962444 / +91.44.24917065 Fax: +91.44.24932444

|  |  |  |
| --- | --- | --- |
| Posts | Total no of requirements for the post | Experience |
| * Senior Architect
 | * 5
 | * 8+
 |
| * Software Developer
 | * 10
 | * 2+
 |

**Ex.No. 1.b**

**Text Justification, Bullets and numbering and Spell Checking**

**Aim :**

To perform Text justification, Spell checking, Bold, Underline, Italics using bullets and numbering in Microsoft word and save the document with suitable name.

**Procedure:**

1. To create a document , select **File** menu bar then choose **New** option
2. For justification, select the text to be justified in the document and then press the **Justify** button in the formatted tool bar.
3. For **Bold** face of the word, select the text to change them into bold face in the document and then press the button **B** in the formatted tool bar.
4. For changing the text style into ***Italic***, select the word and then press the button **I** in the tool bar.
5. For changing the text style into **Underline**, select the word and then press the button **U** in the tool bar.
6. For spelling correction and grammar checking, select the word to be spell corrected, and then click **ABC** button on the standard tool bar.
7. Click Format->Bullets and Numbering.
8. Now the bullets and numbering dialog box appears.Choose the appropriate bullet Style from the dialog box.
9. Save the file
10. Close the document.

**Sample Output**

**Bullets and Numbering**

**The Sought after companies by students during placement interview are**

|  |
| --- |
| * Infosys Technologies
* Google
* Microsoft Technologies
* Tata Consultancy Solutions
* Cognizant Technology Solutions
* Wipro Technologies
* Patni
* Hexaware Solutions
 |

**Ex.No. 1.c**

**Text Manipulation with Scientific Notations.**

**Aim :**

To perform Text manipulation with scientific notations in Microsoft word and save the document with suitable name.

**Procedure:**

1. To create a document , select **File** menu bar then choose **New** option
2. Enter the mathematical equation in the document

X=$\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$

$\left(a+b\right)^{3}=a^{3}+3a^{2}b+3ab^{2}+b^{3}$

 Enter the Chemical equation in the document

 $C\_{6}H\_{12}O\_{6}+6O\_{2}\rightarrow 6CO\_{2}+6H\_{2}O$

1. Select the character which you want to show as subscript, and choose the font option from the Format menu and enable the subscript check box from the Font dialog
2. For Superscript ,Choose the font option from the Format menu and enable the superscript check box from the Font dialog
3. For changing case, Select change case from format menu .Select the different cases from the selected text.
4. Save the file and quit MS Word.

**Sample Output**

**Mathematical equation**

$$x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$$

(a+b)3=a3+3a2b+3ab2+b3

 **Chemical equation**

C6H12O6+6O2→6Co2+6H2O

**Ex.No. 2**

**Table Creation and Table Manipulation**

**Aim :**

To create a Class Time Table in Microsoft word by inserting rows and columns, merge rows and columns and split columns into cells and save the document with suitable name.

**Procedure:**

1. To create a document , select **File** menu bar then choose **New** option
2. Select Table Option from the menu bar and Choose insert table option.
3. Set number of columns and number of rows in the insert table dialog box and click ok. The table will be created with the specified number of rows and columns.
4. Enter the time table details in the table
5. To **insert** a row or column right slick on the table and select row or column.
6. To **format** the table, right click select table properties and format the table
7. For **merging,** select the columns to be merged, and select merge cell option from the Table menu
8. For **splitting** the table, select the row in which the table is to be split and choose Split table option in the Table Menu. Click on it.
9. Now the table will split into two tables.
10. Converting Text to table
	1. Select the text in the document
	2. Choose the convert-text to table from the table menu
	3. Choose the table size and separator text option from the convert to table dialog box
	4. Now the text information is converted into table

**Sample Output**

**Class Time Table**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DAY | 1 | 2 | 3 | 4 | LUNCH | 6 | 7 | 8 |
| MONDAY | CY2111 | GE2116 | MA2111 | GE2116 | GE2115 |
| TUESDAY | GE2111 | GE2116 | CY2111 | GE2112 |
| WEDNESDAY | GE2112 | PH2111 | HS2111 |
| THURSDAY | GE2115 | PH2111 | GE2115 | PH2111 | GE2116 | CY2111 | MA2111 |
| FRIDAY | GE2116 | GE2115 | CY2111 | PH2111 | PH2111 |

**Text to table**

|  |  |  |
| --- | --- | --- |
| Item | Quantity | Description |
| * 1.
 | * 1
 | * Super Computer
 |
| * 2.
 | * 3
 | * PC
 |
| * 3.
 | * 5
 | * LCD Monitors
 |
| * 4.
 | * 8
 | * 120 GB Hard disk Drive
 |
| * 5.
 | * 4
 | * Acrobat Reader
 |

**Ex.No. 3**

**Mail Merge and Letter Preparation**

**Aim :**

To prepare a call letter to invite students for graduation day using mail merge function

**Algorithm:**

1. Open a new document.
2. In Tool menu, Go to Letter and Mailing and then choose mail merge.
3. In Document type, Select letter and then go to starting document.
4. In select recipients, Click and type a new list and then click create.
5. Enter the address information on the address fields and save the document.
6. Click the write your letter field and type From block and Body of the letter.
7. For entering the address ,click more items and select necessary address fields from the insert merge field.
8. Click preview your letter and complete the merge.
9. Select edit individual letters and then click ok.
10. Save the document
11. Exit Word.

