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<pre> /** * substr.s * PARAMETERS: X0 (STRING) * X1 (RANGE BEGIN) * X2 (RANGE END) * OUTPUT : X0 (POINTER TO SUBSTRING) * ALL REGISTERS PRESERVED EXCEPT X0 */ .text .global substr substr: // storing X0-X19 registers, as malloc will not preserve most of the se str X1, [sp, -16]! stp X2, X3, [sp, -16]! stp X4, X5, [sp, -16]! stp X6, X7, [sp, -16]! stp X8, X9, [sp, -16]! stp X10, X11, [sp, -16]! stp X12, X13, [sp, -16]! stp X14, X15, [sp, -16]! stp X16, X17, [sp, -16]! stp X18, X19, [sp, -16]! stp X20, X21, [sp, -16]! str lr, [sp, -16]! mov x19, x0 // copying string in x19 mov x20, x1 // copying begin in x20 mov x21, x2 // copying end in x21 mov x0, x21 sub x0, x0, x20 sub x0, x2, x1 // using difference for malloc cmp x0, #0 // if the difference is less or equal to 0, input is invalid. exit routine b.ge substrPreLoop mov x0, #0 // invalid input, throw null b substrEnd substrPreLoop: add x0, x0, #1 // need one extra byte for null bl malloc // calling malloc with requests bytes mov x1, #0 substrLoop: ldrb w17, [x19, x20] // loading byte of given string into w17 strb w17, [x0, x1] // storing w17 into new string add x1, x1, #1 add x20, x20, #1 // incrementing cmp x20, x21 // comparing x19 to x20 b.lt substrLoop // if increment ≥ end, goto end label mov w17, #0 // storing null strb w17, [x0, x1] substrEnd: // popping registers back from stack ldr lr, [sp], 16 ldp X20, X21, [sp], 16 ldp X18, X19, [sp], 16 ldp X16, X17, [sp], 16 ldp X14, X15, [sp], 16 ldp X12, X13, [sp], 16 ldp X10, X11, [sp], 16 ldp X8, X9, [sp], 16 </pre>		

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<pre> ldp X6, X7, [sp], 16 ldp X4, X5, [sp], 16 ldp X2, X3, [sp], 16 ldr X1, [sp], 16 ret lr </pre>		