**Lab # 1**

**Week = 21st-October – 25th-October-2024**

**Topics Covered:**

* Variables
* Data Types
* Arithmetic Operators
* Precedence of Operators

**Problem Statement:**

“Calculate the average age of a class of ten students. Prompt the user to enter the age of each student.”

* We need 10 variables of int type to calculate the average age.

int age1, age2, age3, age4, age5, age6, age7, age8, age9, age10;

* “Prompt the user to enter the age of each student” this requires cin>> statement.

For example:

cin>> age1;

* Average can be calculated by doing addition of 10 variables and dividing sum with 10.

TotalAge = age1 + age2 + age3 + age4 + age5 + age6 + age7 + age8 +age9 + age10 ;

AverageAge = TotalAge / 10;

**Solution:**

#include<iostream>

using namespace std;

int main(){  
  
**// declaring 10 integer variables to take input of students age**  
int age1,age2,age3, age4, age5, age6, age7, age8, age9, age10;  
  
**// declaring variables to calculate totalAge and averageAge**  
int TotalAge = 0, AverageAge = 0;

**// taking input of each student age**  
cout<<"please enter the age of student 1 ";

cin>>age1;

cout<<"please enter the age of student 2 ";

cin>>age2;

cout<<"please enter the age of student 3 ";

cin>>age3;

cout<<"please enter the age of student 4 ";

cin>>age4;

cout<<"please enter the age of student 5 ";

cin>>age5;

cout<<"please enter the age of student 6 ";

cin>>age6;

cout<<"please enter the age of student 7 ";

cin>>age7;

cout<<"please enter the age of student 8 ";

cin>>age8;

cout<<"please enter the age of student 9 ";

cin>>age9;

cout<<"please enter the age of student 10 ";

cin>>age10;

**//calculate totalAge by adding age of all students**  
TotalAge = age1 + age2 + age3 + age4 + age5 + age6 + age7 + age8 + age9 + age10;   
 **// calculate AverageAge by dividing the totalAge with number of students**AverageAge = TotalAge/10;

**//Display the result (average age)**

cout<<"Average of students is: "<<AverageAge;

}

**Alternative Solution**

#include<iostream>

using namespace std;

main() {  
  **// declaring variable age to take input** int age=0;  
   
 **// declaring variables to calculate totalAge and averageAge**  
 int TotalAge = 0, AverageAge = 0;

**// using for loop to take input of each students and adding them**  
 for (int i = 1;i<=10;i++){

cout<<"please enter the age of student "<<i<<" :\t";

cin>>age;

TotalAge += age;

}

**// calculate AverageAge by dividing the totalAge with number of students**  
 AverageAge = TotalAge/10;

**//Display the result (average age)**

cout<<"Average of students is: "<<AverageAge;

}