Question 1:

char globBuf[65536];   /* 1. globBuf: uninitialized data section/*

reason: globBuf is an uninitialized global variable.

```
00000000002001D0  d  _GLOBAL_OFFS
0000000000bc5060  B  globBuf
                  w  _gmon_start
```

int primes[] = { 2, 3, 5, 7 }; /* 2. D: initialized data section */

reason: primes is an initialized global variable.

```
0000000000201000  D  MDUT.2778
0000000000201010  D  primes
                  U  printf@@GLIBC_2_2_5
```

static int square(int x)   /* 3. t-: text (code) section.*/

reason: because the methods is in text section.

```
00000000000003f0  t  register
000000000000068a  t  square
0000000000000580  T  start
```

int result;   /* 4. stack: in register/*

reason: result is a local variable and is initialized in the code.

```
00000000000006a0 <doCalc>:
  6a0:   55                       push   %rbp
```

return result   /* 5. Return value passed by: register*/

```
000000000000068a <square>:
 68a:   55                       push   %rbp
 68b:   48 89 e5                 mov    %rsp,%rbp
 68e:   89 7d ec                 mov    %edi,-0x14(%rbp)
 691:   8b 45 ec                 mov    -0x14(%rbp),%eax
 694:   0f af 45 ec              imul   -0x14(%rbp),%eax
 698:   89 45 fc                 mov    %eax,-0x4(%rbp)
 69b:   8b 45 fc                 mov    -0x4(%rbp),%eax
 69e:   5d                       pop    %rbp
 69f:   c3                       retq
```

doCalc(int val) /* 6. t-: text (code) section */

reason: because the methods is in text section.


```
000000000000005b0 t deregister_tm_clones
00000000000006a0 t doCalc
0000000000000640 t   do global dtors aux
```

int t;

if the condition(val<1000) is true, t is **allocated in stack** because this is a local variable and initialized, and if the condition false this **variable is not allocate.**


```
8b 55 fc              mov    -0x4(%rbp),%edx
8b 45 ec              mov    -0x14(%rbp),%eax
89 c6                 mov    %eax,%esi
```

int main(int argc, char* argv[])   /*8. t-: text (code) section*/

reason: because the methods is in text section.


```
0000000000000702 T main
```

static int key = 9973;   /*9. d-: initialized data section */

reason: because it is an initialized variable.


```
0000000000201020 d key.2775
00000000000007a0 T    libc csu fini
```

static char mbuf[10240000]; /* 10. B-: BSS uninitialized data*/

reason: because it is uninitialized static variable


```
0000000000000702 T main
0000000000201060 b mbuf.2776
0000000000201010 D primes
```

char* p;   /* 11. Not allocated.


```
711:    8b 05 09 09 20 00         mov    0x200909(%rip)
2775>
717:    89 c7                     mov    %eax,%edi
```

P is a local variable in main but is not in stack because p is not initialized, therefore is not allocated.