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ages = input('Enter the age range (e.g., 0:1:100): ');
ages = double(ages);
young = max(1 - ages / 30, 0);
middle_age = max(min((ages - 35) / 10, (55 - ages) / 10), 0);
union_set = max(young, middle_age);
intersection_set = min(young, middle_age);
complement_young = 1 - young;
complement_middle_age = 1 - middle_age;
figure;
subplot(3, 2, 1);
plot(ages, young, 'b-', 'LineWidth', 1.5);
title('Fuzzy Set: Young');
xlabel('Age');
ylabel('Membership Degree');
grid; subplot(3, 2, 2);
plot(ages, middle_age, 'r-', 'LineWidth', 1.5);
title('Fuzzy Set: Middle Age'); xlabel('Age');
ylabel('Membership Degree'); grid;
subplot(3, 2, 3);
plot(ages, union_set, 'g-', 'LineWidth', 1.5);
title('Union of Young and Middle Age');
xlabel('Age');
ylabel('Membership Degree');
grid;
subplot(3, 2, 4);
plot(ages, intersection_set, 'm-', 'LineWidth', 1.5);
title('Intersection of Young and Middle Age');
xlabel('Age');
ylabel('Membership Degree');
grid;
subplot(3, 2, 5);
plot(ages, complement_young, 'c-', 'LineWidth', 1.5);
title('Complement of Young');
xlabel('Age');
ylabel('Membership Degree'); grid;
subplot(3, 2, 6);
plot(ages, complement_middle_age, 'y-', 'LineWidth', 1.5);
title('Complement of Middle Age');
xlabel('Age');
ylabel('Membership Degree');
grid;

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