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Section: B

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COMSAT university Islamabad Vehari Campus

Program No 1:

```
#include <iostream>
#include <conio.h>
  using namespace std;
  int main()
int i,*ptr; ptr=&i;
for(*ptr=0; *ptr<=1000; *ptr=*ptr+5)
cout<<*ptr<<" ";
}
return 0;
}
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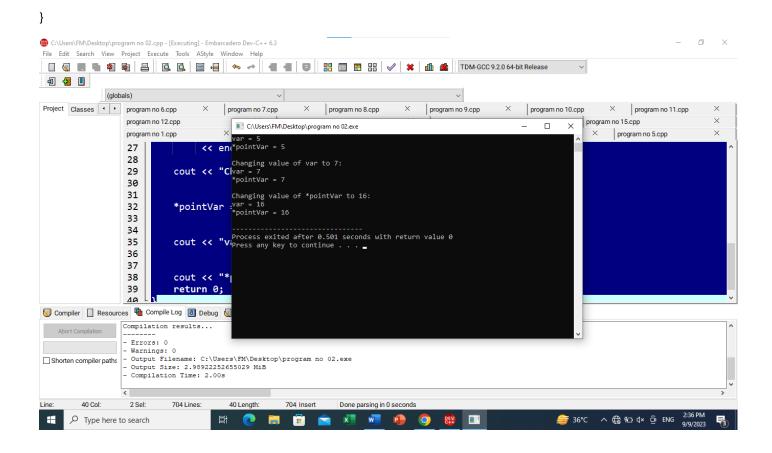
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                                #include <conio.h>
                                 using namespace std;
                          3
                                    int main()
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                                int i,*ptr; ptr=&i;
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                               for(*ptr=0; *ptr<=1000;</pre>
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                         10 ₽ {
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                               cout<<*ptr<<" ";
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```

Program No 2:

```
#include <iostream>
using namespace std;
int main() {
  int var = 5;
  int* pointVar;
  pointVar = &var;
  cout << "var = " << var << endl;
  cout << "*pointVar = " << *pointVar << endl
     << endl;
  cout << "Changing value of var to 7:" << endl;</pre>
  var = 7;
  cout << "var = " << var << endl;
  cout << "*pointVar = " << *pointVar << endl</pre>
     << endl;
  cout << "Changing value of *pointVar to 16:" << endl;</pre>
  *pointVar = 16;
  cout << "var = " << var << endl;
  cout << "*pointVar = " << *pointVar << endl;</pre>
  return 0;
```



Program No 3:

```
#include <iostream>

using namespace std;

void test(int*, int*);
int main() {
    int a = 5, b = 5;
    cout << "Before changing:" << endl;
    cout << "a = " << a << endl;
    cout << "b = " << b << endl;

    test(&a, &b);

cout << "\nAfter changing" << endl;
    cout << "\a = " << a << endl;
    cout << "\o endl;
    cout << "\o endl;
    cout << "b = " << b << endl;
    cout << "b = " << b << endl;
    cout << "b = " << b << endl;
    return 0;
}</pre>
```

```
void test(int* n1, int* n2) {
        *n1 = 10:
        *n2 = 11;
}
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```

Program No 4:

```
#include <iostream>
  using namespace std;
  int main()
{

float num1, num2; float *ptr1, *ptr2; float div;
  cout << "Enter first number: "; cin >> num1;
  cout << "\nEnter second number: "; cin >> num2;
  ptr1 = &num1;

ptr2 = &num2; if(*ptr1>*ptr2){
  div = *ptr1 / *ptr2;

cout << "\nDivide is: " << div;</pre>
```

```
else{

cout<<"Cant divide by small number";
}

return 0;

}

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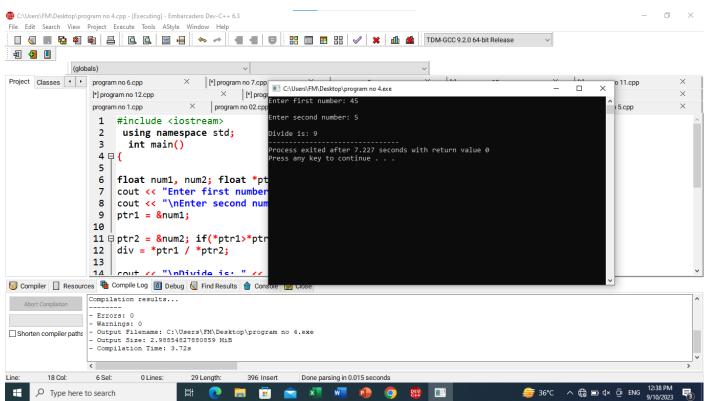
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```



Program No 5:

#include <iostream>

```
using namespace std;
int main()
{

int num1, num2; int *ptr1, *ptr2; int mul;
cout << "Enter first number: "; cin >> num1;
```

