# Practical 3

1) Write a program to input two numbers and display the highest number.

#include <stdio.h>

#include <stdlib.h>

int main()

{

float x,y; printf("Enter a number :"); scanf("%f",&x);

printf("Enter your second number :"); scanf("%f",&y);

if(x>y)

printf("The highest value is

%.2f\n",x); else

printf("The highest value is %.2f\n",y);

return 0; }

2). Write a complete program to ask user to enter three integer numbers, and then tell the user the

largest value and smallest value among the three numbers.

printf("1st number (%d) is largest number \n",num1); else if(num2>num1 && num2>num3) printf("2nd number (%d) is largest number \n",num2); else if(num3>num1 && num3>num2) printf("3rd number

(%d) is largest number \n",num3); else printf("All entered numbers are same \n");

if(num1<num2 && num1<num3)

printf("1st number (%d) is smallest number \n",num1); else if(num2<num1 && num2<num3) printf("2nd number (%d) is smallest number \n",num2); else if(num3<num1 && num3<num2) printf("3rd number (%d) is smallest number \n",num3); else printf("All entered numbers are same");

}

char e\_name[50];

float b\_sal , n\_sal,inc;

printf("Enter Employee name:"); scanf("%s",&e\_name); printf("Enter Employee Basic salary:"); scanf("%f",&b\_sal);

3). Display employee name, new salary, when the user inputs employee name, and basic salary. You

can refer following formula and the table to calculate new salary:

New Salary = Basic Salary + Increment

Basic Salary Increment

Less than 5000 5% of Basic Salary

More than or equal 5000 and less than 10000 10% of Basic

Salary More than or equal 10,000 15% of Basic Salary

#include <stdio.h>

#include <stdlib.h>

int main()

{

char x[30]; float s; printf("Enter employee's first name :"); scanf("%s",&x);

printf("Enter your basic salary :"); scanf("%f",&s); if(s<5000) s=s\*105/100; else if(s<10000) s=s\*110/100; else

s=s\*115/100;

printf("HI %s, Your new salary is

%.2f\n",x,s); return 0; }

4). Diameter, Circumference and Area of a Circle) Write a program that reads in the radius of a circle and prints the circle’s diameter, circumference and area. Use the constant value

3.14159 for π. Perform each of these calculations inside the printf statement(s) and use the conversion specifier %f

#include<stdio.h> int main()

{

float d,c,a,r; float pi=3.14159; printf("Enter radius length :"); scanf("%f",&r); printf("Diameter=%f\n",d=r\*2); printf("Circumference=%f\n",c=2\*pi\*r); printf("Area=%f\n",a=pi\*r\*r);

}

5). Write a program that reads in two integers and determines and prints if the first is a multiple of

the second.

#include <stdio.h> #include <stdlib.h>

int main()

{

int x,y; printf("Enter your first value :"); scanf("%d",&x);

printf("Enter your second value

:"); scanf("%d",&y);

if(x%y==0)

printf("%d is multiple of %d\n",x,y);

else

printf("%d is not multiple of %d\n",x,y);

return 0;

}

6). Write a C program that prints the integer equivalents of some uppercase letters, lowercase

letters, digits and special symbols. As a minimum, determine the integer equivalents of the following: A B C a b c 0 1 2 $ \* + / and the blank character.

int main() { char num1; printf("Enter integer

value:");

scanf("%c",&num1);

printf("%d",num1);

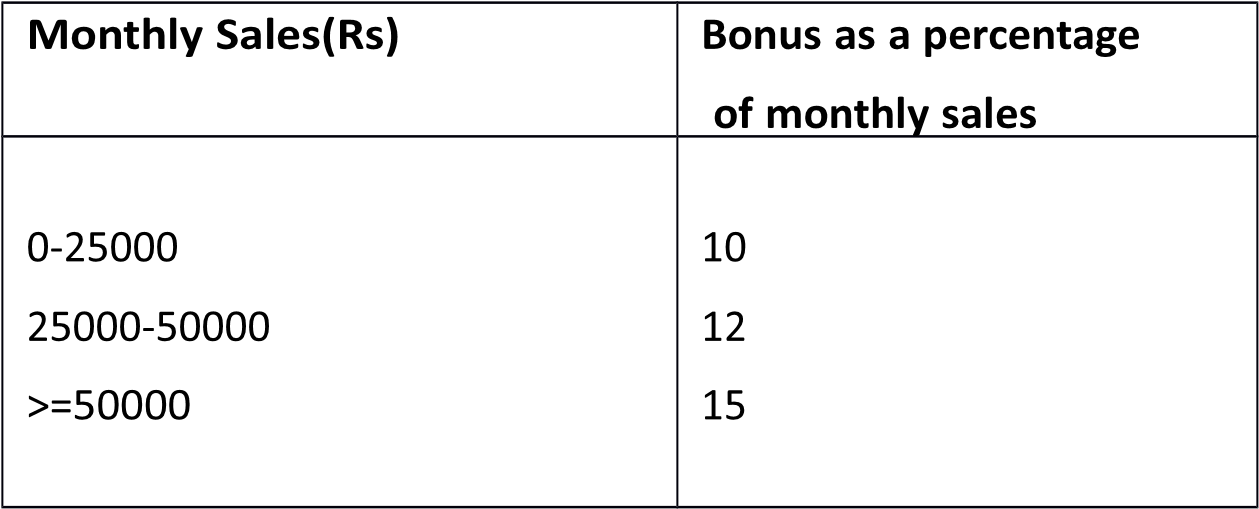
}

7). The gross remuneration of a company salesman comprises the Basic Salary and certain additional allowances and bonuses as given below:

Salesmen with over 5 years’ service receive a 10% additional allowance of Basic Salary each month.

Salesmen working in Colombo ( Input character ‘C’ if the city is Colombo) receive an additional allowance of Rs. 2,500/- per month.

The monthly bonus payment is computed as given below:



Write a program to output the gross monthly remuneration of a salesman.

#include<stdio.h> int main()

{

float bs,ts,fs,es; char c; int m;

printf("Enter your basic salary\n"); scanf("%f",&bs); if (bs>=50000) ts=bs+bs\*.15; else if (bs<25000) ts=bs+bs\*.12;

else ts=bs+bs\*.1;

printf("Enter your number of service years\n"); scanf("%d",&m);

if (m>=5) es=ts+bs\*.1;

else

es=ts;

printf ("Enter C if you live in colombo,otherwise enter n \n"); scanf(" %c",&c); if (c=='c')

fs=es+bs\*0.10; else fs=es;

printf("Your final salary is %f",fs);

}

# Practical 4

Q1.

int main() { int num; printf("enter number:"); scanf("%d",&num);

if(num%2==0)

printf("your entered number is even"); else printf("your entered number is odd");

}

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{ int num;

printf("enter number:"); scanf("%d",&num); switch

(num%2) { case 0:

printf("your entered number is even"); break; default:

printf("your entered number is odd");

}

}

Q2.

#include<stdio.h> int main()

{

int n1,n2,a,o,b; printf("Enter 1st number"); scanf("%d",&n1); printf("Enter 2nd number"); scanf("%d",&n2); printf("Choose a operation\n 1-->+\n 2-->-\n 3-->\*\n 4-->/\n Enter operation :"); scanf("%d",&o); switch (o)

{

case 1 : a=n1+n2; printf("Answer is =%d",a);

break; case 2 :if (n1<=n2)

a=n2-n1; else a=n1-n2; printf("Answer is = %d",a); break;

case 3 :a=n1\*n2; printf("Answer is = %d",a);

break; case 4 :if (n1<=n2)

a=n2/n1; else a=n1/n2; b=n1%n2;

printf("Answer is =%d \nRemainder=%d",a,b);

break;

default : printf("Error : Invalid operation");

}

}

Q3.

int choice; float radius, PI =

3.14159;

printf("Menu:\n");

printf("1. Calculate the circumference of a circle\n"); printf("2. Calculate the area of a circle\n"); printf("3. Calculate the volume of a sphere\n"); printf("Enter your choice (1-3): "); scanf("%d", &choice);

printf("Enter the radius: "); scanf("%f", &radius);

switch (choice) { case

1: {

float circumference = 2 \* PI \* radius; printf("Circumference:

%.2f\n", circumference);

break;

} case 2: {

float area = PI \* radius \* radius; printf("Area: %.2f\n", area); break;

