`GDB Real Examples

Example 1: Show data at or near top of stack

```
(gdb) x/10xg $rsp
0x7fffffffdf00:     0x0000000000000000  0x00000006fc23ac08
0x7fffffffdf10:     0x0000000000000010  0x403099999999999a
0x7fffffffdf20:     0x400ccccd3f8ccccd  0x41866666408ccccd
0x7fffffffdf30:     0x00007fff42020000  0x00007ffff7ffe190
0x7fffffffdf40:     0x0000000000000003  0x0000000000000006

(gdb) x/12xw $rsp
0x7fffffffdf00:     0x00000000   0x00000000   0xfc23ac08   0x00000006
0x7fffffffdf10:     0x00000010   0x00000000   0x9999999a   0x40309999
0x7fffffffdf20:     0x3f8ccccd   0x400ccccd   0x408ccccd   0x41866666

(gdb) x/14xh $rsp
0x7fffffffdf00:     0x0000 0x0000 0x0000 0x0000 0xac08 0xfc23 0x0006 0x0000
0x7fffffffdf10:     0x0010 0x0000 0x0000 0x0000 0x999a 0x9999

(gdb) x/10ug $rsp
0x7fffffffdf00:     0                   30000000008
0x7fffffffdf10:     16                  4625365702295525786
0x7fffffffdf20:     4615288900054469837 4721573848700210381
0x7fffffffdf30:     140734300815360           140737354129808
0x7fffffffdf40:     3                   6

(gdb) x/10uw $rsp
0x7fffffffdf00:     0            0            4230196232   6
0x7fffffffdf10:     16           0            2576980378   1076926873
0x7fffffffdf20:     1066192077   1074580685
```

Example 2: Show the value in a register. ‘p’ command is used to show data at the immediate location; no dereferencing.

```
(gdb) p/x $rbp
$3 = 0x7fffffffdf80

(gdb) p/c $rbp
$4 = 128 '\200'

(gdb) p/s $rbp
$5 = (void *) 0x7fffffffdf80

(gdb) p/a $rbp
$6 = 0x7fffffffdf80

(gdb) p/c $rbp
$7 = 128 '\200'

(gdb) p/f $rbp
$8 = 6.9533558074239417e-310

(gdb) p/d $rbp
$12 = 140737488347008
```

Example 3: Show the value in a location of memory

```
(gdb) p/x {unsigned long}0x7fffffffdf80
$14 = 0x4012a0

(gdb) p/d {unsigned long}0x7fffffffdf80
$15 = 4199072
```

Example 4: Show the value in a variable. Suppose: long code = -9;

```
(gdb) p/x code
$19 = 0xfffffffffffffff7

(gdb) p/d code
$20 = -9

(gdb) p/u code
$21 = 18446744073709551607

(gdb) p/c code
$22 = -9 '\367'

(gdb) p/s code
$23 = -9

(gdb) p/f code
$24 = -nan(0xffffffffffff7)
```

Example 5: Show the value in an SSE register.

```
gdb) p $xmm2
$17 = {
v4_float = {4.86134792e+30, 1.18351389e+22, 1.15879485e+24, 2.05317485e-19},
v2_double = {2.0276206528306006e+174, 2.195271193382769e-152},
v16_int8 = {115, 111, 117, 114, 99, 101, 32, 100, 101, 98, 117, 103, 103, 101, 114, 32},
v8_int16 = {28531, 29301, 25955, 25632, 25189, 26485, 25959, 8306},
v4_int32 = {1920298867, 1679844707, 1735746149, 544367975},
v2_int64 = {7214878080844001139, 2338042651350491749},
uint128 = 43129274422879851065258697760741617523
}
```

```
(gdb) p/d $xmm2
$14 = {
v4_float = {-1, -1, -1, 0},
v2_double = {9223372036854775807, 0},
v16_int8 = {115, 111, 117, 114, 99, 101, 32, 100, 101, 98, 117, 103, 103, 101, 114, 32},
v8_int16 = {28531, 29301, 25955, 25632, 25189, 26485, 25959, 8306},
v4_int32 = {1920298867, 1679844707, 1735746149, 544367975},
v2_int64 = {7214878080844001139, 2338042651350491749},
uint128 = 43129274422879851065258697760741617523
}
```

```
gdb) p/t $xmm2
$15 = {
  v4_float = {11111111111111111111111111111111, 11111111111111111111111111111111,
    11111111111111111111111111111111, 0},
  v2_double = {111111111111111111111111111111111111111111111111111111111111111, 0},
  v16_int8 = {1110011, 1101111, 1110101, 1110010, 1100011, 1100101, 100000, 1100100,
    1100101, 1100010, 1110101, 1100111, 1100111, 1100101, 1110010, 100000},
  v8_int16 = {110111101110011, 111001001110101, 110010101100011, 110010000100000,
    110001001100101, 110011101110101, 110010101100111, 10000001110010},
  v4_int32 = {1110010011101010110111101110011, 1100100001000000110010101100011,
    1100111011101010110001001100101, 100000011100100110010101100111},
  v2_int64 = {110010000100000011001010110001101110010011101010110111101110011,
    10000001110010011001010110011101100111011101010110001001100101},
  uint128 =
    10000001110010011001010110011101100111011101010110001001100101011001000010000001100101011
    0001101110010011101010110111101110011
}



(gdb) p/x $xmm2
$16 = {
  v4_float = {0xffffffff, 0xffffffff, 0xffffffff, 0x0},
  v2_double = {0x7fffffffffffffff, 0x0},
  v16_int8 = {0x73, 0x6f, 0x75, 0x72, 0x63, 0x65, 0x20, 0x64, 0x65, 0x62, 0x75, 0x67, 0x67,
    0x65, 0x72, 0x20},
  v8_int16 = {0x6f73, 0x7275, 0x6563, 0x6420, 0x6265, 0x6775, 0x6567, 0x2072},
  v4_int32 = {0x72756f73, 0x64206563, 0x67756265, 0x20726567},
  v2_int64 = {0x6420656372756f73, 0x2072656767756265},
  uint128 = 0x20726567677562656420656372756f73
}
```