



Pakistan Institute of Engineering and Applied Sciences

OPP LAB ASSIGNMENT

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- **Semester** 2nd
- **Subject:** OOP LAB Assignment
- **Question** 1-5
- **Lab No:** 01
- **Submitted to:** Sir Zain Khan
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✓ Question No: 01

Write down the validity status of following variables with reason.

BASICSALARY	group.	Population in 2016	team'svictory	main
_basic	422	mindivermatter	Plot#3	LHR_Temp
basic_hra	Over time	FLOAT	2015_DDAY	car
#MEAN	queen.	hELLO	Int	Float

Answer:

Variable	Validity status	Reason
BASICSALARY	Yes	NIL
group.	No	Special symbol except underscore is not allowed in C++
Population in 2016	No	In Variable names space is not allowed
team'svictory	No	Special symbol except underscore is not allowed in C++
main	Yes	NIL
_basic	Yes	NIL
422	No	Name of variable cannot be started with numbers
mindivermatter	Yes	NIL
Plot#3	No	Special symbol except underscore is not allowed in C++
LHR_Temp	Yes	NIL
basic_hra	Yes	NIL
Over time	No	In Variable names space is not allowed
FLOAT	Yes	NIL
2015_DDAY	No	Name of variable cannot be started with numbers
car	Yes	NIL
#MEAN	No	Special symbol except underscore is not allowed in C++
queen.	No	Special symbol except underscore is not allowed in C++
hELLO	Yes	NIL
Int	Yes	NIL
Float	Yes	NIL

✓ Question No: 02

Point out the errors (if any) in the following C++ Statements.

S. No	Statement	Error State
a	int = 314.562*150;	No variable declared for integer
b	Name = 'Ajay';	The String is written within double quotation
c	Char = '3';	No variable declared for character
d	3.14*r*r*h=vol_of_cyl;	l'vuale must be written on the left side
e	K=(a*b)(c+(2.5a+b)(d+a);	One closing parenthesis is absent, also no steric For multiplication.
f	m_inst =rate of interest * amount in rs;	No space is allowed in the name of variable
g	si = principal * rateofinterest* numberofyears/100;	No error at all
h	area = 3.14 * r^2*h;	The power symbol "^" is not allowed in C++ syntax
i	volume = 3.14 *r^2**h;	Double steric is not in C++ syntax
j	k = ((a*b)+c)(2.5*a+b);	Several steric symbol are absent for multiplication
k	a = b = 3 =4;	Illegal assignment, 3 cannot be equal to 4.
l	count = count + 1;	No error at all
m	date = '2 Mar 04';	The String is written within double quotation

Question No: 03

Evaluate the following expressions and show their hierarchy;

(a): $g = \text{big} / 2 + \text{big} * 4 / \text{big} - \text{big} + \text{abc} / 3$;

(abc = 2.5, big = 2, assume g to be a float)

Evaluation and answer:

$$g = 2/2 + 2*4/2 - 2 + 2.5/3;$$

$$g = 1 + 8/2 - 2 + 0;$$

$$g = 1 + 4 - 2;$$

$$g = 5 - 2;$$

$$g = 3;$$

So the answer of the given statement will be 3;

(b): $\text{on} = \text{ink} * \text{act} / 2 + 3 / 2 * \text{act} + 2 + \text{tig}$;

(ink = 4, act = 1, tig = 3.2, assume on to be an int)

Evaluation and answer:

$$\text{on} = 4*1/2 + 3/2*1 + 2 + 3.2;$$

$$\text{on} = 4/2 + 1*1 + 2 + 3.2;$$

$$\text{on} = 2 + 1 + 2 + 3.2;$$

$$\text{on} = 5 + 3.2;$$

$$\text{on} = 8;$$

So the answer of the given statement will be 8;

(c): $s = \text{qui} * \text{add} / 4 - 6 / 2 + 2 / 3 * 6 / \text{god}$;

(qui = 4, add = 2, god = 2, assume s to be an int)

Evaluation and answer:

$$s = 4*2/4 - 6/2 + 2/3*6/2;$$

$$s = 8/4 - 3 + 0*6/2;$$

$$s = 2 - 3 + 0;$$

$$s = -1;$$

So the answer of the given statement will be -1;

