

CS 241

Data Organization

Quiz 5

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Question 1

```
void main(void)
{
    int x=2, y=3;
    int *px;
    px = &x;
    printf("%d\n", *px + y);
}
```

The output is:

A 0

B 2

C 5

D 7

E 92

Question 1

```
void main(void)
{
    int x=2, y=3;
    int *px;
    px = &x;
    printf("%d\n", *px + y);
}
```

The output is:

A 0

B 2

C 5

D 7

E 92

Question 2

```
void main(void)
{ int a[] = {22,33,44};
  int *x = a;
  printf("sizeof(int)=%lu ", sizeof(int));
  printf("x=%p, x[0]=%d\n", x, x[0]);
  x = x + 2;
  printf("x=%p, x[0]=%d\n", x, x[0]);
}
```

sizeof(int)=4 x=0x7fff29af6530, x[0]=22
is the output from lines 4-5. Output from line 7 is:

- A x=0x7fff29af6532, x[0]=23
- B x=0x7fff29af6532, x[0]=33
- C x=0x7fff29af6534, x[0]=33
- D x=0x7fff29af6538, x[0]=44

Question 2

```
void main(void)
{ int a[] = {22,33,44};
  int *x = a;
  printf("sizeof(int)=%lu ", sizeof(int));
  printf("x=%p, x[0]=%d\n", x, x[0]);
  x = x + 2;
  printf("x=%p, x[0]=%d\n", x, x[0]);
}
```

sizeof(int)=4 x=0x7fff29af6530, x[0]=22
is the output from lines 4-5. Output from line 7 is:

- A x=0x7fff29af6532, x[0]=23
- B x=0x7fff29af6532, x[0]=33
- C x=0x7fff29af6534, x[0]=33
- D x=0x7fff29af6538, x[0]=44

Question 3

a.out 0011023

```
void main(int argc, char *argv[])
{
    if (argc == 2)
    {
        int n = 0;
        char *c_pt = argv[1];
        while (*c_pt)
        {
            if (*c_pt < '0' || *c_pt > '1') break;
            n = n*2 + *c_pt - '0';
            c_pt++;
        }
        printf("%d\n", n);
    }
}
```

A 00110

B 110

C 6

D 3

E 010

Question 3

a.out 0011023

```
void main(int argc, char *argv[])
{
    if (argc == 2)
    {
        int n = 0;
        char *c_pt = argv[1];
        while (*c_pt)
        {
            if (*c_pt < '0' || *c_pt > '1') break;
            n = n*2 + *c_pt - '0';
            c_pt++;
        }
        printf("%d\n", n);
    }
}
```

A 00110

B 110

C 6

D 3

E 010

Question 4

```
char *findSubstring(char *str, char *needle)
{ int len = strlen(needle);
  int n = 0;
  while (*str)
  { printf("%c%c ", *str, *needle);
    if ( *(needle+n) == *str)
    { n++;
      if (n == len) return (str-len)+1;
    }
    else
    { str -= n;
      n = 0;
    }
    str++;
  }
  return NULL;
}
```


Question 4

What is the output of: `findSubstring("ABCDE","CD")`

A AC BC CC DD

B AC BC CC DC

C AC BC CC DC EC

D AC BC CC DC ED

E AC BC CC

Question 4

What is the output of: `findSubstring("ABCDE","CD")`

A AC BC CC DD

B AC BC CC DC

C AC BC CC DC EC

D AC BC CC DC ED

E AC BC CC

Question 5

```
char *findSubstring(char *str, char *needle)
{ int len = strlen(needle);
  int n = 0;
  while (*str)
  { printf("%c%c ",*str, *(needle+n));
    if ( *(needle+n) == *str)
    { n++;
      if (n == len) return (str-len)+1;
    }
    else
    { str -= n;
      n = 0;
    }
    str++;
  }
  return NULL;
}
```

Question 5

What is the output of: `findSubstring("ACDCDEF","CDE")`

A AC CC DC CC DC CC DC EC

B AC CC DC CC DC CC DD EE

C AC CC DD CE DE CE DE EE

D AC CC DD CE DC CC DD EC

E AC CC DD CE DC CC DD EE

Question 5

What is the output of: `findSubstring("ACDCDEF","CDE")`

A AC CC DC CC DC CC DC EC

B AC CC DC CC DC CC DD EE

C AC CC DD CE DE CE DE EE

D AC CC DD CE DC CC DD EC

E AC CC DD CE DC CC DD EE

Question 6

```
void main(void)
{ long a[] = {7, 13, 17};
  long *x = a;
  printf("sizeof(long)=%lu ", sizeof(long));
  printf("x=%p, x[0]=%ld\n", x, x[0]);
  x = x + 2;
  printf("x=%p, x[0]=%ld\n", x, x[0]);
}
```

sizeof(long)=8 x=0x7fff04794670, x[0]=7
is the output from lines 4-5. Output from line 7 is:

- A x=0x7fff04794680, x[0]=17
- B x=0x7fff04794678, x[0]=17
- C x=0x7fff04794672, x[0]=13
- D x=0x7fff04794678, x[0]=7
- E x=0x7fff04794672, x[0]=7

Question 6

```
void main(void)
{ long a[] = {7, 13, 17};
  long *x = a;
  printf("sizeof(long)=%lu ", sizeof(long));
  printf("x=%p, x[0]=%ld\n", x, x[0]);
  x = x + 2;
  printf("x=%p, x[0]=%ld\n", x, x[0]);
}
```

sizeof(long)=8 x=0x7fff04794670, x[0]=7
is the output from lines 4-5. Output from line 7 is:

- A x=0x7fff04794680, x[0]=17
- B x=0x7fff04794678, x[0]=17
- C x=0x7fff04794672, x[0]=13
- D x=0x7fff04794678, x[0]=7
- E x=0x7fff04794672, x[0]=7