} case 3: {

float volume = (4.0 / 3.0) \* PI \* (radius, 3); printf("Volume: %.2f\n", volume); break; }

default: printf("Invalid choice\n"); break;

}

Q4. #include<stdio.h> int main()

{ char l;

printf("Enter a letter :"); scanf("%c",&l);

switch(l)

{

case 'a':printf("%c is a vowel",l);

break;

case 'e':printf("%c is a vowel",l);

break;

case 'i':printf("%c is a vowel",l);

break;

case 'o':printf("%c is a vowel",l);

break;

case 'u':printf("%c is a vowel",l);

break;

case 'A':printf("%c is a vowel",l);

break;

case 'E':printf("%c is a vowel",l); break;

case 'I':printf("%c is a vowel",l);

break;

case 'O':printf("%c is a vowel",l);

break;

case 'U':printf("%c is a vowel",l);

break;

default :printf("%c is not a vowel",l);

}

}

Q5.

. int month;

printf("Enter the month number (1-12): "); scanf("%d", &month);

int days;

switch (month) { case 1: case 3: case 5: case 7: case 8: case 10: case 12: days = 31; break; case 4: case 6: case 9: case 11: days = 30; break; case 2: days = 28; break; default:

printf("Invalid month number.\n"); return 0;

}

printf("Total number of days in the month: %d\n", days);

# PRACTICAL - 05

**Q1.**

**While loop**

int i;

while (i<=100){ printf("%d",i); i++; }

**do While loop**

int i; do {

printf("%d",i);

i++;

}while (i<=100);

**for loop**

for(int i=0; i<=100;i++){ printf("%d",i);

}

Q2. #include<stdio.h> int main()

{

float avg,mark,total; int count=0;

while(count<10)

{

printf("Enter your mark"); scanf("%f",&mark); count++; total=total+mark;

}

avg=total/count; printf("Total is %f",total); printf("Average is %f",avg);

}

Q3.

int num,result=1; printf("enter a number:"); scanf("%d",&num);

if(num<0) printf("Error: Factorial of a negative number is undefined."); else if(num==0)

printf("Error: Factorial of a negative number is undefined.");

else for(int i=1;i<=num;i++)

{

result\*=i;

}

printf("%d",result)}

Q4. #include<stdio.h> int main()

{

int total=0,number,i=1,; printf("Enter a number"); scanf("%d",&number);

do

{

total=total+i;

i++;

}

while(i<=number); printf("Total is %d",total);

}

Q5,

int num,rem,rev=0; printf("Enter a number: "); scanf("%d", &num);

do{ rem=num%10; rev=rem+(rev\*10); num/=10; } while (num!=0); printf("%d",rev);

}

Q6. #include<stdio.h> int main()

{

int number,exponent,i=1,a=1; printf("Enter the base"); scanf("%d",&number); printf("Enter the exponent"); scanf("%d",&exponent);

do

{

a=a\*number;

i++;

}

while(i<=exponent); printf("Answer=%d",a);

}

Q7.

char x[]="Fibonacci Sequence"; for(int i=0;i<=10;i++){ printf("%c",x[i]);

}

Q8.

#include<stdio.h> int main ()

{

int number,a=0,total=0,digits=0; printf("Enter a number"); scanf("%d",&number); int original=number;

do

{ number=number/10;

digits++;

}

while(number>0); number=original;

do

{

a=number%10; total=total+pow(a,digits);

number=number/10;

} while(number>0);

if (original == total)

printf("%d is an Armstrong number",original);

else

printf("%d is not an Armstrong number",original);

}

Q9. int main() { char letter;

printf("ASCII values for letters A to Z:\n"); for (letter = 'A'; letter <= 'Z'; ++letter) { printf("%c: %d\n", letter, letter);

}

}

Q10.