 **Sample Output:**

 From

The Director

St.Joseph’s College Of Engineering

Chennai – 600 119

To

 2010 Batch Students

 St.Joseph’s College Of Engineering

 Chennai – 600 119

Dear Student,

 We are pleased to inform you that you have been awarded B.E./ B.Tech degree for the convocation held by Anna University. The formal award will be conferred on you at the convocation which is to be held in our college on 15th March 2010, at 2.00 p.m.

 You are requested to attend the convocation and take the degree certificate. On Behalf of the Chairman, Principal and all staff members I wish everyone and would like to meet you on this memorable day.

 Yours,

 Director

From

 The Director

 IGCE

 Trichy

To

 2010 Batch Students

 IGCE

 Trichy

Dear Student,

 We are pleased to inform you that you have been awarded B.E./ B.Tech degree for the convocation held by Anna University. The formal award will be conferred on you at the convocation which is to be held in our college on 15th march 2010, at 2.00 p.m.

 You are requested to attend the convocation and take the degree certificate. On behalf of our Chairman, Principal and all staff members I wish everyone and would like to meet you on this memorable day.

Yours

Director

 **Ex.No. 4**

**Drawing-Flow Chart**

 **Aim :**

To create a document to draw flowchart for

* Largest of three numbers
* Roots of the quadratic equation

$$x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$$

 **Procedure :**

1. To create a document , select **File** menu bar then choose **New** option
2. Choose the flowchart option in the auto shapes menu from the drawing tool bar
3. Select the flowchart symbols from auto shapes

Start / Terminate

Input

Process

Loop / Preparation

Flow Lines / Arrows

 Decision

 Connector

1. After finishing the entire flowchart select all the flowchart symbols and arrows ,right click and click Grouping.
2. Save the document

**Sample Output**

Flow chart to find the largest of 3 numbers



A flowchart for computing the roots of a quadric equation, given the coefficients A, B, and C

****

**Ex.No. 5.a**

**Generate Line Chart using Ms Excel**

 **Aim :**

To generate a line chart for a cricket match over by over in Microsoft Excel and save with suitable name.

**Procedure :**

1. To create a Workbook , select **File** menu bar then choose **New** option
2. Enter the runs scored in over 1 to 5.Select the table and choose Insert->Chart
3. Now a Chart Wizard dialog will be displayed.
4. Chart Wizard Shows different kinds of charts and graphs. Select Line Chart and select sub type then click Next
5. Select the series in rows or columns. Then select columns.
6. In X axis type Over and in Y axis type Runs
7. Click Finish
8. Now a line chart of a cricket score over by over will be generated in the workbook.

**Output:**

|  |  |
| --- | --- |
| Over | Runs |
| 1 | 4 |
| 2 | 10 |
| 3 | 6 |
| 4 | 11 |
| 5 | 8 |



**Ex.No. 5.b**

**Generate Bar Chart using Ms Excel**

 **Aim :**

To generate a bar chart for students mark list in Microsoft Excel and save with suitable name.

**Procedure :**

1. To create a Workbook , select **File** menu bar then choose **New** option
2. Type the student marks for five subjects .Select the table and choose Insert->Chart
3. Now a Chart Wizard dialog will be displayed.
4. Chart Wizard Shows different kinds of charts and graphs. Select Bar Chart and select sub type then click Next
5. Select the series in rows or columns. Then select columns.
6. Make the X axis in the chart as marks and Y axis as student names
7. Click Finish
8. Now a Bar chart of a student mark list will be generated in the workbook.

 **Output:**

**Bar Chart**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **mark1** | **mark2** | **mark3** | **mark4** |
| Anand | 89 | 56 | 45 | 78 |
| Arun | 15 | 23 | 26 | 45 |
| Aswin | 78 | 89 | 65 | 45 |
| Bharth | 11 | 32 | 22 | 55 |
| Balaji | 78 | 48 | 68 | 52 |



**Ex.No. 5.c**

**Generate Pie Chart using Ms Excel**

 **Aim :**

To generate a pie chart for utilization of hard disk space in Microsoft Excel and save with suitable name.

**Procedure :**

1. To Create a Workbook , select **File** menu bar then choose **New** option
2. Type the utilization of drives for three drives namely C,D,E, of a 100 Gigabyte hard drive .Select the table and choose Insert->Chart
3. Now a Chart Wizard dialog will be displayed.
4. Chart Wizard Shows different kinds of charts and graphs. Select pie Chart and select sub type then click Next
5. ,Enable the labels value and percentage in the chart data Labels
6. Click Finish
7. Now a Bar chart of Hard disk utilization will be generated in the workbook.

