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In [1]: from pynq import Overlay
import pynq.lib.dma
overlay=Overlay("/home/xilinx/pynq/overlays/new_pd/project_newpd_dma.bit")
```

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In [ ]:
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In [2]: overlay?
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In [3]: from pynq import allocate
import numpy as np
```

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In [4]: in_buffer=allocate(shape=(64,),dtype=np.int64)
```

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In [6]: from array import *
a=array('i',[])
l=int(input("Enter the length of info: "))
for i in range(l):
    x=int(input())
    a.append(x)
```



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In [7]: for i in range(1):  
        print(a[i])
```



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In [8]: np.copyto(in_buffer,a)

In [9]: in_buffer

Out[9]: PynqBuffer([[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
                  0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0,
                  0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
                  1], dtype=int64)

In [10]: dma=overlay.pd_hier.pd_dma

In [11]: dma.sendchannel.transfer(in_buffer)

In [15]: out_buffer=allocate(shape=(32,),dtype=np.int32)

In [16]: for i in range(32):
          out_buffer[i]=i+1

In [17]: out_buffer

Out[17]: PynqBuffer([ 1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15,
                  16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30,
                  31, 32])

In [20]: dma.recvchannel.transfer(out_buffer)

In [21]: out_buffer

Out[21]: PynqBuffer([ 0,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15,
                  16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30,
                  31, 32])

In [22]: dma.register_map

Out[22]: RegisterMap {
    MM2S_DMACR = Register(RS=1, Reset=0, Keyhole=0, Cyclic_BD_Enable=0, IOC_IrqEn=1,
Dly_IrqEn=0, Err_IrqEn=0, IRQThreshold=1, IRQDelay=0),
    MM2S_DMASR = Register(Halted=0, Idle=1, SGIncl=0, DMAIntErr=0, DMASlvErr=0, DMA
DecErr=0, SGIntErr=0, SGSlvErr=0, SGDecErr=0, IOC_Irq=1, Dly_Irq=0, Err_Irq=0, IRQ
ThresholdSts=0, IRQDelaySts=0),
    MM2S_CURDESC = Register(Current_Descriptor_Pointer=0),
    MM2S_CURDESC_MSB = Register(Current_Descriptor_Pointer=0),
    MM2S_TAILDESC = Register(Tail_Descriptor_Pointer=0),
    MM2S_TAILDESC_MSB = Register(Tail_Descriptor_Pointer=0),
    MM2S_SA = Register(Source_Address=377794560),
    MM2S_SA_MSB = Register(Source_Address=0),
    MM2S_LENGTH = Register(Length=128),
    SG_CTL = Register(SG_CACHE=0, SG_USER=0),
    S2MM_DMACR = Register(RS=1, Reset=0, Keyhole=0, Cyclic_BD_Enable=0, IOC_IrqEn=1,
Dly_IrqEn=0, Err_IrqEn=0, IRQThreshold=1, IRQDelay=0),
    S2MM_DMASR = Register(Halted=0, Idle=1, SGIncl=0, DMAIntErr=0, DMASlvErr=0, DMA
DecErr=0, SGIntErr=0, SGSlvErr=0, SGDecErr=0, IOC_Irq=1, Dly_Irq=0, Err_Irq=0, IRQ
ThresholdSts=0, IRQDelaySts=0),
    S2MM_CURDESC = Register(Current_Descriptor_Pointer=0),
    S2MM_CURDESC_MSB = Register(Current_Descriptor_Pointer=0),
    S2MM_TAILDESC = Register(Tail_Descriptor_Pointer=0),
    S2MM_TAILDESC_MSB = Register(Tail_Descriptor_Pointer=0),
    S2MM_DA = Register(Destination_Address=377794560),
    S2MM_DA_MSB = Register(Destination_Address=0),
    S2MM_LENGTH = Register(Length=4)
}

```

In [24]: `in_buffer.physical_address`

Out[24]: 377786368

In [25]: `out_buffer.physical_address`

Out[25]: 377794560

In [ ]:

In [ ]: