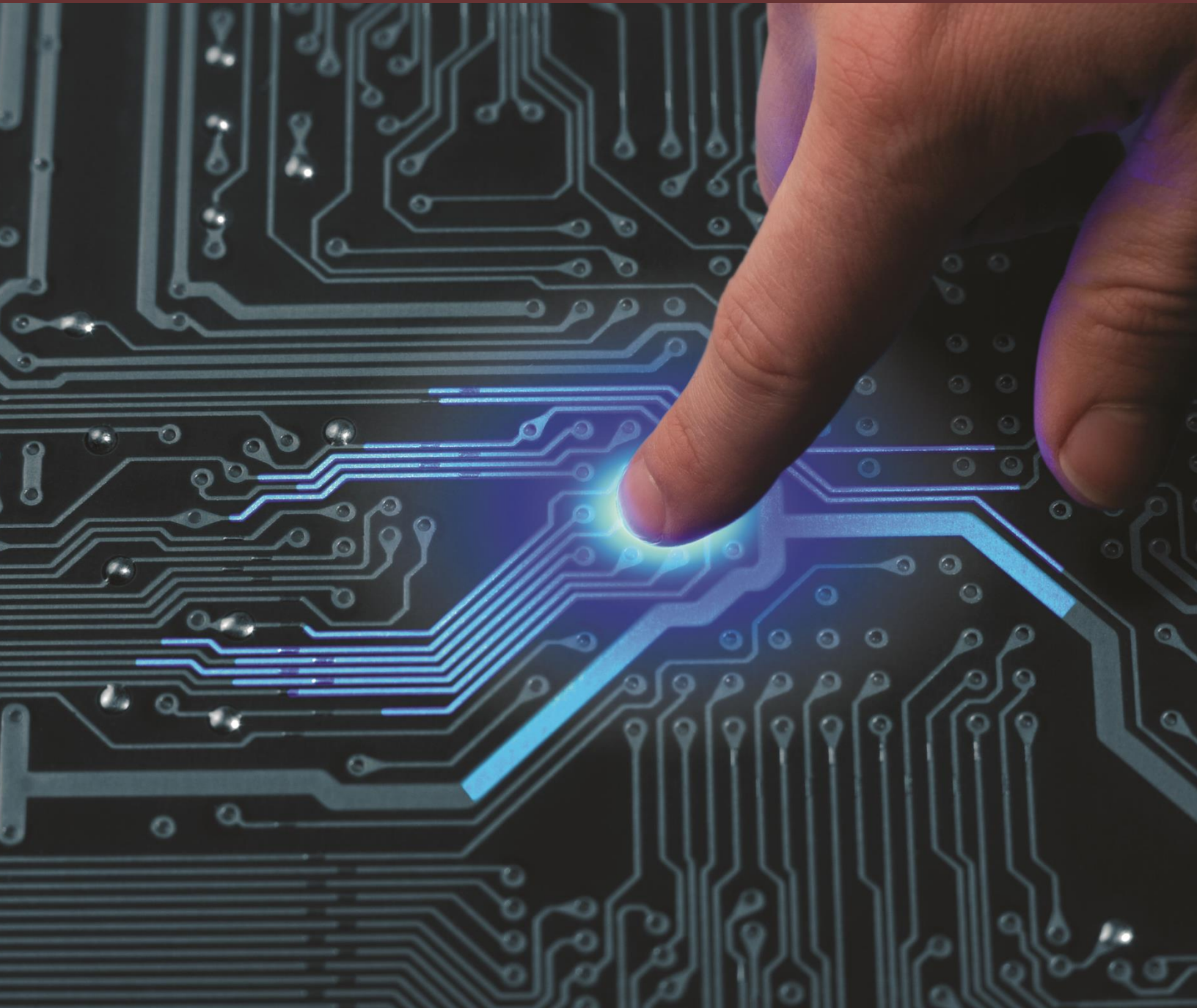


Computer Systems And Programming



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Computer Systems and Programming

Q1. Write a C++ program to print the total number of populations in Punjab, Sindh, KPK, and Balochistan using a switch case.

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
6      int p;
7      cout << "To find population of" << endl;
8      cout << "punjab: type 1" << endl;
9      cout << "sindh: type 2" << endl;
10     cout << "balochistan: type 3" << endl;
11     cout << "kpk: type 4" << endl;
12     cin >> p;
13     switch (p) {
14     case (1):
15         cout << "54.86 million" << endl;
16         break;
17     case (2):
18         cout << "21.7 million" << endl;
19         break;
20     case (3):
21         cout << "40.85 million" << endl;
22         break;
23     case (4):
24         cout << "127.47 million" << endl;
25         break;
26     default:
27         cout << "Invalid province" << endl;
28         break;
29     }
30     return 0;
31 }
32
```

```
To find population of
punjab: type 1
sindh: type 2
balochistan: type 3
kpk: type 4
```