 **Output:**

**Pie chart**

|  |  |
| --- | --- |
| **Drive** | **Util** |
| C | 50 |
| D | 30 |
| E | 10 |
| Unpartitioned | 10 |



**Ex.No. 5.d**

**Generate XY Chart using Ms Excel**

 **Aim :**

To generate a XY chart for comparing a company product sales in Microsoft Excel and save with suitable name.

**Procedure :**

1. To create a Workbook , select **File** menu bar then choose **New** option
2. Type the product sales for every month .Select the table and choose Insert->Chart
3. Now a Chart Wizard dialog will be displayed.
4. Chart Wizard Shows different kinds of charts and graph’s. Select XY Chart and select sub type then click Next
5. In the chart data Labels ,Enable the labels value and percentage
6. Click Finish
7. Now a XY chart of product sales will be generated in the workbook.

**Output:**

 **XY Chart**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Product | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter |
| product1 | 200 | 485 | 1457 | 456 |
| product2 | 635 | 854 | 415 | 145 |
| product3 | 147 | 256 | 458 | 254 |



**Ex.No. 6.a**

**Formula Editor using Ms Excel**

 **Aim :**

To create a student mark details work sheet using Microsoft Excel and save with suitable name.

 **Procedure:**

1. To create a Workbook , select **File** menu bar then choose **New** option
2. Enter the marks obtained by students in subjects
3. Calculate the total using the formula =**SUM**(m1,m2…mn).
4. Calculate the average using the formula =**AVERAGE**(m1,m2…mn).
5. Calculate the grade using the formula **IF(Avg>90,A,IF(Avg>80,B,IF(Avg>70,C, IF(Avg>60F))).**
6. Apply the filter option from **Data→Filter**

 **Output:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Si.No | Name | physics | chemistry | maths | Total | Average | Grade |
| 1 | Arvind | 70 | 80 | 60 | 210 | 70 | C |
| 2 | Balu | 85 | 50 | 95 | 230 | 76.333 | C |
| 3 | Chandru | 80 | 52 | 88 | 200 | 66.6667 | F |
| 4 | Diwakar | 95 | 100 | 80 | 275 | 91.6667 | A |
| 5 | Elizebath | 45 | 55 | 85 | 165 | 61.6667 | F |

**Ex.No. 6.b**

 **NUMBER CONVERSION**

 **Aim:**

To create a conversion between different number formats in work sheet.

 **Procedure:**

1. To create a Workbook , select **File** menu bar then choose **New** option

 2. For Converting

* + - * Decimal to Binary
	+ DEC2BIN (number,places) convert decimal to binary number.
		- * Decimal to Octal
	+ DEC2OCT (number,places) convert decimal to Octal number.
		- * Decimal to HexaDecimal
	+ DEC2HEX(number,places) convert decimal to Hexadecimal number.
		- * Rupees to Dollar
	+ DOLLAR(number,places) convert rupees to dollar value.
		- * Dollar to Rupees
	+ DOLLARFR (number,places) convert dollar to rupees value.

 **Output:**

|  |  |
| --- | --- |
| Decimal | Binary |
| 30 | 1110 |
| Decimal | Octal |
| 45 | 55 |
| Decimal | Hexa decimal |
| 440 | 1B8 |
| Rupees | Dollar |
| 5500 | 114.58$ |
| Dollar | Rupees |
| $40.00 | 1920 |

**Ex.No. 7**

**Inclusion of object, Picture, Clipart and Protect the document**

 **Aim :**

To include object, picture and graphics in a workbook and also protect the workbook.

**Procedure :**

1. For Creating a Workbook , select **File** menu bar then choose **New** option
2. Inclusion Of Object
	1. Choose Object option from Insert Menu.
	2. Choose Bitmap Image option from list of objects shown
	3. It shows all the tools necessary for Bitmap Object
	4. Draw a image in the Bit map object
	5. Place the Bitmap picture in the excel workbook
3. Insertion Of Picture
	1. Choose Picture option from the Insert menu
	2. Choose file option
	3. Now choose the picture to be inserted in the worksheet from the picture Dialog Box
	4. Insert the Picture in the worksheet
4. Insertion Of clipart
	1. Choose ClipArt option from the Insert menu
	2. Choose All collection option
	3. Now choose the Clipart to be inserted in the worksheet from the Clipart window
	4. Insert the Clipart in the worksheet
5. Protecting the Document
	1. In the data menu, Click protection→protect sheet
	2. Type the password and confirm password and click ok to protect the document.
	3. To accesss the workbook type the same password and edit.

**Output:**

**Login:Javid Ali.L**

**Picture Clipart**

 

 **Insert Object**

**Bitmap Image**

**Protecting Worksheet**

 

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**EX.No: 8**

**SORTING, IMPORT AND EXPORT FEATURES**

**Aim:**

To implement the sorting, import and export features in excel sheet using Microsoft Excel and save with suitable name.

