GOVT CO-ED POLYTECHNIC

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LAB MANUAL

Branch : Electrical Engineering

Year & Semester : 2nd Year / 4th Semester

2000463(022) – Computer Programming & Basic Networking (Lab)

CONTENTS

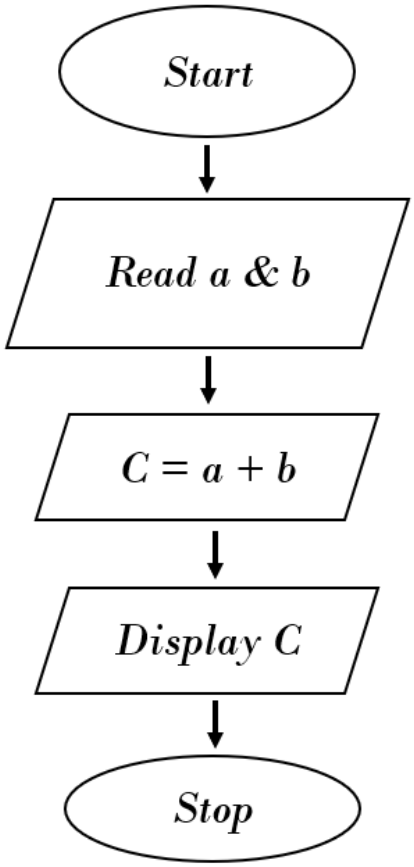
Experiment No: 1

AIM: Write an algorithm and draw a flowchart for addition of two numbers.

Algorithm:

- Step 1: Start.
- Step 2: Declare a, b and C.
- Step 3: Read a and b.
- Step 4: C = a + b.
- Step 5: Display C.
- Step 6: Stop.

Flowchart:



Result:

Thus, the algorithm for addition of two numbers along with its flowchart has been drawn successfully.

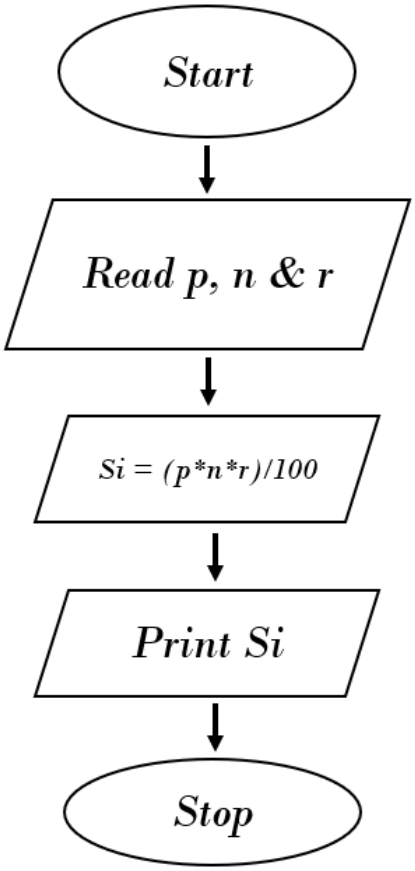
Experiment No: 2

AIM: Write an algorithm and draw a flowchart for calculating simple interest.

Algorithm:

- Step 1: Start.
- Step 2: Declare P, n, r, Si.
- Step 3: Read P, n and r.
- Step 4: Si = (P*n*r)/100.
- Step 5: Display Si.
- Step 6: Stop.

Flowchart:



Result:

Thus, the algorithm for calculating simple interest along with its flowchart has been drawn successfully.

Experiment No: 3

AIM: Write a program in 'C' to display a simple message using *printf()* function.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the algorithm using keyboard.
- Step 4: Press *Alt + C* to compile the algorithm are correct or not.
- Step 5: Find the error in algorithm if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
void main()
{   clrscr();
    printf("Hello World….");
    getch();
}
```

Result:

Thus, a program in 'C' to display a simple message using *printf()* function, has been compiled successfully.

Experiment No: 4

AIM: Write a program to find ASCII value of a character using input/output function.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the *C++* code given below using keyboard.
- Step 4: Press *Alt + C* to compile the code if its correct or not.
- Step 5: Correct the syntax in code if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
int main()
{  clrscr();
    char ch;
   printf("Enter a character :  ");
   scanf("%C", &ch);
   i = ch;
   printf("ASCII value of %C = %d",ch,i);
   getch();
    return (0);
}
```

Result:

Thus, we found out the value of A = 65 using a program meant to find ASCII value of a character.

