**LAB #04:**

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# LAB #04 – Escape Sequences, Strings, cin, getline & if - else

This lab contains Escape Sequences, Char and String Data Types, cin, getline, sizeof, Name Constant, and Operator Precedence and if - else.

## Task 1: Escape Sequences

Objective: To understand how escape sequences format text output.

Problem Statement: Write a program that prints your name, department, and favorite quote using escape sequences to align and decorate output.

Solution:

|  |
| --- |
| #include <iostream>  using namespace std;  int main() {  cout<< "Name:\t\tJibreel Ahmed\n";  cout<< "Department:\t\t\bScit\n";  cout<< "Quote:\t\t\'Knowledge is power\'\n";  return 0;  } |

Sample Output:

|  |
| --- |
| Name: Sheeza Batool Department: SCIT Quote: "Knowledge is power." |

## Task 2: string, cin and arithmetic operators

Write a program that calculates the average rainfall for three months. The program  
should ask the user to enter the name of each month, such as June or July, and the  
amount of rain (in inches) that fell each month. The program should display a message  
similar to the following:  
The average rainfall for June, July, and August is 6.72 inches.

Solution:

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| --- |
| #include <iostream>  #include <string>  using namespace std;  int main(){  string month, month2, month3;  string rainfall;  cout<<"Enter month 1:";  getline(cin, month);  cout<<"Enter month 2:";  getline(cin, month2);  cout<<"Enter month 3:";  getline(cin, month3);  cout<<"Enter amount of rain";  getline(cin, rainfall);  cout<<"The average rainfall for"<<" "<< month<<", " << month2 <<", "<< month3 <<", is "<< rainfall<< "inches";  return 0;  } |

## Task 3: Name constant, cin and arithmetic operators

The surface area A of a cylinder is given by the following formula:  
***A***  = ***2*** ***πrh*** + ***2*** ***πr***2  
The volume V of a cylinder is given by the following formula:  
***V*** = π*r*2***h***The term r is the radius and h is the height of the cylinder. Write a program that asks  
the user for the radius and height of the cylinder and displays the area and volume.  
Assume that value of π is 3.1415926535.

Solution:

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| --- |
| #include <iostream>  using namespace std;  int main(){  float radius;  float height;  double volume;  double area;  double pie=3.14159;  cout<<"Enter Radius:\t";  cin>>radius;  cout<<"Enter height:\t";  cin>>height;  area= 2\*pie+2\*(pie\*pie);  volume= pie\*(radius\*radius)\*height;  cout<< "Area is:\t" << area <<endl;  cout<<"Volume is:\t"<<volume <<endl;  return 0;  } |

## Task 4: cin, if statement

A company is hiring new recruits who should be within 18 to 28 years of age. Write a  
program that asks the user to input the current year and an applicant’s year of birth.  
It then displays the age and a message indicating whether the applicant is eligible.

Solution:

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| --- |
| #include <iostream>  using namespace std;  int main(){  int Yearofbirth;  int currentyear;  cout<< "Enter year of birth:\t";  cin>> Yearofbirth;  cout<<"Enter current year:\t";  cin>>currentyear;  int yeardifference=currentyear-Yearofbirth;  if (yeardifference>18 && yeardifference<28)  {  cout<<"Eligible";  }  else {cout<<"Not Eligible";}  return 0;  } |

## Task 5: cin, if – else statement

Write a program that asks the user to enter the **length** and **width** of **two rectangles**.  
The program should calculate the **area** of each rectangle using the formula:

After calculating both areas, the program should:

* Display the **area of each rectangle**,
* Indicate whether **Rectangle 1 and Rectangle 2 have equal areas or not**.

Solution:

|  |
| --- |
| #include <iostream>  using namespace std;  int main(){  float Lenght1;  float Width1;  float Lenght2;  float Width2;  cout<<"Enter Lenght of Rectacngle 1:\t";  cin>>Lenght1;  cout<<"Enter width of Rectangle 1:\t";  cin>>Width1;  double area1=Width1\*Lenght1;  cout<<"Enter Lenght of Rectacngle 2:\t";  cin>>Lenght2;  cout<<"Enter width of Rectangle 2:\t";  cin>>Width2;  double area2=Width2\*Lenght2;  cout<<"Area of Rectangle 1 is:\t"<<area1<<endl;  cout<<"Area of Rectangle 2 is:\t"<<area2<<endl;  if (area1==area2)  {  cout<<"Both Rectangles have equal areas";  }  else {cout<<"Both Rectangles do not have equal areas";}  return 0;  } |