**Procedure:**

1. To create a Workbook , select **File** menu bar then choose **New** option
2. Enter the student mark details
3. Calculate the total using the formula =**SUM**(m1,m2…mn).
4. Calculate the average using the formula =**AVERAGE**(m1,m2…mn).
5. Enter the student mark details and select it and click data→sort.
6. Type the student mark details in notepad and save it.
7. In excel sheet, click
	1. Data→Import External Data→Import data.
8. Select the data source, Text import wizard appears.
9. In Text import wizard, select the delimiter to separate the data and click finish.
10. Now the data will be imported in the excel sheet.

**Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **physics** | **chemistry** | **Maths** |
| Arun | 56 | 52 | 14 |
| Balaji | 78 | 56 | 98 |
| chandru | 25 | 52 | 65 |
| Donald | 99 | 98 | 99 |
| Edwin | 12 | 32 | 45 |

**Before Sorting**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **physics** | **chemistry** | **maths** |
| Edwin | 12 | 32 | 45 |
| Chandru | 25 | 52 | 65 |
| Arun | 56 | 52 | 14 |
| Bala | 78 | 56 | 98 |
| Donald | 99 | 98 | 99 |

**After Sorting**

**Imported**

|  |  |  |
| --- | --- | --- |
| **Total** | **Average** | **Grade** |
| 122 | 40.66667 | F |
| 232 | 77.33333 | C |
| 142 | 47.33333 | F |
| 296 | 98.66667 | A |
| 89 | 29.66667 | F |

**Ex.No 9a**

 **Area Of Circle**

**AIM:**

 To write a C program to calculate area of a circle.

**ALGORITHM:**

Step-1 Start the program.

Step-2 Input the radius of the circle.

Step-3 Calculate the area of the circle using the formula

 Area=3.14\*r\*r

 Step-4 Print the area of the circle

Step-5 Stop

**PROGRAM:**

/\*TO FIND THE AREA OF THE CIRCLE\*/

 #include<stdio.h>

 main()

 {

 float r,area,;

 printf(“\nEnter the radius of the circle”);

 scanf(“%f”,&r);

 area=3.14\*r\*r;

 printf(“\nArea=%f”,area);

 }

**OUTPUT:**

Enter the radius of the circle

4

Area = 50.24

**Ex.No 9b**

**Temperature Conversion**

**AIM:**

 To write a C program for temperature conversion from Celsius to Fahrenheit and vice versa.

**ALGORITHM:**

Step-1 Start the program.

Step-2 Input the celsius and fahrenheit values

Step-3 Calculate the temperature from Celsius to Fahrenheit using the formula

 F= (1.8\*c)+32

Step-4 Calculate the temperature from Fahrenheit to Celsius using the formula

 C=5/9(F-32)

Step-5 Print the calculated values

Step-6 Stop

**PROGRAM:**

/\*TO CONVERT THE TEMPERATURE FROM CELSIUS TO FAHREHEIT AND VICE VERSA\*/

 #include<stdio.h>

 main()

 {

 float cel, fah ,c ,f;

clrscr();

 printf(“\nEnter the fahrenheit value:”);

 scanf(“%f”,&f);

cel=(5.0/9.0)\*(f-32);

printf(“Celsius=%d”,cel);

printf(“\nEnter the Celsius value:”);

 scanf(“%f”,&c);

fah=(9.0/5.0)\*c+32;

printf(“Fahrenheit=%d”,fah);

getch();

 }

**OUTPUT:**

Enter the fahrenheit value:8

Celsius = -13.33

Enter the celsius value:10

Fahrenheit = 50

**Ex.No 9c**

**Evaluate the given Expression**

**AIM:**

 To write a C program to evaluate the given expression

**ALGORITHM:**

Step-1 Start the program.

Step-2 Input the values for declared variables

Step-3 Substitute the values in expression and calculate the results.

Step-4 Print the results

Step-5 Stop

**PROGRAM:**

 /\* Expression Evaluation\*/

#include<stdio.h>

main()

{

 int a,b,c;

 float x,y,z;

 printf ("Enter the values for a,b,c \n");

 scanf("%d,%d,%d", &a,&b,&c);

 x = (a \* b) – c;

 y = (b/c) \* a;

 z = (a - b) / (c + d)

 printf(" The value of x is “,x ”the value of y is “,y ”The value of z is “,z );

}

**OUTPUT:**

Enter the value for a,b,c.

a= 5; b = 6; c= 12;

x = 28.000;

y = 2.5000

z = 0.0555

**Ex.No 9d**

**Find the Given year is Lear Year or Not (using if else)**

**AIM:**

 To write a C program to find a given year is leap year or not

**ALGORITHM:**

Step-1 Start the program.

Step-2 Enter the year value

Step-3 Divide the entered year by 4.If there is no remainder it is a leap year else not a leap year.

Step-4 Print the result

Step-5 Stop

**PROGRAM:**

 /\* Check for Leap Year\*/

#include<stdio.h>

main()

{

 int year;

 printf ("Enter the year \n");

 scanf("%d", &year);

 if (year%4==0)

 printf("It is a Leap Year \n");

 else

 printf("It is Not a Leap Year\n");

}

**OUTPUT:**

Enter the year 2004

It is a Leap Year

Enter the year 1998

It is not a Leap Year

**Ex.No 9e**

 **Largest of three numbers (using if elseif else)**

**AIM:**

 To write a C program for finding largest of three given numbers.