```
2
21.7 million
```

```
Process returned 0 (0x0)   execution time : 2.126 s
Press any key to continue.
```

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Q2. Write a C++ program to check whether an alphabet is a vowel or consonant using a switch case.

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
6      char alph;
7      cout << "Enter your alphabet" << endl;
8      cin >> alph;
9      switch (alph) {
10         case ('a'):
11             cout << "Your alphabet is a vowel" << endl;
12             break;
13         case ('e'):
14             cout << "Your alphabet is a vowel" << endl;
15             break;
16         case ('i'):
17             cout << "Your alphabet is a vowel" << endl;
18             break;
19         case ('o'):
20             cout << "Your alphabet is a vowel" << endl;
21             break;
22         case ('u'):
23             cout << "Your alphabet is a vowel" << endl;
24             break;
25         default:
26             cout << "Your alphabet is a consonant" << endl;
27             break;
28     }
29     return 0;
30 }
31
```

```
Enter your alphabet
a
Your alphabet is a vowel
```

```
Process returned 0 (0x0)   execution time : 2.981 s
Press any key to continue.
```

```
Enter your alphabet
b
Your alphabet is a consonant
```

```
Process returned 0 (0x0)   execution time : 1.282 s
Press any key to continue.
```

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Q3. Write a C++ program to check whether a number is positive, negative, or zero using a switch case.

```
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int num;
6      cout << "Enter a number: ";
7      cin >> num;
8      char result;
9      switch (num > 0 ? 1 : (num < 0 ? -1 : 0)) {
10         case 1:
11             result = 'P';
12             break;
13         case -1:
14             result = 'N';
15             break;
16         case 0:
17             result = 'Z';
18             break;
19         default:
20             cout << "Invalid input" << endl;
21             return 1;
22     }
23     cout << "The number is " << result << endl;
24
25     return 0;
26 }
27
```

```
Enter a number: 2
The number is P
```

```
Process returned 0 (0x0)   execution time : 1.260 s
Press any key to continue.
```

```
Enter a number: -9
The number is N
```

```
Process returned 0 (0x0)   execution time : 1.902 s
Press any key to continue.
```

```
Enter a number: 0
The number is Z
```

```
Process returned 0 (0x0)   execution time : 1.412 s
Press any key to continue.
```

Computer Systems and Programming

Q4. Write a C++ to find out whether a person is an adult, teenager, or child using nested if-else.

```
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int age;
6      cout << "Enter the person's age: " << endl;
7      cin >> age;
8      if (age >= 13) {
9          if (age < 18) {
10             cout << "The person is a teenager." << endl;
11          } else {
12             cout << "The person is an adult." << endl;
13          }
14      } else {
15          cout << "The person is a child" << endl;
16      }
17      return 0;
18  }
```

Enter the person's age:

17

The person is a teenager.

Process returned 0 (0x0) execution time : 3.150 s
Press any key to continue.

Enter the person's age:

21

The person is an adult.

Process returned 0 (0x0) execution time : 1.007 s
Press any key to continue.

Enter the person's age:

9

The person is a child

Process returned 0 (0x0) execution time : 1.661 s
Press any key to continue.

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Q5. Write a C++ program that takes three numbers from the user and find the greatest number out of the three numbers using nested if-else statements.

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
6      int num1, num2, num3;
7      cout << "Enter your three numbers" << endl;
8      cin >> num1;
9      cin >> num2;
10     cin >> num3;
11     if (num1 > num2) {
12         if (num1 > num3) {
13             cout << "First number is the largest" << endl;
14         } else { cout << "Third number is the largest" << endl;
15         }
16     } else if (num2 > num1) {
17         if (num2 > num3) {
18             cout << "Second number is the largest" << endl;
19         } else { cout << "Third number is the largest" << endl; }
20     }
21
22     return 0;
23 }
24
```

Enter your three numbers

1
2
3

Third number is the largest

Process returned 0 (0x0) execution time : 1.590 s
Press any key to continue.

Enter your three numbers

1
3
2

Second number is the largest

Process returned 0 (0x0) execution time : 5.345 s
Press any key to continue.

Enter your three numbers

3
2
1

First number is the largest

Process returned 0 (0x0) ex
Press any key to continue.

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Q6. Write a C++ program to check whether the alphabet entered by the user is Vowel or Consonant using nested if-else.

```
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      char alph;
6      cout << "Enter an alphabet" << endl;
7      cin >> alph;
8      if (alph >= 'a' && alph <= 'z') {
9          if (alph == 'a' || alph == 'e' || alph == 'i' || alph == 'o' || alph == 'u') {
10             cout << alph << " is a vowel." << endl;
11         } else {
12             cout << alph << " is a consonant." << endl;
13         }
14     } else {
15         cout << "Invalid input. Please enter an alphabet." << endl;
16     }
17
18     return 0;
19 }
20
```

Enter an alphabet

e

e is a vowel.

Process returned 0 (0x0) execution time : 0.528 s
Press any key to continue.

Enter an alphabet

f

f is a consonant.

Process returned 0 (0x0) execution time : 0.790 s
Press any key to continue.

Enter your alphabet

2

Invalid alphabet

Process returned 0 (0x0) execution time : 0.712 s
Press any key to continue.