Experiment No: 5

AIM: Write a program in 'C' for solving quadratic equation using ***if...else*** statement.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the *C++* code given below using keyboard.
- Step 4: Press *Alt + C* to compile the code if its correct or not.
- Step 5: Correct the syntax in code if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
  main()
{  clrscr();
    float a, b, c, r1, r2, d;
   printf("\nEnter the value of a b and c : \n");
   scanf("%f%f%f", &a,&b,&c);
   d = b*b – 4*a*c;
    if (d > 0)
          { r1 = -b+sqrt(d)/(2*a);
            r2 = -b-sqrt(d)/(2*a);
            printf("\nThe real roots : %f\n%f",r1,r2);
           }
     else if (d == 0)
           { r1 = -b/(2*a); r2 = -b/(2*a);
             printf("\nThe roots are real & equal : f\n%f",r1,r2);
            }
      else
           { printf("\nThe roots are imaginary");
            }
    getch();
    return (0);
}
```

Result:

Thus, solving quadratic equation using ***if...else*** statement in 'C' has been performed successfully.

Experiment No: 6

AIM: Write a program to find the grade of a student using nested ***if...else*** statement.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the *C++* code given below using keyboard.
- Step 4: Press *Alt + C* to compile the code if its correct or not.
- Step 5: Correct the syntax in code if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
  main()
{  clrscr();
    int n = 0;
   printf("\nEnter the marks of student : \n");
   scanf("%d", &n);

    if (n > 89)
       printf("O");
    else if (n > 79)
       printf("E");
     else if (n > 69)
       printf("A");
     else if (n > 59)
       printf("B");
     else if (n > 49)
       printf("C");
     else if (n < 39)
       printf("F");

    getch();
    return (0);
}
```

Result:

Thus, a program to find the grade of a student using nested ***if...else*** statement has been compiled successfully.

Experiment No: 7

AIM: Write a program to calculate sum of first 'N' natural numbers using while loop.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the *C++* code given below using keyboard.
- Step 4: Press *Alt + C* to compile the code if its correct or not.
- Step 5: Correct the syntax in code if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
  void main()
{  clrscr();
    int num, i, sum = 0; // Initialize & declare the local variable
   printf("\nEnter a positive number : \n");
   scanf("%d", &num); // the number up to which the sum is required
   i = 0;
   while(i <= num) // define while loop and I should be less than num
    { sum = sum + i; // store the sum of natural number.
       i++ ; // increment i by 1.
     }
     printf("\nSum of first %d natural number is : %d", num, sum);
    getch();
}
```

Result:

Thus, a program to calculate sum of first 'N' natural numbers using while loop has been compiled successfully.

Experiment No: 8

AIM: Write a program in 'C' to check a given number is prime or not using loop with break statement.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the *C++* code given below using keyboard.
- Step 4: Press *Alt + C* to compile the code if its correct or not.
- Step 5: Correct the syntax in code if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
  int main()
{  clrscr();
    int number, i, count = 0; // Initialize & declare the local variable
   printf("\nEnter any positive number to check : \n");
   scanf("%d", &number);

   for ( i = 2; i <= number/2; i++ )
      {
          if (number % i == 0)
              { count++;
                 break;
               }
      }
    if (count == 0 && number != 1)
        { printf("\n%d is a Prime Number\n",number);
        }
     else
         { printf("\n%d is not a Prime Number\n",number);
        }

   getch();
   return(0);
```

Result:

Thus, a program to check a given number is prime or not using loop with break statement has been compiled successfully.

Experiment No: 9

AIM: Writes a program in 'C' to find Fibonacci series using for loop.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the *C++* code given below using keyboard.
- Step 4: Press *Alt + C* to compile the code if its correct or not.
- Step 5: Correct the syntax in code if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
  void main()
{  clrscr();
    int a=0, b=1, c, n, i;
   printf("\nEnter the number of terms : \n");
   scanf("%d", &n);
   printf("Fibonacci Series : \n");

   for ( i = 1; i <= n; i++ )
      {
          printf ("%d",a)
             c = a + b;
             a = b;
             b = c;
       }
    getch();

}
```

Result:

Thus, a program in 'C' to find Fibonacci series using for loop has been compiled successfully.

Experiment No: 10

AIM: Write a program in 'C' to calculate sum of two numbers using user defined function.

Algorithm:

- Step 1: Open program *turboC++*.
- Step 2: Press *Alt + F* & then press *New* (to open the new file or program page).
- Step 3: Write the *C++* code given below using keyboard.
- Step 4: Press *Alt + C* to compile the code if its correct or not.
- Step 5: Correct the syntax in code if compilation shows *error signal.*
- Step 6: Press *Alt + R* to run the program.

C++ Code:

```
# include <stdio.h>
# include<conio.h>
  int Add(int a, int b)
      {int x; x = a + b; return x;
       }
   int main()
{  clrscr();
    int n1, n2, sum = 0;
   printf("\nEnter the two numbers whose sum is required : \n");
   scanf("%d%d", &n1,&n2);

   sum =  Add(n1,n2);
   printf("Addition of two numbers is : %d\n",sum);

   return(0);

}
```

Result:

Thus, a program in 'C' to calculate sum of two numbers using user defined function has been compiled successfully.

Dos & Don'ts in the Computer Lab

Dos	Don'ts
• Enter/exit lab quietly. • Raise your hand before asking any doubt. • Always have a clean & dry hand. • Touch keyboard & mouse gently. • Keep your work space clean. • Search only approved websites	• No food or drinks in the lab. • Do not mark on any part of computer. • Do not change any key settings of computer. • No magnets allowed in computer lab • Do not pull any cable/cord of any system. Ask teacher before taking any printout.