**ALGORITHM:**

Step-1 Start the program.

Step-2 Input the three integer values A,B,C.

Step-3 Check

* + - 1. If the no A is greater than the other two no’s B and C

If so , Print A is largest

* + - 1. Elseif the second no B is greater than the third no C

 If so, Print B is Largest

* + - 1. Else Print C is largest

Step-4 Print the result

Step-5 Stop

**PROGRAM:**

/\*To Find the Largest of 3 Nos\*/

 #include<stdio.h>

#include<conio.h>

 main()

 {

 int a,b,c;

 clrscr();

 printf(“Biggest of three No’s”);

 printf(“Enter the values of A,B,C”);

 scanf(“%d%d%d”,&a,&b,&c);

 if((a>b)&&(b>c))

printf(“\n a=%d is greatest”,a);

elseif(b>c)

{

printf(“\n b=%d is greatest”,b);

}

else

{

printf(“\n c=%d is greatest”,c);

}

getch();

 }

**OUTPUT:**

Enter the values of A,B,C:10 20 5

B = 20 is greatest

**Ex.No 9f**

 **Age - Height Evaluation**

**AIM:**

 To write a C program to determine the height of a child whose age is in the range of 2 to 5.

**ALGORITHM:**

 Step -1 Start the program

 Step -2 Enter the child’s age and height

 Step -3 Determine

1. If the age is in the range of 2 – 3 determine
	1. If the height is less than 55 report short
	2. If the height is in between 55 to 75 report normal
	3. Otherwise report tall
2. If the age is in the range of 4 – 5 determine
	1. If the height is less than 75 report short
	2. If the height is in between 75 to 100 report normal
	3. Otherwise report tall

Step -4 Stop

**PROGRAM:**

/\* Program for evaluating age and height of children in 2 to 5 age group \*/

#include<stdio.h>

#include<conio.h>

main()

 {

 int age,height;

 clrscr();

 printf("\n Enter the age (in the range of 2 - 5 )and height ");

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

 if(age<4)

 {

 if(height<55)

 printf("\n the height is short");

 else if((height >=55)&&(height < 75))

 printf("\n the height is normal");

 else

 printf("\n the height is tall");

 }

 else

 {

 if(height<75)

 printf("\n the height is short");

 else if((height >=75)&&(height < 100))

 printf("\n the height is normal");

 else

 printf("\n the height is tall");

 }

 getch();

 }

**OUTPUT:**

Enter the age (in the range of 2 – 5) and height :

2

65

the height is normal

Enter the age (in the range of 2 – 5) and height :

5

120

the height is tall

**Ex.No 9g**

**Find the Given no is palindrome or Not**

**AIM:**

 To find sum of Digits, Reverse and the given Number is Palindrome or not.

**ALGORITHM:**

 Step-1 Start the program

 Step-2 Enter the number

 Step-3 Set a loop upto the number is not equal to zero

 Step-4 Find the digit of the number

 Step-5 Find the reverse of that number

Step-6 Find whether the reverse number is equal to the given number. If equal the number is palindrome else its not a palindrome

Step-7 Stop

 **PROGRAM:**

 /\* PROGRAM TO FIND THE REVERSE OF THE GIVEN NUMBER\*/

#include<stdio.h>

main()

{

 unsigned long int a, num, r\_ num=0,rem;

 printf(“\nEnter the number”);

 scanf(“%ld”,&num);

 a=num;

 while(num!=0)

 {

 rem=num%10;

 r\_ num=r\_ num\*10+rem;

 num=num/10;

 }

 printf(“\nThe reverse number of the %ld is %ld”,a,r\_ num);

 if(a==r\_ num)

 printf(“\nThe given number is a palindrome”);

 else

 printf(“\nThe given number is not a palindrome”);

}

**OUTPUT:**

Enter the number...22322

The reverse number of the 22322 is 22322

The given number is a palindrome

Enter the number...12322

The reverse number of the 12322 is 22321

The given number is not a palindrome

**Ex.No 9h**

**Generation of Armstrong Numbers**

**AIM:**

 To write a C program for generating Armstrong numbers between 1 to 1000 numbers.

**ALGORITHM:**

 Step-1 Start the program

 Step-2 Enter the number up yo which Armstrong numbers are to be generated.

 Step-3 Set a loop upto the number

 Step-4 Sum the cube of each individual digit of the number and store the sum in s.

 Step-5 Check whether the entered digit and calculated sum are equal.

Step-6 Find whether the reverse number is equal to the given number. If equal the number is Armstrong else not an Armstrong number

Step-7 Increment the loop and perform steps 5 and 6 till the end of loop is reached.

Step-8 Stop.

