CS101 ASSIGNMENT1

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- Course: CS101
- Study Program: BBIT
- Current Semester: 1st

PART A

Step 1:

Convert -9/5 into binary value:

=-9/5

=-4.5

Step 2:

To figure out sign bit we will look at the value if the value is negative its sign bit will be 1.

Step 3:

For Mantissa:

8	**4**	**2**	**1**	**.**	**1/2**	**1/4**	**1/8**
	1	**0**	**0**	**.**	**1**		

Now,

=100.1

=0.1001

Step 4:

Exponent= +3

In Binary: 11

Exponent consist of 3 bits so;

3 bits = 011

Step 5:

Therefore, the 8-bit binary representation of -9/2 using the floating-point notation is: 110110010

PART B

Figuring out smallest negative value

STEP 1:

Sign bit is 1 if value is negative.

STEP 2:

Exponent has 3 bits then the minimum representing value will 000

STEP 3:

Mantissa has 4 bits then the minimum representing value will 0000

Then smallest negative value will be 10000000

PART C

Figuring out largest positive value

STEP 1:

Sign bit is 1 if value is positive.

STEP 2:

Exponent has 3 bits then the maximum representing value will 111

STEP 3:

Mantissa has 4 bits then the maximum representing value will 1111

Then smallest negative value will be 01111111.