on an x86 architecture

Let's say we have a database with 8,973 entries. Each contains:

- Name: char array – Up to 50 characters → 56 bytes
- Department: char array - Up to 12 characters → 16 bytes
- Section: char array - Up to 8 characters → 8 bytes
- Additional: char array - Up to 50 characters → 56 bytes
- GPA: double → 8 byte
- ID: Unsigned integer → 4

Determine the amount of memory consumed storing these entries on a Disk with block of 512 bytes using both segmentation and paging. Draw the layout of the first three blocks for each.

Size = 148 => Add 4 => 152 bytes

Segmentation

R1	R2	R3	Seg
152	152	152	56

R1	R2	R3	Seg
152	152	152	56

R1	R2	R3	Seg
112	132	152	36

Total Blocks = 2991 => 2991 × 512 = 1,531,392 bytes

Pagins

R1	R2	R3	R4-1
152	152	152	56

R4-2	R5	R6	R7-1
96	152	152	112

R7-2	R8	R9	R10
40	152	152	152

R4

All of 10

8973 × 152 = 1,363,896 bytes