Problem ST-5 (2 parts)  Pointers and Arrays

The following variables are allocated in memory beginning at address 5000.

Part A (10 points) Complete the memory map below with the variable names at each word or byte in memory. Do not include the variable’s value.

```plaintext
5000 5004 5008 5012 5016 5020 5024 5028 5032 5036 5040

int  A = 555;
int  B = 678;
int  *P = &A;
char  C = 'X';
char  S[] = "Help!";
char  *T = &(S[3]);
```

Part B (16 points) Using the variables in part A, give the values of each expression. Assume expressions are non-cumulative (i.e., they follow the declarations). Answers may be characters.

```
P    555  678  555  678
*P
S
*(P+1)
&T
& C
*(S+1)
T[-2]
```

Compare variables S and T. Are they interchangeable? Why or why not?

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