#include <stdlib.h>

int main()

{ printf("\*\n"); printf("\*\*\n"); printf("\*\*\*\n"); printf("\*\*\*\*\n"); printf("\*\*\*\*\*\n"); return 0;

}

Q11. int number, is\_prime = 1;

printf("Enter a number: "); scanf("%d", &number);

if (number < 2) { is\_prime = 0; } else {

for (int i = 2; i \* i <= number; i++) { if (number % i == 0) {

is\_prime = 0;

break;

}

}

}

if (is\_prime) { printf("%d is a prime number.\n", number);

} else {

printf("%d is not a prime number.\n", number);

}

**Q12.**  int number;

printf("Enter an integer: "); scanf("%d", &number);

printf("Factors of %d: ", number);

for (int i = 1; i <= number; i++) {

if (number % i == 0) {

printf("%d ", i);

}

}

printf("\n");

**Q13.**

int num, sum = 0; printf("Enter numbers to add (enter -1 to stop):\n"); while (1) { scanf("%d", &num); if (num == -1)

{ break;

}

sum += num;

}

printf("Sum: %d\n", sum);

}

**Q14.**

int x[10]; for (int i = 1; i <=10; ++i) { printf("enter %d ",i); scanf("%d",&x[i]);

}

for (int i = 1; i <=10; ++i) { printf("%d ",x[i]);

}

**Q15.**

int x[10],count,new[10]; for (int i = 1; i <=10; ++i) { printf("enter %d ",i); scanf("%d",&x[i]);

if(x[i]%2==0){ count++;

}

}

printf("%d \n",count);

## Section B

**Q1.**

int numbers[10]; int positiveCount = 0, negativeCount = 0, zeroCount = 0;

printf("Enter 10 numbers:\n");

for (int i = 0; i < 10; i++) {

scanf("%d", &numbers[i]);

if (numbers[i] > 0) { positiveCount++; } else if

(numbers[i] < 0) {

negativeCount++;

} else { zeroCount++;

}

}

printf("Number of positive numbers: %d\n", positiveCount); printf("Number of negative numbers: %d\n", negativeCount); printf("Number of zeros: %d\n", zeroCount);

**Q2.**

int marks[10]; int i, sum = 0; int max\_mark = 0, min\_mark = 100;

printf("Enter the marks of 10 students:\n"); for (i = 0; i < 10; i++) { printf("Student %d:

", i + 1); scanf("%d", &marks[i]);

if (marks[i] > max\_mark) max\_mark = marks[i]; if (marks[i] < min\_mark) min\_mark = marks[i];

sum += marks[i];

}

float average = (float)sum / 10;

printf("Maximum Marks: %d\n", max\_mark); printf("Minimum Marks: %d\n", min\_mark); printf("Average

Marks: %.2f\n", average);

}

**Q3.**

int price[10]; int i, sum =

0; int greater = 200, count =

0;

printf("Enter the price of 10 idems:\n"); for (i = 0; i < 10; i++) { printf("price

%d: ", i + 1); scanf("%d", &price[i]);

if (price[i] > greater)

count+=1;

sum += price[i];

}

float average = (float)sum / 10;

printf("number of items which the price is greater than 200: %d\n", count); printf("Average price: %.2f\n", average);

**Q4.**

int employee\_no;

float basic\_salary; int count = 0; printf("Enter the Employee no and Basic Salary (Enter -999 to exit):\n"); while (1) { printf("Employee no: "); scanf("%d", &employee\_no);

if (employee\_no == -999)

break;

printf("Basic Salary: "); scanf("%f", &basic\_salary);

if (basic\_salary >= 5000) count++;

}

printf("Number of Employees with Basic Salary >= 5000: %d\n", count);

}

**Q5.**

int employee\_no; float hours\_worked; float overtime\_payment; int count = 0; int total\_employees = 0;

printf("Enter the Employee number and Hours Worked (Enter -999 to exit):\n");

while (1) { printf("Employee number: "); scanf("%d", &employee\_no);

if (employee\_no == -999)

break;

printf("Hours Worked: "); scanf("%f", &hours\_worked);

// Calculate overtime payment if (hours\_worked <= 40) overtime\_payment = 0;

else if (hours\_worked > 40 && hours\_worked <= 50) overtime\_payment = (hours\_worked - 40) \* 150; else overtime\_payment = 10 \* 150 + (hours\_worked - 50) \* 200;

printf("Employee number: %d\n", employee\_no); printf("Overtime Payment: %.2f\n", overtime\_payment);

if (overtime\_payment > 4000)

count++;

total\_employees++;

}

float percentage = (float)count / total\_employees \* 100;

printf("Percentage of employees whose overtime payment exceeds Rs. 4000: %.2f%%\n", percentage);