```
cout << "\n Enter second number: "; cin >> num2;
ptr1 = &num1; ptr2 = &num2;
mul = *ptr1 * *ptr2;
cout << "\n Multiple is: " << mul; return 0;</pre>
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Program No 6:
#include <iostream>
#include<conio.h>
 using namespace std;
```

```
#include<conio.h>
using namespace std;
int main() {
float a;

float *pt;

a = 564.01;

pt = &a; (*pt)++;
cout << "Increment Value of A = " << a;
++(*pt);</pre>
```

```
cout << "Increment Value of A = " << a; (*pt)--;
cout << "Decrement Value of A = " << a;
--(*pt);
cout << "Decrement Value of A = " << a; return 0;</pre>
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```

Program No 7:

```
#include <iostream>
#include <conio.h>

using namespace std;

int main() {
    int *p1, *p2;
    int num1, num2, sum;

cout << "Pointer Example C++ Program : Add Two Numbers \n";</pre>
```

```
cout << "\nEnter Two Numbers for Sum : \n";</pre>
 cin>>num1;
 cin>>num2;
 p1 = &num1;
 p2 = &num2;
 sum = *p1 + *p2;
 cout << "Sum of Two Numbers : " << sum;
 getch();
 return 0;

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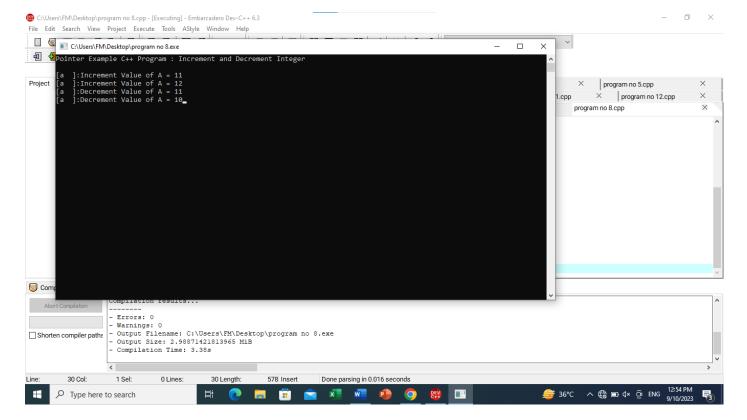
Program No 8:

#include <iostream>

#include<conio.h>

using namespace std;

```
int main() {
 int a;
 int *pt;
 cout << "Pointer Example C++ Program : Increment and Decrement Integer\n";</pre>
 a = 10;
 pt = &a;
 (*pt)++; //Post Increment
 cout << "\n[a ]:Increment Value of A = " << a;
 ++(*pt); //Pre Increment
 cout << "\n[a ]:Increment Value of A = " << a;
 (*pt)--; //Post Decrement
 cout << "\n[a ]:Decrement Value of A = " << a;</pre>
 --(*pt); //Pre Decrement
 cout << "\n[a ]:Decrement Value of A = " << a;</pre>
 getch();
 return 0;
}
```



Program No 9:

```
}
  cout << "\nLength of String : " << i;</pre>
  cout << "\nVowels Count In the String : " << c;</pre>
  cout << "\nConstant Count in the String : " << (i - c);</pre>
  getch();
  return 0;
}
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                                                                                                                                                    2Pointer Example C++ Program : Count vowels String Enter Any string (small letters) [below 20 chars] : sana
        Length of String : 4
Vowels Count In the String : 2
Constant Count in the String : 2
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```

Program No 10:

```
#include <iostream>
#include <conio.h>

using namespace std;

int main() {
    char str[20], *pt;
    int i = 0;
```

```
cout << "Pointer Example C++ Program : Calculate Length of String \n";</pre>
 cout << "Enter Any string [below 20 chars] : ";</pre>
 cin>>str;
 pt = str;
 while (*pt != '\0') {
   i++;
   pt++;
 }
 cout << "\nLength of String : " << i;</pre>
 getch();
 return 0;
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Program No 11:

#include <iostream>

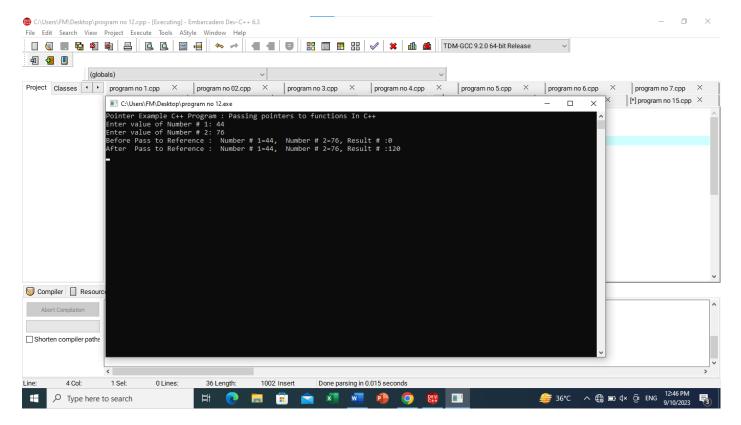
#include<conio.h>

using namespace std;