**PROGRAM:**

 /\*Program to find armstrong number between 1 to N\*/

#include<stdio.h>

main()

{

int number, temp, digit1, digit2, digit3;

printf("Printing all Armstrong numbers between 1 and 500:\n\n");

number = 001;

while (number <= 500)

{

digit1 = number - ((number / 10) \* 10);

digit2 = (number / 10) - ((number / 100) \* 10);

digit3 = (number / 100) - ((number / 1000) \* 10);

temp = (digit1\*digit1\*digit1) + (digit2\*digit2\*digit2) + (digit3\*digit3\*digit3);

if (temp == number)

{

printf("\nAmstrong Number:%d", temp);

}

number++;

}

}

**OUTPUT:**

Enter the number up to which Armstrong numbers are to be generated:

500

Armstrong numbers are : 1,153,370,371,407

**Ex.No 9i**

**Multiplication of two matrices (Using For Loop)**

**AIM:**

 To write a program to multiply two matrixes.

**ALGORITHM:**

Step-1 Start the program

Step-2 Enter the number of rows and columns of matrix A

Step-3 Enter the number of rows and columns of matrix B

Step-4 Enter the values of the A and B matrices

Step-5 Display the entered values of A and B in matrix format

Step-6 Set a loop up to row

Step-7 Set a inner loop up to column

Step-8 Set another inner loop up to column

Step-9 Multiply the A and B matrix and store the element in the C matrix

Step-10 Display the resultant matrix.

Step-11 Stop

**PROGRAM:**

/\* MULTPLICATION OF TWO MATRIX\*/

#include<stdio.h>

main()

{

 int a[15][15],b[15][15],c[15][15],i,j,k,r,s;

 int m,n;

 printf(“\nEnter the Rows and Columns of A matrix...”);

 scanf(“%d %d”,&m,&n);

 printf(“\nEnter the Rows and Columns of B matrix...”);

 scanf(“%d %d”,&r,&s);

 if(m!=r)

 printf(“\nMatrix multiplication cannot be performed”);

 else

 {

 printf(“\nEnter the elements of A matrix”);

 for(i=0;i<m;i++)

 {

 for(j=0;j<n;j++)

 scanf(“\t%d”,&a[i][j]);

 }

 printf(“\nEnter the elements of B matrix”);

 for(i=0;i<m;i++)

 {

 for(j=0;j<n;j++)

 scanf(“\t%d”,&b[i][j]);

 }

 printf(“\nThe elements of A matrix”);

 for(i=0;i<m;i++)

 {

 printf(“\n”);

 for(j=0;j<n;j++)

 printf(“\t%d”,a[i][j]);

 }

 printf(“\n The elements of B matrix”);

 for(i=0;i<m;i++)

 {

 printf(“\n”);

 for(j=0;j<n;j++)

 printf(“\t%d”,b[i][j]);

 }

 for(i=0;i<m;i++)

 {

 printf(“\n”);

 for(j=0;j<n;j++)

 {

 c[i][j]=0;

 for(k=0;k<m;k++)

 c[i][j]=c[i][j]+a[i][k]\*b[k][j];

 }

 }

 }

 printf(“The multiplication of two matrixes”);

 for(i=0;i<m;i++)

 {

 printf(“\n”);

 for(j=0;j<n;j++)

 printf(“\t%d”,c[i][j]);

 }

}

**INPUT AND OUTPUT**

Enter the Rows and Columns of A matrix... 3 3

Enter the Rows and Columns of B matrix... 3 3

Enter the elements of A matrix 2 4 6 8 9 10 11 12 13

Enter the elements of B matrix 1 3 5 7 9 11 13 15 17

The elements of A matrix

 2 4 6

 8 9 10

 11 12 13

The elements of B matrix

 1 3 5

 7 9 11

 13 15 17

The multiplication of two matrixes

 108 132 156

 201 255 309

 264 336 408

**Ex.No.9j.**

**Demonstrate Arithmetic Operations (Using Switch…Case)**

**AIM:**

 To write a C program for demonstrating arithmetic operations using switch case statement.

**ALGORITHM:**

Step-1 Start the program

Step-2 Display menu showing addition, subtraction, multiplication and division operation.

Step-3 Get the values for two variables

Step-4 Obtain the choice from the user and accordingly switch over to particular block.

Step-5 Display the result.

Step-6 If the user wishes to continue repeat steps 2 and 3

Step-7 Stop

**PROGRAM:**

/\* Program to demonstrate arithmetic operations \*/

#include<stdio.h>

#include<conio.h>

void main()

{

 int a, b, c, n;

 clrscr();

 printf(“1. Addition\n”);

 printf(“2. Subtraction\n”);

 printf(“3. Multiplication\n”);

 printf(“4. Division\n”);

 printf(“0. Exit\n”);

 printf(“Enter your choice : “);

 scanf(“%d”,&n);

 printf(“Enter the two numbers :”);

 scanf(“%d,%d”,&a,&b);

 switch(n)

 {

 case 1:

 c = a + b;

 printf(“Addition :%d\n”,c);

 break;

 case 2:

 c = a – b;

 printf(“Subtraction :%d\n”,c);

 break;

 case 3:

 c = a \* b;

 printf(“Multiplication :%d\n”,c);

 break;

 case 4:

 c = a / b;

 printf(“Division :%d\n”,c);

 break;

 case 0:

 exit(0);

 break;

}

 getch();

}

**OUTPUT:**

 1. Addition

 2. Subtraction

 3. Multiplication

 4. Division

 0. Exit

Enter Your Choice : 1

Enter the 2 nos a and b: 2 8

Addition : 10.

