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Output of C Programs | Set 2

Predict the output of below programs.

Question 1

```c
char *getString()
{
    char str[] = "Will I be printed?";
    return str;
}
int main()
{
    printf("%s", getString());
    getchar();
}
```

Run on IDE

Output: Some garbage value

The above program doesn't work because array variables are stored in Stack Section. So, when getString returns values at str are deleted and str becomes dangling pointer.

Question 2

```c
int main()
{
    static int i=5;
    if(--i){
        main();
        printf("%d ",i);
    }
}
```

Run on IDE

Output: 0 0 0 0

Explanation: Since i is a static variable and is stored in Data Section, all calls to main share same i.

Question 3

```c
int main()
{
    static int var = 5;
    printf("%d ",var--);
    if(var)
        main();
}
```

Run on IDE

Output: 5 4 3 2 1

Explanation: Same as previous question. The only difference here is, sequence of calling main and printf is changed, therefore different output.

Question 4

```c
int main()
{
    int x;
    printf("%d",scanf("%d",&x));
    /* Suppose that input value given
       for above scanf is 20 */
    return 1;
}
```

Run on IDE

Output: 1

scanf returns the no. of inputs it has successfully read.

Question 5

```c
# include <stdio.h>
int main()
{
    int i=0;
    for(i=0; i<20; i++)
    {
        switch(i)
        {
            case 0:
                i+=5;
            case 1:
                i+=2;
            case 5:
                i+=5;
            default:
                i+=4;
                break;
        }
        printf("%d  ", i);
    }

    getchar();
    return 0;
}
```

Run on IDE

Output: 16 21

Explanation:

Initially i = 0. Since case 0 is true i becomes 5, and since there is no break statement till last statement of switch block, i becomes 16. Now in next iteration no case is true, so execution goes to default and i becomes 21.

In C, if one case is true switch block is executed until it finds break statement. If no break statement is present all cases are executed after the true case. If you want to know why switch is implemented like this, well this implementation is useful for situations like below.

```c
switch (c)
{
    case 'a':
    case 'e':
    case 'i' :
```

```
    case 'o':
    case 'u':
      printf(" Vowel character");
      break;
    default :
      printf("Not a Vowel character");; break;
  }
```

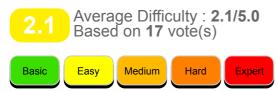# GATE CS Corner   Company Wise Coding Practice

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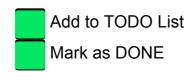
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