```
void area_of_circle(float *value, float *result) {
  *result = 3.14 * (*value) * (*value);
}
int main() {
  float radius, area;
  cout << "Pointer Example C++ Program : Area Of Circle Using Pointer and Functions\n";</pre>
  cout << "\nEnter the radius of Circle: ";
  cin>>radius;
  area_of_circle(&radius, &area);
  cout << "\nArea of Circle: " << area;
  getch();
  return 0;
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```

Program No 12:

```
#include <iostream>
#include<conio.h>
using namespace std;
void add_numbers(int *value1, int *value2, int *result) {
 *result = *value1 + *value2;
}
int main() {
 int number1, number2, result = 0;
 cout << "Pointer Example C++ Program : Passing pointers to functions In C++ \n";
 cout << "Enter value of Number # 1: ";
 cin>>number1;
 cout << "Enter value of Number # 2: ";
 cin>>number2;
 cout << "Before Pass to Reference: Number # 1=" << number1 << ", Number # 2=" << number2 << ", Result #:" << result <<
" \n";
 add_numbers(&number1, &number2, &result);
 cout << "After Pass to Reference: Number # 1=" << number1 << ", Number # 2=" << number2 << ", Result #:" << result <<
"\n";
 getch();
 return 0;
}
```



Program No 13:

```
#include <iostream>
#include <conio.h>

using namespace std;

#define MAX_SIZE 5

int main() {

   int var[5];
   int i = 0, sum = 0;

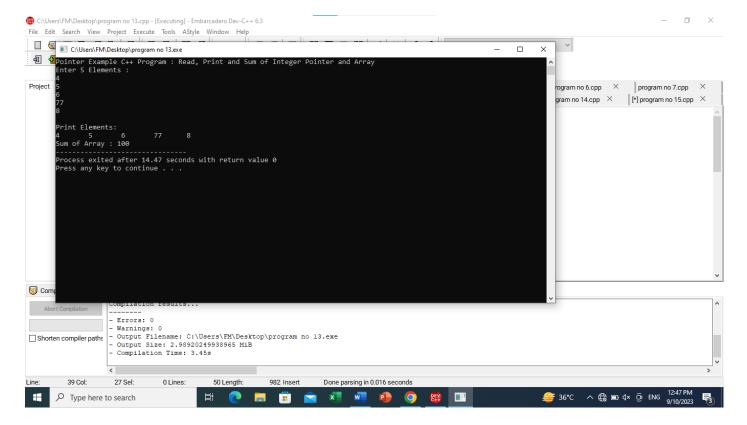
   int *pt;

   cout << "Pointer Example C++ Program : Read, Print and Sum of Integer Pointer and Array \n";

pt = &var[0];</pre>
```

```
cout << "Enter " << MAX_SIZE << " Elements : \n";
while (i < MAX_SIZE) {
 cin>>*pt;
 i++;
 pt++;
}
i = 0;
pt = &var[0];
cout << "\nPrint Elements:\n";</pre>
while (i < MAX_SIZE) {
 i++;
 cout << *pt << "\t";
 sum = sum + *pt;
 pt++;
}
cout << "\nSum of Array : " << sum;</pre>
getch();
return 0;
```

}



Program No 14:

```
#include <iostream>
#include <conio.h>

using namespace std;

int main() {

    int *p1, *p2;
    int num1, num2, diff;

    cout << "Pointer Example C++ Program : Find a difference between two Numbers \n";

    cout << "\nEnter Two Numbers for Find a Difference : \n";

    cin>>num1;

    cin>>num2;

p1 = &num1;

p2 = &num2;
```

```
diff = *p1 - *p2;
 cout << "Difference :" << diff;</pre>
 getch();
 return 0;
}
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Compiler Resource
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```

Program No 15:

```
#include <iostream>
#include <conio.h>

using namespace std;

void swap_numbers(int *value1, int *value2) {
  int temp;
  temp = *value1;
  *value1 = *value2;
  *value2 = temp;
}
```

```
int main() {
 int number1, number2;
 cout << "Simple Example Program for Swap Numbers Using Pointers In C++\n";
 cout << "Enter value of Swap Number # 1: ";
 cin>>number1;
 cout << "Enter value of Swap Number # 2: ";</pre>
 cin>>number2;
 cout << "Before Swapping: Number # 1=" << number1 << ", Number # 2=" << number2 << "\n";
 swap_numbers(&number1, &number2);
 cout << "After Swapping: Number # 1=" << number1 << ", Number # 2=" << number2 << "\n";
 getch();
 return 0;
}
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Enter value of Swap Number # 2: 3
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