Enter Your Choice : 2

Enter the 2 nos a and b: 5 2

Subtraction : 3.

Enter Your Choice : 3

Enter the 2 nos a and b: 2 8

Multiplication : 16.

Enter Your Choice : 4.

Enter the 2 nos a and b: 8 4

Division : 2.

Enter Your Choice : 0.

Exit.

**Ex.No 10**

**Generating Pascal triangle using Array**

**AIM:**

 To write a C program to generate pascal triangleusing array.

**ALGORITHM:**

 Step-1 Start the program

 Step-2 Enter the no of lines from the user and accordingly create an array.

Step-3 Declare two variables one for outer rows and the other for inner rows.

Step-4 Check that if (j==0||i==j), display a[i][j]=1 or else display the consecutive integer Step-5 Display the triangle.

Step-6 Stop.

.

**PROGRAM:**

/\* Pascal Triangle \*/

#include<Stdio.h>

#include<conio.h>

void main()

{

int a[20][20], i ,j ,n, s=25, k;

 printf("\n enter the number of lines:");

 scanf("%d", &n);

 for(i=0;i<n; i++) //outer loop for rows

 for(k=s-2\*i; k>=0;k--)

 printf(" ");

 for(j=0;j<=i;j++) //inner loop for columns

 {

 if(j==0||i==j)

 a[i][j]=1;

 else

 a[i][j]=a[i-1][j-1]+a[i-1][j];

 printf("%4d",a[i][j]);

 printf("\n");

 }

 getch();

}

**OUTPUT:**

Enter the number of lines:6

 1

 1 1

 1 2 1

 1 3 3 1

 1 4 6 4 1

 1 5 10 10 5 1

**Ex.No 11a**

**EMPLOYEE PAYROLL USING STRUCTURE**

**AIM:**

To write a c program to generate employee payroll using structures.

**ALGORITHM:**

Step-1 Start the program

 Step-2 Create a Structure named Employee containing records Id,name, Basic Salary, Net

 Salary, HRA, DA and Tax.

Step-3 Get the employee Id and retrieve his details.

Step-4 Using the basic salary, DA, HRA, Tax calculate tax and net salary

Step-5 Display the details each employee record containing name, number, basic salary,

 HRA, DA, Net Salary and Tax

Step-6 Stop.

**PROGRAM:**

/\* Calculate Employee salary using Structures\*/

#include<stdio.h>

#include<conio.h>

struct employee

{

 char name[15];

 int empid;

 float bsal;

 float nsal;

 float gross;

};

void main()

{

 struct employee emp;

 float hra,da,tax;

 clrscr();

 printf("\nEmployee Details");

 printf("\nEnter the employee name");

 scanf("%s",emp.name);

 printf("\nEnter the employee id");

 scanf("%d",&emp.empid);

 printf("\nEnter the basic salary");

 scanf("%f",&emp.bsal);

 hra=((10\*emp.bsal)/100);

 da=((35\*emp.bsal)/100);

 tax=((15\*emp.bsal)/100);

 emp.gross=emp.bsal+hra+da;

 emp.net=emp.gross-tax;

 printf("\nEmployee name:%s",emp.name);

 printf("\nEmployee no:%d",emp.empid);

 printf("\nEmployee Basic salary:%f",emp.bsal);

 printf("\nHRA:%f",hra);

 printf("\nDA:%f",da);

 printf("\nTax:%f",tax);

 printf("\nNetSalary%f",emp.nsal);

 printf("\nGross salary:%f",emp.gross);

 getch();

}

**OUTPUT:**

Employee Details:

Enter the employee name : Robin

Enter the employee Id : 100

Enter the basic salary : 30000

Employee name : Robin

Employee Id : 100

Employee Basic salary : 30000.000000

HRA : 3000.000000

DA : 10,500.000000

Tax : 4500.000000

Gross salary : 39000.000000

**Ex.No 11.b**

**Student Marks using Union**

**AIM:**

To write a program to print the student name, roll no, average mark and their grades.

