**Pointers**

1. What is pointer and how it works? What is life time and scope of pointer in C?
2. How many levels of pointers can you have?
3. What is NULL pointer and when it is used?
4. What is void pointer? When we use void pointer?
5. What is dangling pointer?
6. What mathematical operations, we can perform on pointers?
7. What is function pointer and what is the advantage of function pointer?
8. How function pointer is different from normal pointer?
9. Write a program to dynamically allocate memory to array (1-D,2-D & 3-D).
10. What is the difference between malloc, calloc, free() & realloc()?
11. What is heap, stack in process? How will you find size of stack?
12. What will happen if you free a pointer twice?
13. What is the difference between NULL & NUL?
14. What is output of following program?

#include <stdio.h>

int main()

{

    char    \*str="IncludeHelp";

    printf("%c\n",\*&\*str);

    return 0;

}

1. What is the output of following program?

#include <stdio.h>

int main()

{

int iVal;

char cVal;

void \*ptr; // void pointer

iVal=50; cVal=65;

ptr=&iVal;

printf("value =%d,size= %d\n",\*(int\*)ptr,sizeof(ptr));

ptr=&cVal;

printf("value =%d,size= %d\n",\*(char\*)ptr,sizeof(ptr));

return 0;

}

1. What is the output of following program

#include <stdio.h>

void foo(int\*);

int main()

{

int i = 10;

foo((&i)++);

}

void foo(int \*p)

{

printf("%d**\n**", \*p);

}

1. What is the output of following program?

#include <stdio.h>

void foo(int\*);

int main()

{

int i = 10, \*p = &i;

foo(p++);

}

void foo(int \*p)

{

printf("%d**\n**", \*p);

}

1. What is the output of following program?
2. #include <stdio.h>
3. void foo(float \*);
4. int main()
5. {
6. int i = 10, \*p = &i;
7. foo(&i);
8. }
9. void foo(float \*p)
10. {
11. printf("%f**\n**", \*p);
12. }
13. What is the output of following program?
14. #include <stdio.h>
15. int main()
16. {
17. int i = 97, \*p = &i;
18. foo(&i);
19. printf("%d ", \*p);
20. }
21. void foo(int \*p)
22. {
23. int j = 2;
24. p = &j;
25. printf("%d ", \*p);
26. }
27. What is the output of following program?
28. #include <stdio.h>
29. int main()
30. {
31. int i = 97, \*p = &i;
32. foo(&p);
33. printf("%d ", \*p);
34. return 0;
35. }
36. void foo(int \*\*p)
37. {
38. int j = 2;
39. \*p = &j;
40. printf("%d ", \*\*p);
41. }
42. What is the output of following program?
43. #include <stdio.h>
44. int main()
45. {
46. int i = 11;
47. int \*p = &i;
48. foo(&p);
49. printf("%d ", \*p);
50. }
51. void foo(int \*const \*p)
52. {
53. int j = 10;
54. \*p = &j;
55. printf("%d ", \*\*p);
56. }
57. What is the output of following program?
58. #include <stdio.h>
59. int main()
60. {
61. int i = 10;
62. int \*p = &i;
63. foo(&p);
64. printf("%d ", \*p);
65. printf("%d ", \*p);
66. }
67. void foo(int \*\*const p)
68. {
69. int j = 11;
70. \*p = &j;
71. printf("%d ", \*\*p);
72. }
73. What is the output of following program?
74. #include <stdio.h>
75. int main()
76. {
77. int i = 10;
78. int \*const p = &i;
79. foo(&p);
80. printf("%d**\n**", \*p);
81. }
82. void foo(int \*\*p)
83. {
84. int j = 11;
85. \*p = &j;
86. printf("%d**\n**", \*\*p);
87. }