

HW 2

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Franklin Marathon Registration System Requirements

Introduction

The Franklin Marathon is an annual running event held during the first full weekend of May. The registration software for this event must correctly calculate and apply registration fees, date-based pricing, senior discounts, and bundled registration discounts. The purpose of this document is to define the system requirements in a clear and testable format to ensure that the registration process is accurate, consistent, and fair for all participants.

1. Registration Periods and Pricing

1.1 The system shall open registration each year on October 1st and close registration on the Thursday before race weekend.

1.2 The system shall apply the following price schedules based on the registration period:

- Super Early Registration (October 1–October 31): Full \$75, Half \$65, 10K \$50, 5K \$30
- Early Registration (November 1–February 29): Full \$80, Half \$70, 10K \$55, 5K \$40
- Baseline Registration (March 1–April 1): Full \$95, Half \$85, 10K \$70, 5K \$50
- Late Registration (April 2–Thursday before race weekend): Full \$109, Half \$99, 10K \$89, 5K \$64

2. Event Scheduling and Registration Options

2.1 The system shall assign the 5K and 10K races to Saturday of race weekend.

2.2 The system shall assign the Full Marathon and Half Marathon to Sunday of race weekend.

2.3 The system shall allow runners to register for one Saturday event and one Sunday event in the same year.

3. Discounts

3.1 The system shall apply a 20% discount to the combined registration fee if a runner registers for one Saturday event and one Sunday event in the same transaction (“bundled registration”).

3.2 The system shall apply a \$5 discount to any single-race registration if the runner is 65 years or older at the time of registration.

3.3 The system shall apply an additional \$10 discount (in addition to the 20% bundle discount) to bundled registrations if the runner is 65 years or older.

4. Calculation and Output

4.1 The system shall calculate the final registration fee in the following order:

- Determine base fee from registration date and race.
- Apply bundling discount (if applicable).
- Apply senior discount (if applicable).

4.2 The system shall display to the runner the base fee, discounts applied, and final amount due.

4.3 The system shall validate registration dates and reject registrations attempted before October 1st or after the Thursday before race weekend.

4.4 The system shall enforce valid race combinations and reject multiple registrations for events on the same day.

Summary

These requirements define the expected behavior of the Franklin Marathon registration system. By adhering to the rules for pricing, scheduling, discounts, and calculation order, the system will ensure accuracy and fairness for all runners. The requirements also provide a solid foundation for test planning and acceptance criteria in alignment with the V-Model development process.