**ALGORITHM:**

Step-1 Start the program

Step-2 Initialize the union variable

Step-3 Enter the number of student

Step-4 Set a loop up to the number of student

Step-5 Enter the student name, roll no, average marks

Step-6 Find their grades

Step-7 Print the student name, roll no, average and their grade

Step-9 Stop

**PROGRAM:**

/\*Student marks using union\*/

#include<stdio.h>

main()

{

 union student

 {

 char name[20];

 char regno[12];

 int avg;

 char grade;

 } stud[25],\*ptr;

 int i,no;

 printf(“Enter the number of the students...”);

 scanf(“%d”,&no);

 for(i=0;i<no;i++)

 {

 printf(“\n student[%d] information:\n”,i+1);

 printf(“Enter the name”);

 scanf(“%s”,stud[i].name);

 printf(“\nEnter the roll no of the student”);

 scanf(“%s”,stud[i].regno);

 printf(“\nEnter the average value of the student”);

 scanf(“%d”,&stud[i].avg);

 }

 pt=stud;

 for(pt=stud;pt<stud+no;ptr++)

 {

 if(ptr->avg<30)

 ptr->grade=’D’;

 else if(ptr->avg<50)

 ptr->grade=’C’;

 else if(ptr->avg<70)

 ptr->grade=’B’;

 else

 ptr->grade=’A’;

 }

 printf(“\n”);

 printf(“NAME REGISTER-NO AVERAGE GRADE\n”);

 for(ptr=stud;ptr<stud+no;pt++)

 {

 printf(“%-20s%-10s”,ptr->name,ptr->regno);

 printf(“%10d \t %c\n”,ptr->avg,ptr->grade);

 }

}

**OUTPUT:**

Enter the number of the students

3

student[1] information:

Enter the name Jack

Enter the roll no of the student 31705205001

Enter the average value of the student 90

student[2] information:

Enter the name Raj

Enter the roll no of the student 31705205002

Enter the average value of the student 88

student[3] information:

Enter the name Kiran

Enter the roll no of the student 31705205003

Enter the average value of the student 75

NAME REGISTER-NO AVERAGE GRADE

Jack 31705205001 90 S

Raj 31705205002 88 A

Kiran 31705205003 75 B

**Ex.No 12.a**

**Swapping Two Numbers (Using Call By Value)**

**AIM:**

 To write a C program to swap two numbers without using third variable using call by value.

**ALGORITHM:**

 Step -1 Start the program

 Step -2 Enter the two numbers

 Step -3 Call the swap function

Step -4 Add the second number with the first number

Step -5 Subtract the second number from the first number and assign the value to the

 Second number

Step -6 Subtract the second number from the first number and assign the value to the

 First number

Step -7 Stop

**PROGRAM:**

/\* Swapping 2 Nos without 3rd variable using call by value\*/

#include<stdio.h>

#include<conio.h>

main()

 {

 int n1,n2;

 void swap(int ,int);

 clrscr();

 printf("\n Enter the two numbers");

 scanf("%d%d",&n1,&n2);

 printf("\n Before swapping the values of n1 = %d and n2 = %d",n1,n2);

 swap(n1,n2);

 getch();

 }

void swap(int a,int b)

 {

 a=a+b;

 b=a-b;

 a=a-b;

 printf("\n After swapping the values of n1 = %d and n2 = %d",a,b);

}

**OUTPUT:**

Enter the two numbers

5

10

Before swapping the values of n1 =5 and n2 =10

After swapping the values of n1 =10 and n2 = 5

**Ex.No 12.b**

Swapping Two Numbers Using Call be Reference

**AIM:**

 To write a C program to swap two numbers using call by reference.

**ALGORITHM:**

 Step -1 Start the program

 Step -2 Enter the two numbers

 Step -3 Call the swap function using the address of the numbers as arguments

Step -4 Assign the address of the first number to a temporary variable

Step -5 Assign the address of the second number to the first number

Step -6 Assign the value of the temporary variable to the first number

Step -7 Stop

**PROGRAM :**

/\* Swapping 2 Nos using call by reference \*/

#include<stdio.h>

#include<conio.h>

main()

 {

 int n1,n2;

 void swap(int \*,int \*);

 clrscr();

 printf("\n Enter the two numbers");

 scanf("%d%d",&n1,&n2);

 printf("\n Before swapping the value of n1= %d and n2= %d",n1,n2);

 swap(&n1,&n2);

 printf("\n After swapping the value of n1= %d and n2= %d",n1,n2);

 getch();

 }

void swap(int \*a,int \*b)

 {

 int t;

 t = \*a;

 \*a = \*b;

 \*b = t;

 }

**OUTPUT:**

Enter the two numbers

5

10

Before swapping the value of n1 = 5 and n2 = 10

After swapping the value of n1 = 10 and n2 = 5

**Ex.No 12.c**

 **Factorial Computation using recursive Function**

**AIM:**

 To write a program to find the factorial of the given number using recursion

**ALGORITHM:**

Step-1 Start the program

Step-2 Enter the number

Step-3 Call the recursive function passing the number to the recursive function as an argument.

Step-4 If the entered number is equal to one then return one to main function.

Step-5 If the number is less greater then one then call recursive

Step-6 Print the factorial value of the number.

Step-7 Stop

**PROGRAM:**

/\* Factorial using recursion\*/

#include<stdio.h>

main()

{

 int num,a;

 printf(“Enter the number”);

 scanf(“%d”,&num);

 a=recur(num);

 printf(“The factorial of the number %d is %d”,num,a);

}

recur(int no)

{

 int fact=1;

 if(no==1)

 return(1);

else

 fact=no\*recur(no-1);

}

**OUTPUT:**

Enter the number 5

The factorial of the number 5 is 120