(d): $s = 1/3 * a/4 - 6/2 + 2/3 * 6/g;$

(a = 4, g = 3, assume s to be an int)

Evaluation and answer:

$s = 1/3 * 4/4 - 6/2 + 2/3 * 6/3;$

$s = 0 * 1 - 3 + 0 * 2;$

$s = 0 - 3 + 0;$

$s = -3;$

So the answer of the given statement will be -1;

Question No: 04

Convert the following equations into corresponding C++ statements;

Question No: 01 ;

$Z = a^2 + b^2;$

Equivalent statement in C++;

$Z = a * a + b * b;$

Question No: 02 ;

$a^3 + b^3 + c^3 + 3abc;$

Equivalent statement in C++;

$z = a * a * a + b * b * b + c * c * c + 3 * a * b * c;$

Question No: 03 ;

$$A = a(x-1)x^2/2ab$$

Equivalent statement in C++;

$$A = a*(x-1)*x*x/2*a*b;$$

Question No: 04 ;

$$Z = (8.8(a+b)^2/c-0.5+2a/(q+r)) / (a+b)*(1/m)$$

Equivalent statement in C++;

$$Z = (8.8*(a+b)^2/c-0.5+2*a/(q+r)/(a+b)*(1/m);$$

Question No: 05 ;

$$X = (-b+(b*b)+2*4ac)/2a$$

Equivalent statement in C++;

$$X = (-b+(b*b)+2*4*a*c)/2*a;$$

Question No: 06 ;

$$R = (2v + 6.22(c+d))/g+v$$

Equivalent statement in C++;

$$R = (2*v+6.22*(c+d))/g+v;$$

Question No: 07 ;

$$A = (7.7b(xy+a)/c-0.8+2b)/(x+a)(1/y)$$

Equivalent statement in C++;

$$A = (7.7*b(x*y+a)/c-0.8+2*b)/(x+a)*(1/y);$$

Question No: 05

S.No	Program	Output
1	<pre>#include<iostream> #include<conio.h> using namespace std; int main() { int i = 2, j = 3, k, l ; float a, b ; k = i / j * j ; l = j / i * i ; a = i / j * j ; b = j / i * i ; cout<<k<<"\t"<<l<<"\t"<<a<<"\t"<<b; getch(); }</pre>	<pre>0 2 0 2</pre>

2	<pre>#include<iostream> #include<conio.h> using namespace std; int main() { int a, b; a = -3 -- 3 ; b = -3 -- (- 3) ; cout<<a<<"\t"<<b; getche(); }</pre>	0 -6
3	<pre>#include<iostream> #include<conio.h> using namespace std; int main() { float a = 5, b = 2 ; int c ; c = a % b ; cout<<a<<"\t"<<b<<"\n"<<c; getche(); }</pre>	Error Occur because modulus operator cannot Be used for floating point number.
4	<pre>#include <iostream> #include <conio.h> using namespace std; int main() { cout<<"nn \n\n nn\n"; cout<<"nn /n/n nn/n"; getche(); }</pre>	nn nn nn /n/n nn/n

5	<pre> #include<iostream> #include<conio.h> using namespace std; int main() { int a, b=7, c; a=b+++7; b-=a; c=a+--b; int d=a+b--c++; cout<<a++<<endl<<--b<<endl; cout<<a+b+c+++d; getche(); } </pre>	14 -9 28
6	<pre> #include <iostream> #include <conio.h> using namespace std; int main() { int a,x,y,z; a=x=7; y=a=5; z=x=9; x+=y; x+=y; y+=x+z; z+=x--+y++; cout<<a<<endl<<x; cout<<endl<<a++-y--; cout<<endl<<a+x+--y+z; getche(); } </pre>	5 18 -29 117

7	<pre> #include<iostream> #include<conio.h> using namespace std; int main() { int x, y, z; x=y=z=15; x++; y+=x++; z+=x+y; cout<<x+y<<"\t"<<y+z<<endl; cout<<x+y--z; getche(); } </pre>	48 94 110
8	<pre> #include<iostream> #include<conio.h> using namespace std; int main() { int a, b, c, d; a=b=5/3; c=d=a*5; a+=b+++c; d=a+b--c++; cout<<a+c/2<<endl; cout<<b*c/3<<endl; cout<<d+a+b*c; getche(); } </pre>	10 2 27

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